



ONLINE EDITION

# MONTHLY TECH NEWS

AUDIO • LIGHTS • VIDEO • STAGING • INTEGRATION

CX85, SEPTEMBER 2013 \$5.50

## Massive Visuals

Victorian State  
Schools Spectacular

## The Future

ANZ Stadium

### GEARBOX REVIEWS:

- SSL LIVE by Solid State Logic
- ROBE Pointe - Everything to everyone
- Allen & Heath QU-16, Digital Wizardry
- Chromlech Elidy-Life in mono(chrome)
- Shure Wireless Workbench 6

### CX NEWS:

- Up in smoke - order in N.S.W,
- Vale Colin Hill, Basement Trouble,
- Sustainability Conference,
- BiAmp in Australia,
- JANDS, SGM + MORE!

## Crew takes a bow

Einstein On The Beach

## Industry Miracle

The World Bar rebuild

## Road Skills

PINK, Splendour In The  
Grass festival & Manic  
Street Preachers

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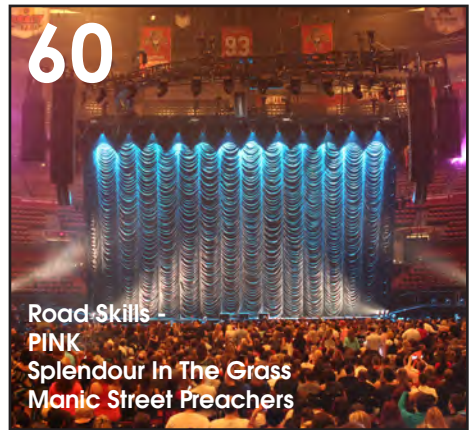
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**CX85 SEPTEMBER 2013. ISSUE 85. ONLINE EDITION**

EDITORIAL BY JULIUS GRAFTON

**MAGS, DIGITAL, APPS, CX-TV**

Recently **CX** stepped up the velocity on our websites and at **CX-TV** and now have new business spending advertising money there to connect with you, our audience. As a logical and foreseen consequence the number of print advertisements in this issue has dipped, leading to us dropping off 8 pages of print.

For around a year we ran 84 pages of **CX**, today you're holding or viewing a 76 page edition. It contains slightly more editorial material than usual. We value our circulation revenue, being one of the few magazines of this kind anywhere in the world that everyone pays to read.

Over time our monthly magazine has varied from 68 to 84 pages - since it became Connections. Channels started at 16 pages, and reached 64 pages over two years.

I thought it would be good to have this discussion, lest you ponder the print weight - or even notice at all.

Many print media titles are in big trouble - weekday editions of the Sydney Morning Herald are devoid of advertising, since the publishers reduced the size from broadsheet to tabloid, but kept the advertising rates the same. The obvious reaction of advertisers was to spend elsewhere. Now I think Fairfax will have no choice but to abandon print during weekdays.

When Juliusmedia closed our college in 2010, we took a big decision to invest heavily in web, App and **CX-TV**. It took two years for these to get a huge audience, and for us to get comfortable with the extra costs.

While we are going reasonably well, and certainly not losing money, part of the fun and challenge at **CX** is to stay ahead of the curve and to keep building audiences. All the painful and messy change that the big media firms are undergoing is sad to observe, and we hope quality journalism isn't diminished too much across the media world.

- **We are committed to print**
- **All our subscribers get a digital edition of this print mag, with a link sent early by email.**
- **More and more people buy us on Newsstand on the iPad - it is our flagship edition loaded with interactivity and embedded video.**
- **You'll find free news at juliusmedia.com**
- **Join our email list and get free e-news when it happens (not all the time!)**
- **Opinion and comments at cxmagblog.com**
- **On demand TV for any device (free, 24/7) at cx-tv.com**
- **And if you like us on Facebook (facebook.com/cxmagazine), you'll connect quicker when things happen!**

**Thanks for reading CX!**

- Julius

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# NEWS

## CX INDUSTRY NEWS



### Up in Smoke

'No haze, no pyro' order in NSW

**In June the Director General of the NSW Department of Planning and Infrastructure wrote to all councils in the state to demand a crack down on venues where smoke detectors are isolated to enable theatre haze, fog or pyro. Venues are slowly getting the message, put simply that isolation of a Smoke Detector is a breach of the Environmental Planning and Assessment Regulation 2000.**

Live Performance Australia wrote to the Director General to seek clarification and to date has none. Venues and production suppliers contacted CX expressing confusion and frustration at the arbitrary nature of the demand.

Delving into the act, which was overhauled several years ago, there appears to be a provision for an application to the Fire Commissioner for an exemption. No venue CX spoke to has done this, several said they revised their safety procedures and now utilise an external agency for fire wardens, which are specifically off duty fire fighters.

No venue was prepared to be quoted for comment, since the prohibition affects hirers who may find other venues less



Planning & Infrastructure

Office of the Director General

The General Manager  
All Councils

13/06112

Dear Sir/Madam

**Isolation of Smoke Alarm Systems for Theatrical Purposes**

I write to seek your assistance in communicating with relevant building owners in your local area about the dangers of isolating (switching off) smoke detection and alarm systems in buildings where smoke generating machines or indoor pyrotechnics are being used.

informed or more prepared to risk breaching the regulation.

CX has attended multiple performances in NSW in the month prior to publication where hazers have been used, but the letter from the Director General is specific: isolation of required alarm systems 'is not permitted'.

**Do you know more? Has something similar happened in other states? Email [juliusmedia@me.com](mailto:juliusmedia@me.com)**



### Vale Colin Hill

Rode guy checks out

**In March this year RØDE Microphones announced that Colin Hill was retiring from the company after more than 22 years as International Sales Manager. Colin was instrumental in establishing the company's presence in almost every major international market.**

Joining parent company Freedman Electronics in 1991, Colin was one of only three employees when RØDE was originally founded. Along with owner and Managing Director Peter Freedman, Colin established the RØDE brand and launched its first microphone, the NT2, into the international marketplace. The last 22 years has seen Colin constantly travelling around the globe demonstrating RØDE's product range, which has grown to include more than 100 microphones and accessories distributed in every major market in the world.

Colin's trademark bass voice and iconic Akubra hat were instantly recognisable at the NAMM and Music Messe

shows over the years, and his presence is sorely missed within the music industry. Sadly, Colin was diagnosed with lung cancer last year, and finally passed away on August 19th.

"Colin has been with me on this incredible journey that is RØDE since day one," commented RØDE's founder and President, Peter Freedman. "I actually met Colin when I was 19 years old and he was with the UK manufacturer Carlsbro, so we go back a very long way indeed. I feel honoured and proud to have had the pleasure of working so closely with a true audio industry legend, and have enjoyed a countless number of laughs and possibly even more beers with him."



Colin Hill



## Sydney's Basement faces Fair Work action

Soundguy for 19 years, fired without notice

**Chris Mysinski is highly regarded and very well known as production manager and sound engineer at iconic Sydney club The Basement. Until new owners arrived in March this year and dispensed with his services.**



Chris Mysinski

Now it appears Chris had never been paid superannuation, and was possibly hired under a 'sham contract' by the original owners. His deal was a day rate, and he typically worked as many as seven days and as few as four, per week.

**CX** reported on our Blog (July 5) that the venue had undergone a strange transformation. The entrance has moved back to the lane, instead of through the upstairs addition that cost the previous owners well over a million to install.

A huge and extremely colourful mural now plasters the wall in what used to be the Jazz Bar. Framed pictures and

posters seem to be disappearing from the walls. Apparently it's now some kind of buffet area – there's a table fashioned from a pallet and the strange wheel-out drinks bar. With a sign painted on a venetian blind. The fire stairs had a stack of kegs blocking the door.

The food has gone somewhere weird as well, with punters at tables eating what looked like fajitas, or some other thing involving wraps served in tacky plastic containers.

But it is the treatment of Chris that rankles us technical types. A new booker was installed as well, which trashed the continuity of the music roster which is what had the place peaking a decade ago when Chris Richards looked after the bands.

Chris Mysinski says the new guys terminated his services, despite him having shows booked through the year. He had always been recognised as the venue's production manager on artist communications, and even had business cards to that effect.

"I'm pissed", he told **CX**, and intends pursuing the venue for unfair dismissal and superannuation. Sham Contracts are investigated by the Fair Work Ombudsman and can result in very severe fines for employers.



## Sustainable Stages Conference

Greener Live Performances

**Live Performance Australia has joined its environmental sustainability initiative, 'Greener Live Performances through Energy Efficiency' with CX Summer Roadshow next February.**

The Greener Live Performances project is now delivering information specifically developed for small to medium enterprises (SMEs) throughout the industry supply chain nationally including fact sheets, checklists, and energy efficient venue and event design guides.

All production suppliers and venues are invited to sign up by emailing your details to [greener@liveperformance.com.au](mailto:greener@liveperformance.com.au)

The project will utilise the Sustainable Stages Conference held nationally as part of the **CX Summer Roadshow** to

workshop issues and validate methods developed between now and February next.

LPA have partnered with EC3 Global who are translating their local and global learnings from the travel, tourism and convention industry to live performance venues. Festival and event specialists GreenShoot Pacific are sharing their knowledge of cutting edge practice in the contemporary music and festivals space. Lisa Erhart from Dynamic EcoSolutions has returned following LPA's successful two year pilot project in Queensland.

Greener Live Performances through Energy Efficiency is for the entire industry, not just LPA members.



News Briefs

### Brian Vayler new SM for NAS

In the wake of the departure of Chris Cummings, Brian Vayler has been appointed as Sales Manager at National Audio Systems.

Brian has been with NAS for the last two years working in a sales capacity within their pro audio team. Brian's background has provided him considerable experience within the pro audio, MI and commercial

audio fields. As a musician he has performed in some of Australia's largest venues with touring bands and artists. He has worked in and managed a large MI retail outlet for several years and has toured as a FOH engineer for Planetshakers Church and independent artists around the world. Prior to his position as Production Director at Planetshakers Church, Brian managed the Commercial Audio Division of Yamaha Corporation for Australia and New Zealand.



Brian Vayler





## BiAmp extends network into Australia/NZ

**BiAmp Systems, the dominant player in the Australian DSP and networked processing market, is pleased to announce the addition of James Harvey to the Global Sales Team as the new Australia/New Zealand Area Manager. Based in Victoria, Australia, Harvey will report to Matthew Packer, Asia Pacific Regional Director.**

As the Area Manager, Harvey will oversee sales throughout the region. Joining BiAmp from his previous position as a Regional Sales Manager with Yamaha Commercial Audio, Harvey has over 20 years of experience in the installed audio industry as an engineer, company director, and sales manager throughout Australia.

Harvey has extensive experience in cultivating customer and partner relationships, and designing and

implementing product training. With his combined education in music, acoustic engineering, and mechanical engineering, Harvey is an installed audio veteran. "James is a great addition to our Sales Team for this region," said Matthew Packer, Asia Pacific Regional Director. "He has the right combination of experience we need to help BiAmp continue its growth of market share in this region, and to further strengthen BiAmp as an industry leader."



James Harvey



## Jands appointed As Movecat distributor in Australia

**Jands announce they have been recently appointed as the exclusive distributor of Movecat in Australia. The appointment comes after Jands supplied thirty-two 500kg Movecat chain hoists to the ANZ stadium in Sydney.**

Movecat develops and manufactures chain hoists and controllers in Germany with the highest standards of safety and functionality. Movecat products are suitable for the most critical applications such as the setting up and dismantling of stage, concert and studio sets, and the setting-up hoists for fixed installations in theatres, studios

and multi-function halls where safety and versatility are key required features.

"Taking on the distribution of the German Movecat maintains Jands philosophy of only representing premium world class products," said Paul Mulholland, Jands Managing Director. "Germany is renowned for making the best mechanical products in the world and Movecat maintain this tradition and arguably provide the best designed and manufactured chain motor in the industry."



## ULA's Wall of Light

**ULA Group has made another firm commitment to the Australian theatre industry by becoming a key sponsor of the 'Wall of Light' - a unique digital artwork project of La Boite Theatre Company in Brisbane.**

The original project 'Wall of Light' came to life at the beginning of this year, when theatre management was seeking creative ways in which to thank their donors and supporters and display their names in the foyer of the theatre.

Blair Terrace worked closely with Terese Casu, who was General Manager of the Theatre. Having heard their concept, and the unique nature of the project he decided to specify a VuePix LED mesh (M20) screen for the foyer area. The screen is fit into "board style" frame and has a frosted layer of diffused Acrylic in front, where the names of the sponsors are engraved. The graphics and artistic content has been generated and is controlled via ArKaos

Media Master Software.

The Vuepix LED Mesh illuminates the wall with subtle colour

patterns and abstract video images. These can be customized to suit depending on the time of day or the performance in residence.

Cuono Biviano, Managing Director of ULA Group comments: "It is with great pleasure for us to support this unique visual piece of art and give back to the industry which gave so much to us. My hat goes off to all those involved at La Boite in designing the Wall of Light and respect to all other sponsors of the theatre. We look forward to the continual support of La Boite."



La. Boite



Anya is the most technologically advanced sound system ever created. She is so different from every other sound system that we shouldn't call her a "sound system". In fact, she is not.

Anya is a concept – a whole new way to deliver sound reinforcement.

Anya is born from more than 15 years of research into technology that shapes and directs large-scale audio output. Anya adapts total array performance to deliver stunningly uniform high SPL coverage with such precision that the room effectively disappears. We call this Adaptive Performance™.

With Anya, you never have a reflection from a large wall because she makes it as if there are no walls. There is no ceiling, no roof, no nearby houses. With in-situ refinements, there are no balcony faces.

Nor are there any cheap seats. Anya so precisely crafts performance that virtually every location receives powerful, full frequency response. Sculpt the sound beam to reach the top of the farthest balcony, but not the wall just above it. Anya lets you be that exact.

Yet for all her capabilities, Anya is simple and intuitive. No complicated array angle, no addressing individual loudspeakers. Just tell Anya where you want the sound; she'll do the rest.

With the room eliminated, all that remains is a defined coverage area where the people that bought the tickets will experience what they came to experience – the artist.



## New Company Launches SGM Lighting in Australia

**New company Entertainment Technology Australia launched the revitalised SGM lighting brand at this year's Entech Tradeshow held in Sydney during July. SGM was purchased in early 2012 by Peter Johansen, the former founder of Martin Lighting.**

Since taking over SGM he has relocated the company back to his homeland Denmark and put together a world leading R&D team which are developing a range of unique, innovative new LED products.

The brand was well received at Entech with ETA reporting a flood of enquiries on the range and a continuous stream of positive comments, many from Australia's lighting industry leaders. Renowned Lighting Designer, Rohan Thornton of Firelight made the following comments; "Seeing the new SGM range at Entech was refreshing. In a time where we are seeing much more of the same, there were a number of SGM products which definitely caught my eye."

Dave Croxton, who has a long history of distribution in Australia, is behind the set up of Entertainment Technology Australia. "The entertainment technology industry is faced with many challenges at the moment"

observes Dave, "not the least being the flood of cheap product out of China. From my experience however it is the innovation of the individuals who have created certain brands and their vision for the future that really drives the ongoing economic survival of the sector. Peter Johansen is certainly one of those individuals and his R & D team are world leaders."

Jamie Payet has taken on the role of National Sales Manager for SGM. Jamie has a long history in the industry both in retail and distribution, as well as being a professional musician and running his own production company. Industry newcomer Wayne Chadwick has also invested in the new company and will head up business development in the civil project area.



## Jands Vista Grooves the Moo

**Indie pop duo/couple Matt & Kim who hail from Brooklyn, New York, have just toured Australia as part of the Groovin' The Moo festival. Lighting designer Ian Lyles uses a Jands Vista L5 console for the arena, club and theatre shows that the band play in America and so when he found out that he would be visiting Australia, Ian made calling into Jands HQ a priority. Ian was particularly keen to see the Vista M1 and S1 consoles.**

"We were interested in trying out the Vista S1 as we're thinking of buying an M1 or S1 for our small Catalyst rig in the US," said Ian. "We run bullet security cameras as iMag along with content running on Resolume from our playbacks rack. I was also intrigued to see if I could run a larger show, such as an arena show, on a smaller console like the Vista S1."

Jands kindly lent Ian a Vista S1 console for the Groovin' The Moo tour and Ian also had the opportunity to use it on

a couple of theatre-size shows to see just how versatile it could be.

"I loved it!" he declared. "I can take the show from the Vista L5 and rearrange it to fit comfortably onto the Vista S1. The work flow is the same in fact you can bounce around between all of the Vista consoles very easily. Its compact size means it is portable and I could carry it onto a plane which is rather convenient for summer fly dates."

"The Vista consoles are intuitive, easy to set up and quick to program," he added. "You can have a show up and running very fast if need be. As for adapting larger shows day to day, I really like the ease of use for cloning and cue editing. It's unpretentious and straightforward."



Ian Lyles

## Short Technical Courses in January



Juliusmedia and The Concourse (Chatswood) have partnered to deliver short sharp technical training courses within Sydney's newest performing arts centre. These new CONCOURSES draw from a decade of training experience at Juliusmedia and take advantage of the latest technical equipment installed at Concourse. Concourses are for people interested in developing skills for live production in theatre and venues. Concourses are INDUSTRY ACCREDITED.



Stage Lighting Basics  
Mon 6, Tue 7 January  
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# SHARPY WASH 330

THE LITTLE WASH-LIGHT THAT MAKES A BIG DIFFERENCE



Sharpy Wash 330 is an extraordinarily compact, lightweight 330W washlight, with the luminous efficiency, graphic and optical performance of a more powerful 1000W fixture. It is extremely silent and quick, fitted with a complete CMY colour system, additional colour wheel, 6.5 – 48 degree zoom, mechanical dimmer, beam shaping filter and motorised top-hat. It is an eco-friendly light, consuming very little power therefore saving on consumption costs.

The optical system is highly versatile with a zoom that ranges from 6.5° (a "narrow" angle that makes it quite similar to the Sharpy) to a striking 48°, which is perfect for theatrical and television environments.

# Mechs on the Beach the crew of the Arts Centre Melbourne get a curtain call

Einstein on the Beach is often called one of the greatest artistic achievements of the 20th century. It's a divisive, abstract work with no plot, no narrative and a thundering minimalist score. It's also 4 1/2 hrs long with no intervals. The audience can enter and leave whenever they like. But not the crew, who also appear on stage as part of the show. How do you run such a feat of endurance? Jason Allen found out....



Einstein on the Beach stands as one of the greatest works in the opera and theatre canon of recent years. Despite its complexity, running time, abstraction and what some perceive as inaccessibility, it's testament to its substance that an experimental work that premiered in 1976 is still being performed to full houses almost 40 years later. It made composer Philip Glass, director Robert Wilson and choreographer Lucinda Childs famous, if not notorious, in the contemporary art and theatre scene of the late seventies. They have all gone on to have stellar careers at the cutting edge of music, theatre and dance.

The opera unfolds as a series of abstract tableaus, loosely drawing on images related to the life and work of Albert Einstein. Light, central to his exploration of relativity, is a major character. Images such as a train, which Einstein famously used as a metaphor to explain the speed of light, a courtroom, scientific equipment and a nuclear explosion are all used as a canvas for a troupe of singers, dancers and actors to play out long sequences of numbers, syllables and abstract poetry against Glass's imperceptibly changing music.

## Mechs to the stage, please

Einstein made one of its rare appearances this July/August in the Arts Centre Melbourne's State Theatre. For five shows only, audiences had the chance to immerse themselves in this epoch-defining work. The Arts Centre crew are accustomed to epic works of contemporary opera and theatre, and are currently preparing for a production of Wagner's Ring Cycle. But it's not often they become part of the show.

BY JASON ALLEN



The mechs and lighting techs of Arts Centre Melbourne became moving art. Dressed in their customary black, the crew were choreographed to appear on stage moving at the glacial pace of the show to move sets and position props. In one dramatic scene, 10 year old cast member Jasper is atop a two story tall gantry on a harness. The gantry “breaks” at the bottom (slowly, of course) and a scaffold moves on stage to intercept the young performer. The crew move him from the falling gantry to the scaffold, transferring his harness and fly ropes across to safety. All elegantly, slowly and beautifully. No pressure.

As the opera slowly transitions from one scene to another, the crew walk in a purposeful, measured stride across the stage. A giant “bed” in two halves is pushed onstage sideways on wheels, and slowly lowered into position, nonsensically taking its place in the middle of a courtroom. Around 40 minutes later, it’s picked up and wheeled off again, almost imperceptibly, by the same crew. As they go about their practical business, singers, dancers and actors play out their mathematically precise tasks around them, and the mechs blend right in.

From stage left (prompt side to us theatre tragics) a single crew member slowly spools out an invisible line that is coming from the grid. He walk backwards slowly across the stage as the line makes a diagonal progress across the proscenium arch. Over the next 30 minutes, a tiny figure of a gyroscope slowly moves up and down the invisible line, back and forth across the stage, in front of the action. It’s just barely lit by a white light. It’s one of the tiny, slowly moving details that make this work utterly hypnotic. At 4 ½ hours, Einstein completely distorts your perception of the passage of time, just like the General Theory of Relativity. At the end of the scene, the line is spooled back up by the same crew member, slowly, in reverse.

### This is your four-and-a-half-hour call

Incredibly, the major technical operators of the show – stage management, lighting and sound – do the whole show without a break. When asked how that is physically possible, the general consensus is “Stop drinking fluids two hours before”.

Head of Sound Dan Dryden has been working with the Philip Glass Ensemble since 1982, and has personally mixed around 120 performances of Einstein since its first revival in 1984. The biggest change to the sound design in that time has been the advent of digital desks. The current production is the first to go fully digital, and specifies a Yamaha PM5D-RH at Front of House and an M7CL-48 in the pit on foldback duties.

“We’ve been working with Yamaha desks since the PM5D came out” said Dan. “Anything else and you have to take your own. We specify Yamaha because they’re always available. It’s difficult to specify any other desk and have them turn up. There’s no substitute for digital desks at monitors. If you’re twisting a knob on an analogue desk by hand, you can only hope for 5% accuracy at best. Some of these musicians are requesting changes of 2dB between scenes”

The Einstein channel count is deceptively simple; two keyboards, three woodwinds and a soprano vocalist in the pit, plus a roving chorus of 12 on radios and IEMs. The sound achieved is huge and hypnotic. Dan has opts for small format line arrays in order to deliver Glass’s and musical director Michael Reisman’s vision. “I like small format line arrays because they don’t intrude on the visual space” explained Dan. “Anything from Meyer, d&b or L’Acoustics. For me, anyone else is a distant second.”



**Decibels courtesy d&b**

This production sees a d&b Q Series PA sub hired from Melbourne’s Alpha Audio fill out the State Theatre. Two flown left/right arrays consisting of 6x Q1 and 3x Q subs a side are supplemented by two ground stacks of 2x Q subs and 5x Q1s. A front fill of d&b 4s covers the first few rows. A pair of Meyer UPAs are used on stage for an imaging effect in one scene, and Meyer UPJs are flown above stage for performer foldback. Pit Wedges are d&b E8. D12 amps run the whole system, with DSP taking place in the amps. The whole system is controlled by d&b’s R1 software.

Having worked with Glass for so long, Dan has a unique insight to the composer’s style and uniquely comfortable usage of amplification. “It’s amplified chamber music” continued Dan. “It’s a hybrid of straight ahead amplified

rock and chamber music. It’s an ingenious marriage of those two sensibilities. This philosophy of the marriage between classical and popular music in terms of amplification is a product of collaboration between Philip and Kurt Munkacsy, who was Philip’s original sound designer. Kurt deserves a lot of credit for developing this. This is what’s great about working for Philip. He lets all of us become invested and engaged in the process and lets us use our wits and talents to solve problems and innovate. Half of his body of work is direct collaborations with other creators. He’s a guy who is not afraid to share his vision”

**White Light, White Heat**

Associate lighting designer John Torres has a background in opera and ballet and is based out of New York. He’s been





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Crew from left to right: Brendan Osborne (ACM), Derek Johnson (EOB), Janet Clancy (EOB), Ryan Kelly (EOB), Stephen MacKenzie (ACM), Will Maconachie (ACM), Tim Blundell (ACM), Valerie Light (EOB), Philip Kellelt (ACM), Joel Zirnsak (ACM), Oden Willson (ACM), Stephen Webber (ACM), Alex Giroud (ACM), Kane Allen (ACM), Craig Kidwell (EOB), Geoffrey Yeomans (ACM), Marline Kingsley (ACM), David Craven (ACM), Lachlan Cameron (ACM), Misha Doe (ACM), Claire Marmur (ACM), Sean Vournazos (ACM), Jeremy Lydic (EOB), Jenni Bowman (EOB), Joe Giordano (EOB)

with this revival since its inception in mid 2011. While the lighting design draws on the last revival of 1992, there have been a lot of technology driven changes in the meantime. With the introduction of moving lights, the show now has half the lighting inventory of the last production.

“What we have now is what Robert Wilson originally envisioned” explains John. “It’s really white, really pure and really powerful and that’s because of the Martin MAC III Performance units we’re using. They’re really strong, really sharp. Those comprise the bulk of the plot. Back in 1992, it was more instrumentation but a warmer light because it was all incandescent. Now it’s predominantly arc lamp. It’s a whiter, dreamier light. We keep in one spectrum of colour, whitish-bluish, and we never go saturated. So the piece to me often feels black and white, though there are interjections of colour. It’s interesting to have this incredible gear but use it so minimally and precisely.”

The MAC IIIs are so integral to the artistic vision that

they’ve become an absolutely non-negotiable part of the rider. “The MACs are expensive to rent, but I’m trying to balance that” concedes John. “For the rest of the rig, I prefer Source Four, but I’m up for using whatever the house has. The cyc package we carry. That’s the dimmable fluorescents, two rows of ETC multipar strips, Iris 4s and Orions for the groundrow to keep the colour mix consistent in the cyc”

Preferred lighting control is from an ETC Eos, which hasn’t been available in all the stops. “In Mexico City we had to bring it from Dallas, in Hong Kong we brought it from LA” explains John. Having already toured London, Hong Kong, Mexico City, New York, San Francisco and Amsterdam, and with Los Angeles scheduled for October and Paris in January, what have been the challenges with consistently lighting such an epic work? “Robert Wilson’s demands on the follow spots are challenging. It’s hard to get it precise. Intensities are hard to get consistent, performer placement varies, and in some cities, there can be a language barrier.”



*Lighting operator  
Paul Frydrychowski*





To this end, the show travels with two dedicated follow spot operators supplemented by two locals. Even after so long with the work, John is still surprised by it; “There are subtleties I’m still picking up on, particularly in the physicality of what’s happening on stage”

### The speed of light squared

Associate director Ann-Christin Rommen is tasked with realising Robert Wilson’s vision in his absence. “Light is the most important element for Robert Wilson” she explained “It’s like an actor. He uses it like a character.” With light such an integral part of the work, how has technological change affected the show artistically? “Having worked on the first revival in 1984 I can see the difference between then and now. It almost feels like an HD version. The glow is much stronger and much more defined.”

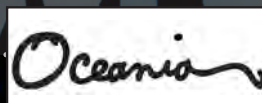
The impact of moving lights hasn’t just been one of practical convenience for the LD. “We have much more

freedom and time” continued Ann-Christin. “The invention of moving lights has changed Robert’s artistic possibilities so much. Before, you had to focus one light on one specific moment, and it would eat up space in the grid, and you either had to reuse it or have the luxury of using it just once. But now, you can move so easily and light so many different moments. You can use moving lights almost as follow spots.” After 4 ½ hours of elastic time made of white light, mathematical equations and abstract poetry, the opera ends in front of a downstage curtain with a poem about lovers, two actors on a bench and a bus. You no longer know where you are or how long you’ve been there. The curtain is then raised for the actors, dancers, singers and musicians to take a bow. Last then, comes the crew, maybe in the only curtain call they’ve ever been allowed to take. The crowd are ecstatic, and the applause is the loudest for them.

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Head of Production, Arts Centre Melbourne.***

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EDITED BY JASON ALLEN

### ADJ's Portable Mega TRI38 Sys with Wireless Foot Control



DJs and mobile entertainers can “pedal” bright LED colour washes at their gigs with the new Mega TRI38 Sys from ADJ. An all-in-one portable RGB LED wash system, the Mega TRI38 Sys features a wireless battery-powered foot controller that gives you command over functions like Black Out, Sound Activation, Programs and Colour from distances up to 19M – all with a tap of the toe!

Designed for easy setup and transport, it's a complete system that contains everything needed to generate bright, smoothly-blended RGB colour washes, all in one convenient, budget-friendly package.

Included with the Mega TRI38 Sys are 4 x par-style LED wash fixtures, 1 x battery-powered foot controller, 1 x tripod lighting stand, 1 x stand bag and 1 x soft case for the lighting system.

The main attraction of the Mega TRI38 Sys are the lights themselves. Each of the 4 par-style fixtures is powered by 3 x 3-watt Tri-Colour (red, green, blue) LEDs, providing smooth, shadow-free colour mixing and impressively bright, vibrant washes.

In addition to the wireless foot controller, the Mega TRI38 Sys can be programmed and operated by a DMX-512 controller via its XLR In/Outs. In total there are 6 operating modes: Static Colour, Manual Dimmer Colour, Built-In Programs, Auto Run and DMX-512 (6, 12 and 15-channel modes). As another convenience, the Mega TRI38 Sys can be operated with the optional ADJ LD RC wireless remote control, sold separately.

### Behringer X32 COMPACT Digital Live/Recording Mixer

Behringer has introduced the X32 COMPACT 40-input digital mixer. It's feature set, host of connectivity options and compact footprint are sure to appeal to audio professionals in need of live mixing and recording capabilities in a small space, on a budget.

The X32 COMPACT's local connectivity includes 16 XLR inputs, 8 XLR outs, 6 Aux I/O and expands to its full 40-input, 25-bus capacity when used with Behringer's optional S16 Digital Stage Box. The mixer also features an ULTRANET port for sending 16 channels of audio via Cat 5e cable to Behringer's optional P16 Personal Monitoring System.

The X32 COMPACT removes the need for outboard gear with an 8-slot, stereo FX engine. It also entitles the registered owner to a free copy of Tracktion 4 audio production software to take advantage of the included 32 x 32 channel USB 2.0 recording interface.

Additionally, the onboard 2-track USB recorder can record any two channels of audio assigned to it in the routing menu.



## Martin Jem Ready 365 Hazer



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**Martin's new Jem Ready 365** is a revolutionary CO2 hazer that produces outstanding fine-particulate atmospheric effects for larger venues. Using an advanced water-based fluid that gives a comparable performance to oil, this premium hazer produces the ultimate transparent haze.

The Jem Ready 365 Hazer houses advanced technology like automatic shutdown with battery backup to prevent clogging and OFG (Out of Gas) technology that allows the Ready 365 to produce limited haze even after gas pressure loss, giving the user time to change the gas cylinder. It also sips small amounts of fluid and leaves no residue with no smell.

The easy-to-use plug and play system requires minimal set up time. Coupled with a list of innovative features and nearly silent in operation, the Jem Ready 365 is the ideal hazer for shows, events, TV studios, theatres, clubs, cruise ships, theme parks and much more.

## Neutrik XIRIUM wireless audio network

Neutrik has released the ground breaking XIRIUM wireless audio network. The system can transmit and receive up to 8 channels of uncompressed 48kHz 24 bit audio over the 5 GHz band with a latency of 3mS.

The product group is made up of a base station, portable transmitter unit and portable receiver unit. The TX and RX units have a single XLR or balanced TRS in or out, and each base station 4 pair of in/out. The systems stated range is given as 30 metres line of sight and up to 300 metres point to point, with longer ranges depending on obstacles, reflections and the RF environment.

With many manufacturers currently developing WiFi audio products, Neutrik have gained the strategic "first to market" position with a product that can connect any brand of audio equipment. This looks like the beginning of a revolution.



XIRIUM Product Overview

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## Sennheiser wireless systems for 1800MHz

In response to the decision to close UHF frequencies from 694 to 820 MHz for wireless microphones, **Sennheiser is launching nine wireless microphone systems that transmit on 1800 MHz.** The new evolution wireless ew 100 G3-1G8 series operates in a higher frequency band that has been allocated exclusively to wireless audio transmission right across Australia.

"With our new 1800 MHz systems, we are presenting extremely user-friendly solutions," explained James Waldron, Product Manager Professional Wireless Microphones at Syntec. "The frequency band from 1790 MHz to 1800 MHz is reserved exclusively for audio transmission, which means that users no longer have to plan their systems around primary users or search for gaps between TV channels. This spectrum is completely free of other users. In addition, the band is available right



**EW 100 G3-1G8**

across Australia, so users can travel anywhere confident that their system will operate without interference.

The ew 100 G3-1G8 series features up to twelve channels in each of the 20 pre-set frequency banks, while up to 22 channels can be operated simultaneously in one location. The system also features a User Bank that is freely programmable in 10-kHz steps. The new systems have an RF transmission power of 10 mW and their advanced design ensures that their range corresponds approximately to that of UHF systems with the same RF transmission power.

## QSC PLD/CXD power amplifiers

**QSC have launched the PLD/CXD power amplifier platform.** The launch includes two ranges each with three amplifiers and offering different feature sets with PLD targeted at concert production and live sound reinforcement and CXD for installed sound.

The new ranges introduce QSC's Flexible Amplifier Summing Technology (FAST) which enables these units to be configured as 4 channel, 3 channel, 2 channel or as a single massive mono channel with the largest models delivering up to 5,000 watts.

Housed in a 2RU chassis, PLD/CXD amplifiers use proprietary class-D power devices with on-board DSP for every channel and a preset wizard to streamline setup and configuration. The DSP includes cross-over filters, parametric EQ, alignment delay and other dynamics

*The PLD range is expected in Australia in August and CXD a month later. Retail prices will be PLD4.2 \$3,295, PLD4.3 \$4,295, PLD4.5 \$5,295, CXD \$3,495, CXD4.3 \$4,495 and CXD4.5 \$5,495.*



processing and when paired with QSC loudspeakers, Intrinsic Correction can be employed to ensure optimum sonic performance. The integration of DSP with amplification provides a higher level of amplifier control enabling dynamics processing and protection circuitry to be far more accurate and effective.

Power ratings of the three amplifiers range from PLD/CXD4.2 4 x 400w/ch @ 8ohms and 1 x 1,600w @ 8ohm, to PLD/CXD4.5 4 x 1,150w/ch @ 8ohms and 1 x 4,250w @ 8ohm.

## Radial Engineering ProMS2 Mic Splitter

The Radial ProMS2 is a passive single channel mic splitter designed for PA, recording and broadcast applications. The engine inside is an Eclipse ET-MS10 transformer that is exceptionally linear from 20Hz to 20kHz while exhibiting less than 0.01% distortion at 20Hz. The Eclipse transformer is equipped with a mu-metal can that shields the sensitive circuit from outside electro-magnetic fields to ensure the signal is delivered without artefacts.



Features include microphone input with -30dB pad to enable extra high level sources to be used without saturating the transformer. There are three outputs: The first is a direct-coupled output that is normally connected to the main FOH PA system mixer and provides a return path for 48 volt phantom should a condenser mic or active DI box be in use. The second is a transformer isolated output that is particularly adept at eliminating the hum and buzz caused by ground loops. The third is a direct output with a ground lift switch. This auxiliary output can be used to feed the stage monitors, recording system or remote broadcast truck.

## Yamaha releases StageMix 4.0 iPad app for digital mixers

Yamaha Commercial Audio has announced the availability of StageMix 4.0 for Yamaha CL, M7CL, and LS9 digital mixing consoles. Updates available include new Dynamics Parameter Editing, Output Port Delay Editing, Output Port Levels (Gain/Attenuation), PEQ Copy and Paste, Phantom Power Switching, Mix Send Pre/Post Switching, HPF Slope Parameter (CL V1.5 only), Retina Display Support, and other enhancements.

The App also provides features like Mute Group Masters; Channel Naming; Channel Pan; Send Levels in Meter Bridge; Tap Tempo; Selectable Input and Output Meter Positions; and DCA Faders (CL and M7CL only).

Yamaha StageMix Version 4 is available from the Apple iTunes Store as a free upgrade.



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# THE WORLD BAR: FROM DESTRUCTION TO RESURRECTION IN FOUR WEEKS

The World Bar in NZ's outdoor capital Queenstown has been a mecca for travellers and adventurers since the mid 90s. When it burnt to the ground in a shocking fire on May 24, the community rallied together, relocated it to another building and had it up and pumping again by June 26, with just a nine day build time. How did they do it, and could it happen here? Jason Allen tells the whole amazing tale....

**Anyone who's worked in the hospitality industry in Australia would be more than familiar with the Olympic-level hoop-jumping involved in dealing with councils, liquor licensing, noise limits and all the other restrictions The Fun Police have put in place. So when I heard the incredible story of The World Bar, I found it hard to believe. It turns out it is not only true, but there are even more amazing details to the story than the simple fact of its happening at all.**

## Fire exit

First, the disaster. It's every business owner's nightmare – to watch everything you've built over almost 20 years destroyed in front of you. But that's exactly what happened to owner Steve "Wardy" Ward. The World Bar was a popular bar and live music venue situated on the second floor of its building, above a separate business, a pizza restaurant. The party town that is Queenstown embraced the venue, and it was a great place to take in a band, have a few drinks and do the whole après ski thing. Then, the deep fryer in the pizza restaurant downstairs caught fire. The restaurant staff tried to bring it under control, but it got totally out of hand and spread through the whole building with devastating effect. Luckily, no-one was hurt. The World Bar was not yet open and only the staff were on site. Everyone made it out and then had the terrible privilege of watching the whole thing go up in smoke.

Even as it burned, the World Bar team was planning how to get it back up and running. Marketing Manager Chris Barnhart recalls that "On Friday May 24 at 3PM, we were watching it burn. We were looking at new premises following Tuesday 28. We viewed 8 places. It took two weeks to finalise the new location. We started building June 12 and finished June 25. We opened 26 June"

## Compare and contrast

This is where the comparison between Queenstown and any major metropolitan area in Australia becomes stark. Just down the road was a building that housed a former nightclub that had been closed for noise violations. It was currently untenanted. Wardy approached the local council for permission to transfer The World Bar to the premises – liquor license, live music and all. They agreed almost immediately and bent over backwards to accommodate. "In terms of the council, a guy called Lee Webster went out of his way to help" said Wardy. "He spent some of his downtime pouring through legislation to see what could be done. To receive that kind of help from a council is amazing"

Both Sydney and Melbourne have recently gone through intense periods of soul-searching and community angst about their live music scenes. The terrible saga of Sydney's Annandale Hotel and its bellicose neighbours, not to mention the continuing struggles of pressure group SLAM (Save Live Australia's Music) even in relatively robust Melbourne, have highlighted just how hard it's getting to play live music to people while serving them a beer or two. New security staffing requirements almost shut down Melbourne's gigs two years ago before common sense prevailed and the powers that be realised that having an acoustic duo in the corner doesn't really make people want to punch on. So how have New Zealand got it so right?

BY JASON ALLEN



“I think it’s the nature of Queenstown and the nature of the Kiwis. They love to help out when you’re under pressure” mused Wardy. “Queenstown really gets under people’s skin. It becomes a significant part of your life. It’s just fun. Snow on the mountains in the winter, lakes, rivers and mountain biking in the summertime. Plus, there’s the nightlife.”

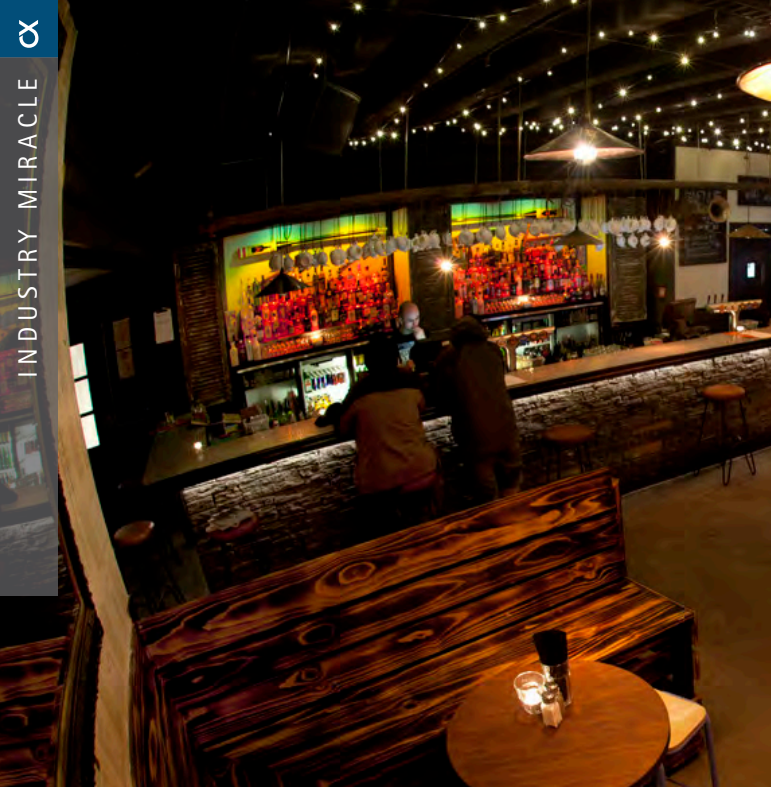
**Come Together**

But thoughtful administration, brisk efficiency and idyllic surroundings do not bring a bar back from the dead. The World Bar’s goodwill in the community was so great that people literally came out of (or maybe more accurately, in

to) the woodwork to help. A team of skilled tradies, techies and wildly enthusiastic amateurs all assembled to get the temporary new venue, now dubbed “The Find”, open and trading in the shortest possible time. This involved converting the existing infrastructure, lots of acoustic walls to address the existing noise issues with the penthouses above, new sound and lights and all the hospitality equipment and paraphernalia that make a bar more than just a place to have a drink.

“Over 18 years, you pick up some interesting contacts and characters, and there’s no shortage of those in New Zealand” related Wardy. “We made the calls and people went





through hell and high water to make things happen for us. We custom made our own stools. They were designed on a Thursday night and within a week, the wire benders in Invercargill had made stool bases and the team at Montreux Furniture turned around leather seat tops”

Favours were called in, but more surprisingly, people who had even only the most tenuous connections with the World team stepped up and offered to do amazing things. “There was this guy that did truck tarpaulins for trucking companies” explained Wardy. “We were after some of that style of canvas. He’d been in town on the day of the fire and seen it. He busted his gut for us. He had a sample to us in a day and then got the canvas turned around to us in a week. We’d never even spoken to this guy before. He just put his back into it and got it done.”

**Any old iron?**

To give the bar back its character, the World staff then embarked on a crazed scavenger hunt with the enthusiasm of drunken students on a dare. Bits of the old bar were salvaged, and the call went out across New Zealand for materials to grace the new venue. “To cover walls space quickly is quite tricky” Wardy continued. “We rang around the small theatres in New Zealand and asked if there were any old theatre curtains they didn’t need. We ended up with one set of beautifully made old curtains from the Dunedin Theatre that covered two walls in 10 minutes, for just \$100. I’d say they were probably worth about \$8,000”

As live music is vital to the venue, a new sound system had to be provided in short order. The World Bar has friends all over, and Dave Coxon of Sydney’s DJW Projects stepped up. Dave provided The World Bar’s original PA system, and leveraged his relationship with loudspeaker manufacturer EAW and distributor Production Audio Video Technology (PAVT) to deliver new gear in short order. Amazingly, Jeff Rocha at EAW turned around a custom order from its US factory and had it on a plane within 6 days. Dennis Wickstead at PAVT’s Auckland base had Powersoft amps and Symetrix processing in a truck and on its way to Queenstown immediately. That’s when the weather hit.

**The Perfect Storm**

Right at the worst possible moment, the South island was hit by the worst snowstorm they’d had in over 20 years. Eight metre drifts covered closed roads up and down the island, including the main pass into Queenstown. Trucks with PA, lights, furniture and fitments were stopped on route for almost three days. “Everything stopped” said Wardy. “A couple of staff volunteered to go to Dunedin to pick up some bits and pieces. They got diverted to Christchurch and caught in the storm. They tried to hack on through, but the police kept turning them back. They spent the night in a motel and got back the next day”

As the weather broke, the staff were working down to the wire. The team found themselves in the happy position of having to turn volunteers away as there were too many labourers working on top of each other. Painting and finishing touches were still going on at 3 AM the day before opening.

**If you build it...**

Chris Barnhart was there with the rest of the staff and workers right to the end. Come opening night, a huge sense of relief and achievement washed over the crew. “The tradies were right there opening night, next to us, having beers” said Chris “It was such a good feeling because they could look at a wall and say ‘I put that up’. One of the guys who works at the hostel part time worked on a corner for three days and that’s his corner now. We’ve all got these little sections that are personalised”



‘The Find’, as it’s now known, has been running for two months and the business has recovered beautifully. Gigs that were booked have been honoured, staff have been retained and plans are in place to move back in less than a year. “We’re holding the same events we were going to hold a month and a half ago, just in a new space” Chris continued. “I knew our staff were capable of doing extra, but it’s astounding how much the council helped us streamline the processes regarding our licensing. It speaks to the bonds that this establishment has been able to build with all levels of the community, including the council.”

### God Defend New Zealand

To this author, this speaks to the differences in culture between Australia and New Zealand. I’d noticed in my travels there, though dismissed the observation as personal and with no proof, that the Kiwis have a stronger sense of

community and are more supportive of one another. Some say, usually not kindly, that going to New Zealand is like going back in time 30 years. I think this is true in the best possible way, and the story of The World Bar proves it. This just wouldn’t have, couldn’t have happened in Australia. At least not in one of our cities or tourist towns. And that’s just sad.

Like all quixotic causes, this whole mad enterprise had a patron saint, the kind you’d invoke while trying to do the impossible on an untenable timeframe and asking people to donate everything from time to furniture – the inimitable Bill Murray. “What would Bill do?” was the project’s mantra. The great man now has his own shrine at The Find; a reminder that the ridiculous can be accomplished when you remind yourself that you have nothing to lose, and you have the faith to put your trust in the kindness of strangers.

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# THE MILL REPORT

## Lok me up and throw away the key!



Sometimes technology just gets the better of you, and always when it's least convenient.

Well, today I was locked out of the studio... again! Very frustrating. Another day's income lost, another stress line added. Why was I locked out, you ask?

Was it because I couldn't find the studio keys?

No.

Was there a natural disaster that prevented me walking 25 yards up the garden path to the studio?

No.

Was the console malfunctioning for some reason, or the outboard gear playing up?

No.

Was there power in the studio?

Yep.

Were there solar flares?

Maybe, but that didn't stop me working, I don't think.

What stopped me was my iLok... again! Today this piece of technological faecal matter decided that some of my main plug-ins didn't exist, or more specifically, that they existed but that I had no right to use them.

All the plug-ins were in their rightful places, the authorisations current, but no dice... they just offered up the same infuriating "authorize or quit" option. Needless to say my blood boiled.

I contacted the plug-in manufacturer immediately but that didn't help much. Even though they did get back to me within a few hours, when the problem persisted all day it was unreasonable of me to expect them to be up 'til 3am (US time) just so I could sort out my iLok problems back here in Australia. In the end the company did their best; but as of this moment the software still doesn't work, and I'm expecting an email...

I've been through this issue more times than I care to count – as many of us have. On one particular occasion, I'll admit, it was me who caused the problem – by letting an authorisation slide and then requiring its immediate reinstatement... which didn't happen fast enough. On another other more infamous occasion I was given the *wrong* authorisation by a DAW manufacturer, which then proceeded to blame me and/or my computer for two weeks before discovering its error. In that fortnight I spent over four grand on two different computers in an attempt to solve the problem! Turns out I'd just been given the wrong car keys.

But who's to blame isn't the point here. It's the fact that the iLok authorization process causes so much grief in the pro audio community in the first place that addles my brain. The number of productive hours lost is incalculable; let alone the angst. Each and every time it happens I'm reminded how utterly idiotic the whole iLok debacle really is. Relying on a third-rate, third-party hardware device to run programs that in many cases *already* interface with proprietary hardware is just plain outrageous. ILoks protect the manufacturers...

BY ANDY STEWART



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meanwhile users are made to wear the inconvenience: "Yeah, sorry mate, the key for your new car is made by another company... you'll have to talk to them: setup an account with them via their website, pay for 'zero downtime', regularly update your key online (assuming you have internet access where you're working) and wrestle with their new license manager software that's so wide open to interpretation you could drive the **CX Roadshow** truck through it.

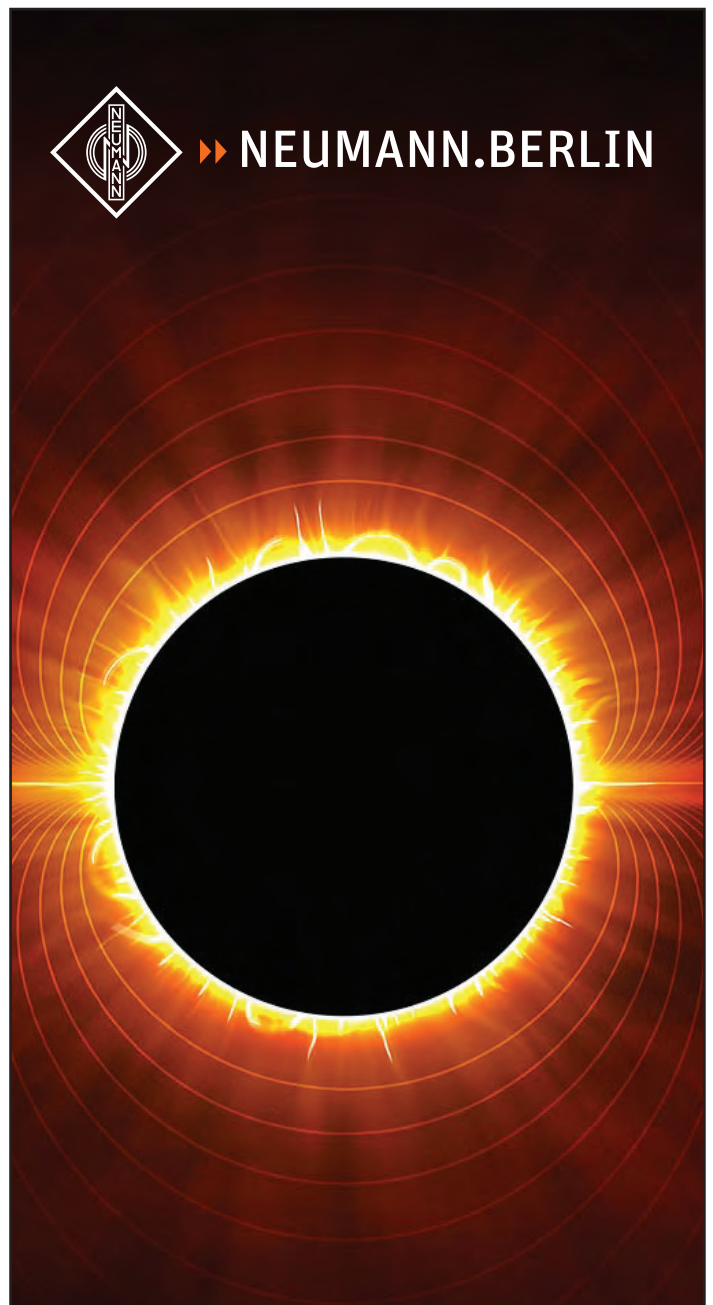
The sooner we're past this era where honest users are beholden to crap technology that wastes everyone's precious time the better. If I could take my iLok out and shoot it, I would.

## OVERDUB BOOTH CONSTRUCTION

Meanwhile, down here at The Mill work has begun on an overdub booth that some of you might have heard me mention in last month's CX. The reason I'm talking about it again is because I figure some of you might be interested in some of the reasoning behind the design. The size of the booth has mostly been determined by the space around it, which is fairly limited it must be said. Suffice it to say this one is going to use up every available inch. The height has been the main concern – 2.3 metres is pretty low; not much higher than the roof of my sauna! Unfortunately there's nothing much that can be done about it, so the trick has been to design the floating floor without the need for structural timber that would otherwise reduce this precious height. Fortunately the floor upon which the overdub booth 'floats' is solid concrete, so there's no need for joists.

The floating floor will simply consist of two layers of Yellow Tongue flooring laid over polyurethane pucks and a layer of Tontine. On that will sit 6 x 2 timber framed walls, lined on the inside with more Yellow Tongue, 13mm high-density plaster and an assortment of internal acoustic treatments. I'll be using Green Glue between the plaster and the Yellow Tongue instead of conventional adhesive to help reduce the internal resonances, as I've done on every wall of The Mill thus far, to great effect. (The Green Glue acts as a giant elastic membrane that fights against a wall's natural tendency to flex, and in doing so converts some of the sound energy into heat, rather than room corrupting sound waves.) The walls will be (almost) filled with 3.5R rated Rockwool batts, a small air cavity and builder's paper. The outsides of the wall structure will get mostly the same treatment, along with an external cinder block wall on the side facing the studio's main entrance. This will have no structural connection to the booth itself, and help increase the acoustic isolation of the room even further.

The overdub booth will be just large enough to accommodate a mic'd up drum kit... so, a bit bigger than the traditional 'vocal booth', but not by much.



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# THE MILL REPORT... continued

It's still unclear whether there will be two huge floor-standing panes of double glazed glass between the main mixing space and the booth, or a more modest, waist high window – also made up of two double-glazed fixed windows. I have the glass here already for both options so the decision is really only about two things: aesthetics and sonics, both inside the booth, and next door in the control room. The decision doesn't need to be made immediately so needless to say I'm procrastinating...

## REFUGE OR FISHBOWL?

The aesthetic appeal of floor-to-ceiling panes between the booth and the studio is compelling – they'd look pretty cool, albeit a bit '80s – although I know some people find lots of glass in a booth a little bit exposing. There are those for whom an overdub booth is a tranquil refuge, from everyone and everything... even the engineer in some cases. The 'safe haven' overdub booth tends to be smaller, deader and darker, with only a relatively small viewing window back into the control room. The big glass alternative may also generate too much acoustic reflection I suspect, both internally, as well as out in the control room where there's currently a large rear-wall diffuser. Replacing the diffuser with a huge slab of glass doesn't thrill me much I've got to say. Perhaps as I write this I'm beginning to convince myself of the smaller window option.

The new booth is positioned directly behind the mixing console, at the back of the room, so when I'm at the Neve I'll have my back to the person performing in the booth. This isn't ideal, but I don't really have much choice. I could turn the whole studio around 180° perhaps, but at this stage there seem to be too many reasons why that remains a bad idea.

Hopefully by the next Issue of **CX** the booth will be up and running.

Have pipe, will dream.

## TOOLBOX review

Neumann KH 310 Active Studio Monitors

I've had a pair of these new Neumann monitors here at The Mill for a few weeks now, mainly to see how they fly on my Neve console. Why? Mainly because the Neve sports a relatively high meter bridge, which can cause some vertically arranged speakers to either fire over my head, or require downward adjustment, which I'm no big fan of because that tends to make speakers less stable than they already are.

ANDY STEWART RUNS THE MILL IN VICTORIA. HE'S ALWAYS HAPPY TO ANSWER QUESTIONS ABOUT RECORDING, MIXING OR MASTERING. CONTACT HIM HERE: [ANDY@THEMILL.NET.AU](mailto:ANDY@THEMILL.NET.AU)

The new Neumann KH 310s are a compact, three-way active horizontal design, that sit nice and low on my Neve – perfectly suited in fact to this circumstance, which is a common problem in control rooms featuring big consoles.

The 310s feature a 210mm (8¼-inch) bass driver, a magnificent 75mm (3-inch) soft-dome midrange driver and a 25mm (1-inch) tweeter. The front on the speaker sees all three elements (plus a illuminated Neumann badge) occupying a relatively small area. The tweeter and midrange driver are mounted into waveguides to widen the sweet spot and overall the physical package of the KH 310 is relatively unobtrusive and modest in its design. I've long since given up offering opinions about how speakers look: one man's masterpiece is another's crow bait. In my experience you just get used to whatever's in front of you regardless. Personally I think they look really classy, although I'm not a great fan of illuminated logos, but thankfully the ones on the 310s can be dimmed or switched off.

Sonically the Neumanns are balanced and clear sounding, with the dedicated midrange driver providing the added benefit of a more effortless focus in the middle of the spectrum. The detail across left and right is impressive; the speakers sensitive to, and expressive of, panning adjustments. They go loud yet hold together well, and at low levels their tone remains consistent. If I could put them into context: the Neumanns are a little smoother and more pronounced in the low midrange than Quested VS2108As, offering slightly less upper mids. They go respectably low in their bass response without sounding like try-hards, but pack less of a wallop than Event Opals. They're far less harsh and brutal sounding (unsurprisingly) than a Yamaha NS10m, but still manage to keep vocals fairly prominent.

Like any good speaker, the key ingredient – apart from good fundamental specs, noise floors, reliability and control – is that you like them. There's no point trying to make an NS10 sound like an Event Opal after all. Otherwise you can be sure your mixes will translate into the real world like a bag of rotten grapefruit hitting a wall at high speed.

To that end, there's a hell of a lot to like about the Neumann three-ways. They're also very forgiving of position like so many speakers nowadays. On the back panel there are several switches to adjust the intensity of any of the three drivers, depending on how you need to position them in the room. There's an earth lift switch, an input gain attenuator and output switch, along with the aforementioned dim switch.

The only issue with the 310s is that they don't come cheap. No siree... at what I assume will be a four-figure street price starting with a 5, they'd want to be good... which they most certainly are.



Price: \$2899 each.

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International Standard BS EN 13200-3:2005 (Spectator Facilities) Annex A  
WA Health Directorate 2004 (Guidelines for concerts, events and organised gatherings)  
Crowd Control At Venues And Events. A practical Occupational Health and Safety Guide, WorkSafe (Vic) September 2006  
Australian standard AS/NZS 1170 parts 0.1 and 2:2002 (AKA loading codes)  
Australian standard AS/NZS 1664: 1: 1997 (Aluminium structures)  
Australian Standard AS 4687-2007 (temporary fencing and hoardings)  
MCK Metals Pacific. Strength and resistance load testing, November 2006  
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# A GAME CHANGER AT THE ANZ STADIUM

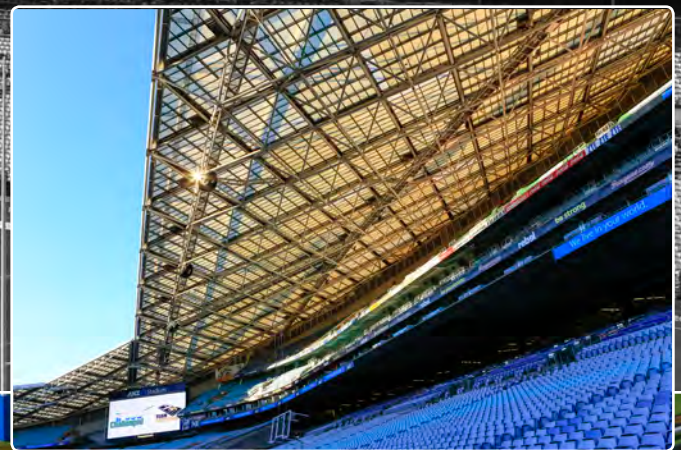


**JUNE FIFTH 2013 SAW NEW SOUTH WALES BREAK A SEVEN YEAR DROUGHT AND BEAT QUEENSLAND IN THE OPENING GAME OF THE ANNUAL STATE OF ORIGIN COMPETITION AT SYDNEY'S ANZ STADIUM. THE GAME WAS SIGNIFICANT FOR OTHER REASONS, NOT LEAST IT HERALDED A NEW ERA IN STADIUM AUDIO. IN THE SPORTING ARENA FORTUNE FAVOURS THE BRAVE, ATHLETES SEEK TO FIND COMPETITIVE ADVANTAGE BY SPOTTING AN OPPORTUNITY AND EXPLOITING IT. IT IS JUST SUCH AN ACT THAT HAS SEEN ANZ STADIUM SEEK TO GAIN COMPETITIVE ADVANTAGE OVER THE MANY SPORTING ARENAS IN AND AROUND SYDNEY. BUT, AS WHEN MITCHELL PEARCE MAKES A PROBING KICK THROUGH THE ADVANCING TANKS OF THE QUEENSLAND FORWARDS, ANZ'S STRATEGY ON ITS AUDIO SYSTEM WAS A CALCULATED RISK BASED ON CLEAR TACTICAL THINKING. SIMON DAVIES, GENERAL MANAGER OF ANZ STADIUM EXPLAINED.**

“We took an active decision to up the stakes, to make our venue a much more exciting venue in which to enjoy the great sporting events we stage. To do that we had to break a few rules; people have avoided putting high performance audio into stadiums for a number of reasons, not least cost. Could we achieve a better experience for our customers? That’s the big question.”

“In the ten years since 2003 when the ANZ stadium was reconfigured from its original hundred and ten thousand capacity for the Olympics to an eighty thousand sports venue it has experienced a significant increase in the presentation of sport generally. We regularly host five different sporting codes. That change has been coupled with greater emphasis on enhancing the events, a big investment in two large LED screens, the largest in Australia at the time; more music for emotional content, more information via the PA and screens, better catering and improved quality of beverages. In the old days visual information was just scoreboards, now its LED screens with all the potential that brings. When we came to consider replacing the PA we wanted to apply the same thinking to sound as we did to visual information; what are the current requirements; how can we improve on that; and how can current technology future proof our investment?”

BY STEVE MOLES  
PHOTOGRAPHY BY SCOTT WILLSALLEN



We engaged Scott Willsallen from Auditoria Pty Ltd as consultant; more than many individuals Scott's experience is closer to the event based side of sporting presentation. Having been responsible for PA design for the opening and closing ceremony of the Olympics, the Commonwealth and the Asian games, he has that understanding of using stadium audio to enhance the visitor experience; to use it as a dramatic tool. That's exactly the level of excitement we wanted for our stadium so we made the decision to raise the bar, to properly address major sporting events, to evoke more interest, and provide more enjoyment."

## THE TASK

Aspirations are one thing, realisation quite another, as Willsallen explained. "The main confine of this brief was the use of pre-existing rigging points and all cable infrastructure from the old PA system. While that can be restrictive in one sense, it does mean that money saved on cabling and rigging, a not insignificant figure when considering a large eighty thousand seat stadium; that part of the budget can be applied to buying a better loudspeaker system." Willsallen is clear and purposeful in everything he says, it's not hard to imagine him engaging with world class events. He's also brisk and business like, nothing he says or does is gratuitous.

The system ANZ Stadium eventually settled on comes from the German manufacturer d&b audiotechnik. Based upon their latest medium format line array system, the Vi-Series installation variant of the V-Series with a full complement of Vi-SUBs, it also features T and Q-Series elements in subsidiary roles. The system was supplied by distributor National Audio Systems (NAS) and installed by PA People, a well-known Australian systems integrator. "But to arrive at that decision Scott developed an unbelievably thorough bid process," said Davies. "So thorough in fact that ANZ Stadium was able to give consideration to arguably every quality audio manufacturer in the world." Stefan Goertz from d&b audiotechnik who developed the initial d&b proposal agreed. "I had never seen such a comprehensive and balanced bid package before. In the initial stages there were four pages of voting criteria where he had evaluated everything from audio performance through to weather resistance. The ability of the manufacturer's to support their products within the country, was also a critical factor."

## BIDDING

"Before we engaged Scott as consultant we looked at other venues to set ourselves bench marks", continued Davies. "We wanted a PA that could deliver messages in coherent



and a half hours including laying in turf over the tracks.” He brings the same accuracy to his assessment of the task and doesn’t defer to his consultant, taking an active role in the judging process, as we shall see.

“Scott has been advising here for a while now, since before we embarked on this project, so he knew the acoustical 3D space intimately. We impressed on him the need for the system renewal to achieve best value for money; that he has done.”

Willsallen’s approach to the bid was clear, “Historically installers have forged relationships with particular loudspeaker brands, but it doesn’t follow that the best installer for your project will necessarily have a relationship with the best manufacturer for your project. By separating manufacturer from installer in the bid process we got the best installer and the best equipment.” Davies was aware of the precedent, “As Stadium managers we are all too familiar with that link; so when Scott first presented this separation, stadium MD Darryl Kerry questioned if it was sensible. It has certainly proved to be so.”

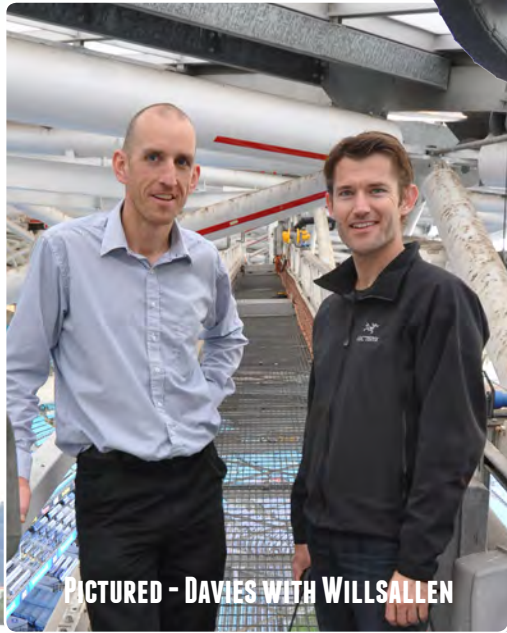
“My experience has tended to be with top tier product,” continued Willsallen. “We invited no less than eighteen manufacturers to submit designs. Representatives for all bidders were open for feedback, so we could comment on their proposals and they could respond to those comments. By doing that with all the bidders we produced a short list of designs. Because all manufactures were involved throughout the competitive bid stage, all design options have been considered. That’s better for the manufacturer, and still protects the final choice of product. Eighteen manufacturers was reduced through a number of empirical criteria to a short list of three for an in stadium shootout.”

“The shootout involved me and MD Daryl Kerry,” Davies continued. “We also invited maintenance and operational crew along. Initially Scott would listen but not comment, allowing us to form our own opinions. I would suggest my perceived differences, he would explain in technical terms why that might be so. As far as I was concerned the d&b system was the best choice. I’m no expert but the shootout process put this system head and shoulders above the existing system.”

and comfortable fashion; provide the kind of quality musical enhancements to which audiences are accustomed in more acoustically friendly venues; and to have a PA system that can deliver proper support to a touring concert show, so those acts that come through don’t have to spend seventy thousand dollars on delay systems for the side grandstands.” Davies is a tall engaging Brit; like Willsallen, he has a firm grip on his own brief. Ask him a simple question about the movable grandstands and facts tumble like confetti. “The seating sections hold seven thousand people, are a hundred metres long and retract twenty eight metres. Each weighs three thousand five hundred tons and is shifted by fourteen motors: at one metre per minute, both sides takes three



FROM LEFT - GOERTZ, WILLSALLEN & VAYLER



PICTURED - DAVIES WITH WILLSALLEN

**DESIGN**

“When I first looked at renewing the system Shane Bailey Director of National Audio Systems, the d&b distributor for Australia, suggested the new V-Series,” explained Willsallen. “From the point of view of stadium requirements the V-Series had several compelling features, not least the fact that it’s a fully passive box. Given the limited circuit count (just eight channels at each rigging point) that’s a huge advantage. It meant we could put in more boxes at each position. Most of the arrays are covering 130 degrees in the vertical plane so more cabinets is a real benefit; and the two models of loudspeaker Vi8 and Vi12, at 80 and 120 degree horizontal respectively, is also very useful. The cardioid V-SUB is also passive so were a single cabinet to fail there’s no loss of cardioid behaviour from the other subs. Just one circuit to drive two V-SUBs; there’s a certain elegance to that.”

The basic installation is comprised of multiple hangs of d&b V-Series line arrays, with a line of V-SUBs hung as a dipole two and a half metres apart, to each side of the main array SUB/TOP/SUB. “The pure dipole arrangement of the two Vi-SUB positions extends the Vi-TOP array’s constant pattern control towards lower frequencies via the crossover range between TOPs and SUBs, extending it down to the range exclusively delivered by the Vi-SUBs themselves.” Explained Goertz. “So in modelling the time alignment between SUBs and TOP cabinets we have an additional electrical parameter to fine adjust the overall low end dispersion. Thus we achieve a great advantage, extending the control pattern of the Vi loudspeakers far down below 200 Hz. The benefit is a big reduction in unwanted low end energy in the troublesome areas of the stadium, thus over all a much cleaner sound across a broader listening bandwidth. This is uniquely possible using passive cardioid subwoofers by design to create such an array setup.”



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## THE INSTALLER

The installation of the d&b system was carried out by The PA People, the project delivered by Brett Steele. “Each d&b array sits within a frame engineered by us. Like an inverted table with the legs attaching the frames to the catwalks beneath the roof, the d&b rigging frames are suspended within. The d&b system is very light for what it is, so loading limits relevant to the roof structure were well within tolerance. Although many frames have the same number of cabinets each frame tends to be different in the pan or curve of the array, fortunately we do all our engineering in house in our metal shop. The frames are raised and lowered for maintenance by two electric chain hoists supplied and installed by Jands Electronics. We were provided with centre of gravity information for each array by d&b, the need for a properly balanced load to facilitate ease of attachment to the catwalk is crucial so there was a lot of attention to detail”.

## NETWORKING

Ash Moors dealt with the networking infrastructure of the stadium for PA People. “We upgraded the pre-existing network renewing all the hardware except the optical fibre itself. The network handles all the audio signal traffic and control to the four amp rooms, split into several VLANs, d&b system control; Dante for audio signal. Although we have double the number of loudspeakers than were here before we have less amplifiers; the d&b system is very efficient in that respect. There are two Ethernet rings, Scott had us split them between signal and control, there is also a copper ring back up for signal, which means should we lose the signal data ring we still have control and can tell the amps to switch to the copper analog input.”

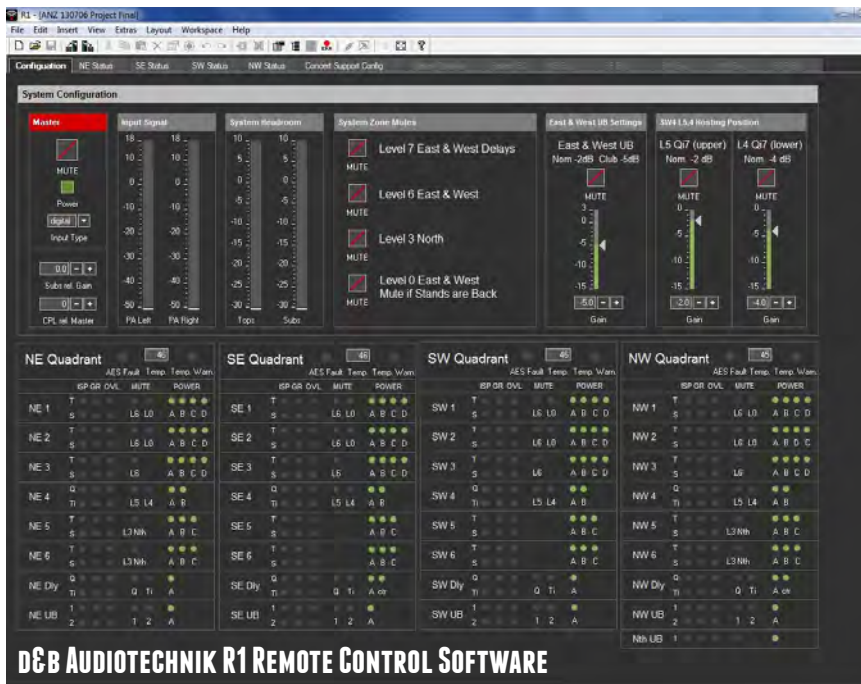
## SERVICE, TRAINING AND MAINTENANCE

As you might expect, Willsallen has written a comprehensive specification, “Including the maintenance contract within the installers bid is really best practise. Separating the two leaves the process open to unrealistic discounting on the install, in the expectation that bidders can recoup costs downstream on the maintenance. They also have a vested interest in doing a really first class job on the install to support their own maintenance programme.” The system is lowered, cleaned and serviced every six months, ANZ Stadium is home to a large number of birds and the special PVC environmental covers supplied by NAS quickly acquire a layer of guano.

“Training falls into three parts,” Willsallen continued. “The first is preparing the system for an event: Gates are usually at 5 pm, the crew call is seven hours before and there is a comprehensive check list to go through. The d&b R1 Remote control software provides most of the information; once Stefan and I completed optimisation of the system we ran a ‘system calibration’; this recorded all the impedance loads to the loudspeakers. The event crews use this for their test benchmark, but a listening test is always essential, and not just a quick pink noise thing. Operators implement the appropriate zone pre-set for which particular stadium configuration is being used and the anticipated grandstand use. They then walk the seating bowl and listen to each array.”

“In terms of designing for coverage, and considering the legacy of pre-determined rigging positions, the d&b ArrayCalc provided fantastic information,” continued Willsallen. “The geometry is very accurate, walk down a tribune and step over the fence onto the pitch and you’re immediately out of the sound field.” Not that this meant the final design was easy for him. “The corners around the LED screen positions are problematic, arrays 3, 4 and 5 straddle each corner, 3 and 5 comprise very long arrays giving coverage down to the front rows at the side and end. Array 4 is required to fill what is effectively a triangular section on the corner with its point touching the front row seats right where 3 and 5 meet. No loudspeaker projects such a pattern so it’s tricky to say the least. The number 4 array is composed of a Ti10 array and Qi7s; the complexity comes in achieving the proper time alignment to cover the area without compromise.”

“Away from the corners, the main arrays of Vi-Series in the north / south end zones take over all end grandstand coverage, consistent with the main east / west coverage. But as the end zone roof falls well short of the front rows, by as much as thirty metres, these arrays are practically horizontal in orientation though still highly curved. However, even at these distances we found that we only needed to apply about +3 dB to the cabinets covering the front rows compared with those covering the closer rear and middle seats.”



## D&B AUDIOTECHNIK R1 REMOTE CONTROL SOFTWARE

“The second part of training is dealing with equipment failure. Amplifier or loudspeaker failure, how to replace and patch round. There is a spare D12 amplifier in each of the amp’ rooms and we have special extension control (Ethernet) and NL4 loudspeaker cables so the replacement amplifier patches directly into the installation cable-loom of the system, removing the need to take out a screwdriver and pull amps in and out of the rack. That’s one of the great things about this installation compared to many, the d&b D12 amplifiers actually have connectors on the back, not hard wire terminals, so a quick CAN-Bus assignment on the replacement amplifier plus a quick cable extension, and you’re good to go. We also have replacements for all the loudspeaker types stored on site as part of the NAS supplier bid obligation.”

“Finally, it’s also necessary to give some training to all three groups of people who will interact with the system, the operators; the maintenance team; and in particular the users, the various team sports organisers that present in the stadium. Most of them have of course been presenting here at ANZ Stadium for many years, but none are aware of the new system’s amazing potential. We want every mix/operator who turns up here to be enthused by what they find. And we want them to buy into what’s possible; for them to feel involved and know they can get really great results, something that simply wasn’t available before, is most important.”

## CONCLUSION

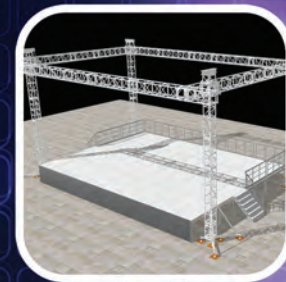
That process began on the 13th June with an open day at the stadium for just those people. “We stage forty to fifty events per year, at least six are full house, around thirty are audiences at about thirty five percent capacity, so all who came were very interested, “concluded Davies. “From our position we are giving the people who hire the venue a new set of tools; if what audiences hear is uncomfortable, then even if you have got everything else right, the food, the staff, the seating, the parking, the one thing they will remember after the event is bad sound. With the new system Scott has designed for us things like pre-match entertainment and half time shows can be absolutely first class, so the new d&b system is a powerful tool. Clear, loud, intelligible, quality sound; this is a real game changer.”

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# What-If?

## What if someone insists that your rope is too small?

**Ok, there are a few directions we could take this article with a title like that, but in the interests of good taste and decorum, we'll just mention that size really does matter, just once. There - we can move on now...**

To the point of the article, just recently, prior to installing some machines in venue "X", a well meaning and highly experienced rigger pointed out to us that said machines could not be used for an overhead lift, because they were designed to use 3mm steel wire rope.

"Why not?" we reasonably asked, and the answer was "because the law says that the minimum size of wire rope that can be used for lifting is 5mm"

Now, being a pedant (or so I'm regularly and unreasonably accused), my interest is always piqued when someone makes absolute and definitive statements like "the law says..." or "it is common knowledge..." so I made polite enquiries as to which particular "law" made this rather unusual blanket prohibition on well meaning (and apparently misguided) 3mm and 4mm steel wire ropes, which, in certain constructions, are unambiguously described as "Ropes, Steel Wire, For The Purposes Of Lifting".

It turns out that the "law" in question was the WorkCover Rigging Guide 1995 (ISBN 0 7310 5159 9). This particular publication (type "Workcover Rigging Guide" into your favourite search engine) is a particularly informative and practical reference document for riggers, and forms the basis of a program of certification for competency assessment for riggers. It is NOT however, a Standard or a Code of Practice and does not form the basis of any legislation relating to the design of the machinery that a rigger may come across in the course of a working day. It is not "the law" and has nothing to do with the design and certification of complex multi-rope hoisting machinery, so any reference pertaining to minimum rope size for "lifting" is advice for riggers, not rules for design engineers.

So what is the difference between the rules for designing hoists and the guidelines for rigging loads from these hoists?

When it comes to designing machines for hoisting loads, the designing and certifying engineer(s) are guided, in Australia, by many Standards to ensure that the machine is safe and fit for purpose, including (but not limited to):

- AS1418.1-2002, Cranes, Hoists and Winches
- AS3990-1993, Mechanical Equipment – Steelwork
- AS1403-2004, Design of Rotating Steel Shafts
- AS2550.1, Cranes, Hoists and Winches – Safe Use (General Requirements)
- AS2579-2004, Steel Wire Rope, Use, Operation and Maintenance

Let's assume that the hoists in question, using a number of 3mm ropes, had been design-reviewed by an appropriately qualified person, and this review concluded that these hoists complied with (for example) AS1418.1-2002.

It would then be appropriate for a qualified rigger to attach a load to one of these hoists, knowing that the hoist was well designed and safe to use, but this is also the point of demarcation between the work of the hoist design engineer and the rigger who is going to use the hoist to lift a load. The rigger attaching the load would be quite correct in invoking the WorkCover Rigging Guide 1995 and making certain that when attaching a load to the hoist's load attachment device (bar, hook etc) with a steel wire rope, it was a steel wire rope with a diameter of at least 5mm, but the size of the rope(s) used in the construction of the hoist has nothing to do with the rigging of the load from the hoist. Hopefully this will help to bust a bit of a Staging Myth.

This article forms general opinion only and must not be relied on without a detailed, professional risk assessment undertaken specific to your situation. Consult a professional staging company every time you consider anything that may involve risk with flown objects or people.

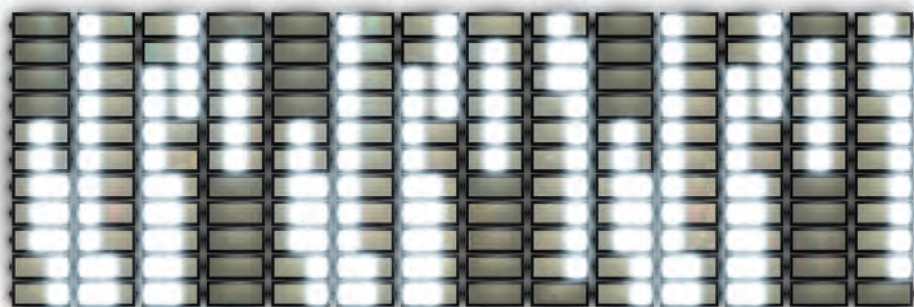
**JANDS**  
*Staging*

BY ANDREW MATHIESON



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# Victorian State Schools Spectacular

**THE VICTORIAN STATE SCHOOLS SPECTACULAR SHOWCASES PERFORMING ARTS FROM STATE SCHOOLS, AND IN RECENT YEARS HAS BECOME A TECHNICALLY VERY COMPLEX UNDERTAKING. VICTORIA'S STATE SCHOOLS SPECTACULAR IN JULY SURPASSED ANY OTHER INDOOR ENTERTAINMENT SHOW EVER HELD IN AUSTRALIA WHEN IT COMES TO THE SCALE OF THE LIGHTING SYSTEM AND DESIGN.**

You want BIG with that?

BY JULIUS GRAFTON  
PHOTOGRAPHY BY JEFF BUSBY



Luc Bohn & Adam Lowe -  
Yr 8 student from Camberwell High School  
worked across LX and IMAG

Because a large area of the venue floor is the stage, with mass dance and kids everywhere including a 1,000 voice choir, there is a lot to light. At Hisense Arena, all available mains power was allocated, resulting in 1,920 amps per leg feeding the lights and screens. A touring show is often happy with 400 amps per leg.

All over everywhere were 658 automated fixtures – movers of all kinds. An insane 47 universes of DMX did the control, and those did not include pixel mapping to display surfaces, of which there were more than a few.

Lighting was designed by Paul Jackson, assisted by Associate LD and Programmer Robert Cuddon, and Media

programmer Matthew Bush. PRG won the tender for lights and screens, and appointed CVP as a contractor for overhead projection.

Creative Producer Adam Lowe explained the narrative of the show this year was based on the concept of Home. “The crux of the story is the idea of exploring the concept of home – whether bricks and mortar, people or place”.

“We contracted Electric Canvas (Sydney) and Peter Milne created motion video, for example drawing an architect’s blueprint, which turns into an interior of a home as it is built”.

# PERFECT MATCH

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Robert Cuddon in control world

Much of the other media content came from the PRG MBox media library, from which Matt Bush adapted content for the LED panels and screens.

**ONE DAY SHOW, BIG SETUP**

For Robert Cuddon this was his third year in a row as associate designer and programmer for the Spectacular. “It’s

scaled up each time. You could think of it as a strange gig, but it’s structured like a normal show.”

The crew moved into Hisense Arena eight days before the show. They marked up the floor on Friday morning, and were set up and ready for cast on stage Monday morning. The show requires principal cast on stage Monday, and then by Wednesday everyone else has joined in.



Adam Lowe with Harrison Craig - Winner of The Voice Australia 2013





A full rehearsal with the choir of 1,000 is held over Friday, ahead of the two shows on Saturday and a hectic loadout on Sunday.

Robert says the PRG consoles make a massive difference in managing such an enormous set of assets. There were five consoles used, a V676 and V476 for the programmer, and the same again for the media programmer. One V276

console was in use so the LD could see the channels cue.

“The desk does smart groups very well, I can create selection groups, grab all the lamps, spots and washes on truss one for example. I can manage the show file and the layout with magic sheets so it’s all in there and accurate”.

But it was the focus session that really brought the consoles ability to the forefront. “The PRG desk has a

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**...THE PROCESS HERE IS TO GET TO UP TO 40 SECONDARY STUDENTS ON THE CREW. WE'VE BEEN SUPPORTED THE ENTIRE WAY BY THE DEPARTMENT OF EDUCATION AND EARLY CHILDHOOD DEVELOPMENT, WITH SCHOOL PRINCIPALS AND PARENTS EQUALLY BEHIND IT.**



Visualiser built in, a 3d drawing on which I can select lights and point to where I want them - and it does the focus 'en-masse' for you." This meant focussing 658 fixtures in just two and a half hours.

The factory prep for the show was aided by a team of interns from some state schools. In the world of lighting, prep is enormously time consuming. While some audio systems are packaged, lighting is difficult to arrange into bundles. Every case needs to have been checked, DMX addresses on lights set, lamps checked, hooks provisioned. Then cable and looms sourced and packed, cases labelled. Metalwork, truss, bolts and 1,001 detail items loaded and labelled.

## SCHOOL KIDS DOING PREP

Having school kids help out would normally be an anathema for any production crew, but this gig comes with a requirement in the tender to do just that.

Adam Lowe says that he has pushed the internships along as the show is a showcase for talent, and there are always kids who want to work behind the scenes.

"I was a student who played in a school band but my career started behind the scenes pushing scenery and equipment around. I want to find the kids who are doing it already."

So they do, with over 30 kids involved backstage in all kinds of roles. From all reports, the various production vendors (Norwest, Showtech Australia, Riedel Communications, PRG and CVP) have embraced the idea, and not just because they have to!

"Working behind the scenes, you see faces beaming with sheer joy, they can do something they really love and do at this scale", says Adam.

"There's always been tertiary level interest from students at VCA, QUT and NIDA all wanting secondments".

"But the process here is to get to up to 40 secondary students on the crew. We've been supported the entire way by the Department of Education and Early Childhood Development, with school principals and parents equally behind it. It shows students who are in the process of trying to figure out where to study, that there are careers in our industry that are legitimate with long term prospects. The students benefit."

Adam involves students early in the planning. "For example, the 'requests for tender' are partly written by students in business studies, and they can see the organisational structure of a large event. They can learn about scripting, the technical requirements breakdown - it's not just about plugging in Power Lock connectors and dmx!"

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 6 X SHOWTECH CREW  
 4 X CVP CREW

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# LISTEN HERE

## A MIX TOO FAR

There are times when a mix needs more work; when what you thought was a five-hour job turns into a four-day marathon. There are also mixes that should have been signed off on yesterday... aren't there? So how can you tell which ones need more work and which ones needed less?

BY ANDY STEWART

**A few issues ago I talked about work ethic being one of the cornerstones of good mix outcomes. It's true of course; I've never really known a mix of my own that suffered because I took things too far. All of my best mixes have been the result of hard work and determination. Conversely, the mixes I *haven't* liked were generally the ones that were wrapped up prematurely, before the fine detail, or in some cases the basic levels, were properly resolved. The same can be said of other people's mixes. Where I've collaborated with others in some way, all the good mixes were worked through until everyone was happy; the ones I haven't liked weren't pushed far enough.**

As a mix engineer who's been at this game a while now, these days I'm supremely confident about finishing a mix to everyone's satisfaction. But I certainly didn't start out that way. Confidence has only come with experience and I've worked hard to reach the point where I'm able to make such bold statements.

In the early days of my career, however, internally at least, I was a bit of a nervous wreck at the console, concerned as much about the public nature of the process (mixing in front of people was stressful) as I was about the sounds coming out of the speakers. The complexities of developing sonic ideas on the spot while simultaneously conversing with five band members, making them all cups of tea and cleaning up after them, was exhausting. I felt like a circus juggler. But the threat of public humiliation is a great motivator, and the pressure it applies is ultimately a healthy one.

### OVERCOOKED EH?

Most often, mixes that go 'too far' are often thus described simply because they haven't worked out. Personally I think there's no such thing as a mix that's taken too far, only mixes that don't hit the mark for whatever reason – in short, that haven't gone far enough.

For engineers or musicians delving into mixing for the first time, it's often very hard to know when a mix is finished, given all the options there are nowadays for adding yet another compressor, yet another EQ. Frankly, the digital domain is a bottomless pit, so don't expect the computer to ever help you decide. Provided it's a half decent setup, your DAW will always be happy to provide you with yet another plug-in, for good or ill.

Mixes that you and your clients love unreservedly are finished mixes. Everything else is a work in progress. If you can't get through a song you're mixing without thinking: "Gee I must remember to turn that guitar down there," or "wow, that backing vocal is low... that's got to come up," the mix obviously isn't finished. A finished mix should pose no questions; trigger no thought process. You should be able to play it from beginning to end and do nothing but revel in its perfection! Of course, months later there will always be something you wished you'd addressed... but that's mixing for you.

### TOO FAR, OR INCOMPLETE?

So, why do people sometimes say a mix has been taken 'too far'? Is it because they think there's too much reverb, too much compression on things or too much automation that's detracting from the song? Do they think there was a line that got crossed, beyond which all the hard work only took them further away from the ideal outcome? Well, they might, but I'd refute their claim. There is no line, and nothing is ever taken 'too far', and the reason is simple: mixes aren't linear.

Mixing is an artform, and there's no such thing as an artform where the journey is predictable, always methodical, and guaranteed of an outcome. It's not like car manufacturing, where everyone knows their job backwards,

there's an assembly line, a pile of identical parts and a known outcome. Even in that circumstance there are no guarantees things will always work out! So how can anyone ever say that a bespoke, custom process like mixing can always reach a satisfactory outcome before 4pm, or within the confines of a six-hour shift? You can't.

If you think mixes always develop in a linear fashion; that there's no back-tracking or journeys into the unknown along the way, you're dreaming. In reality, things go wrong, ideas fail, methods prove inappropriate, and predictions prove false. That's why mixing requires a strong work ethic, to get you through the doldrums and back up off the canvas when all seems hopeless. Humility and openness to the process are key here. Being strong enough to admit that something isn't working – even when it's your work – is vital to progressing the mix and bringing it closer to completion. If you're stiff and resistant to change, or in denial about the things that aren't sitting right – things that you yourself loved two hours (or two days) ago – you're rarely going to produce a great result.

## ALL IS PROGRESS

Think of it like this: when you make a decision about a mix and apply the necessary changes – that's progress. It may not always get you to your destination in one step, and the changes you've made may generate the need for 10 others, but that's mixing. Your decision may have caused certain things to unravel completely, in fact – maybe the guitars suck now, or the vocal is too low, who knows – but that's mixing. Don't think that by applying five plug-ins to a sound and making it worse, that you've somehow bungled things. Everyone makes mistakes – I make them every day. When you take all five of these plug-ins away again and realise that the instrument sounds better on its own, that's progress, even if it did take a journey of discovery to arrive at your conclusion.

When you're mixing, don't beat yourself up about things that apparently wasted time, or things that supposedly

failed. That's a defeatist's mentality. If something sounds bad, ditch it, no matter how much time you spent on it. Remember: every masterpiece ever painted in history involved hours, days, weeks and sometimes months to complete, not to mention the 10 failed attempts and 40 years experience that preceded it. Da Vinci didn't grow up magically knowing how to paint. He *learnt* how to paint; by applying colours inappropriately, by getting proportions all wrong, by choosing the wrong subjects and picking up the wrong brush. He didn't start out a master, he became one!

## VISION VALLEY

The trick is to learn from your mistakes, concede that you'll always make them (no matter how good you are or how many years of experience you have under your belt), and understand that they're crucial to your development. Every time you make a mistake you can put it down to experience, and draw on it next time. The trick is to never attribute mistakes with failure. The way I see it, mistakes pile up, and the bigger the pile the further you can see when you stand on them!

Mixes are never taken too far, only abandoned for any number of reasons. If a mix you're struggling with hasn't worked out after three days or two weeks, fine. Maybe you have made some poor decisions along the way; wasted time flogging that dead-horse-of-a-backing-vocal part, or adding reverb to that dobro. Don't despair. Dust yourself off and realise that all of it is progress in one form or another. Keep at it and work through the problems with determination. You'll get there in the end.



Andy Stewart owns and operates The Mill in Victoria, a mixing and mastering facility with clients ranging from Paul Kelly to Gotyé. He's happy to respond to any pleas for recording or mixing help... contact him at: [andy@themill.net.au](mailto:andy@themill.net.au)



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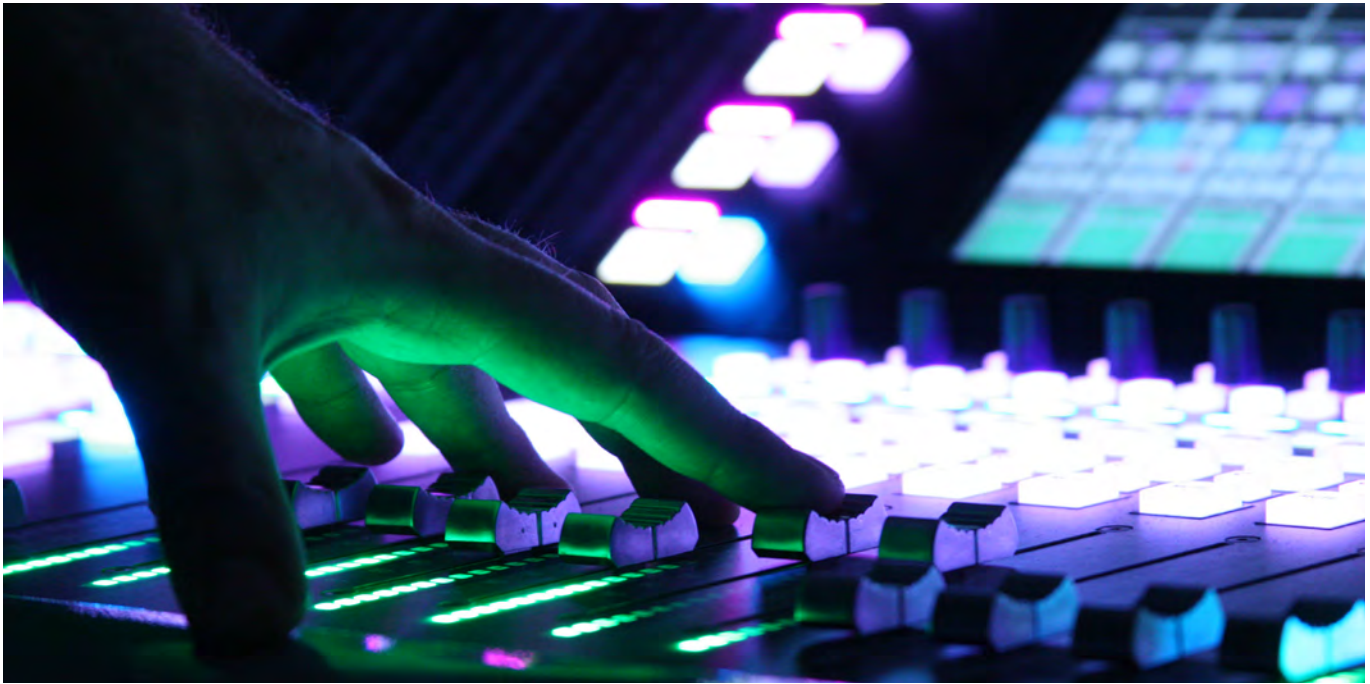
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# SSL LIVE

SOLID STATE LOGIC HAS BUILT A LOT OF STUDIO AND BROADCAST MIXING CONSOLES, BUT NEVER A LIVE SOUND DESK. UNTIL NOW.

BY JIMMY DEN-UDEN



**THE SSL LIVE FEELS GOOD TO USE AND SOUNDS GORGEOUS, AND SITS IN THE SAME MARKET AS MIDAS XL8 AND DIGICO SD7. IT REPRESENTS 3 YEARS OF DEVELOPMENT BY THE COMPANY, AND WAS DESIGNED FROM THE GROUND UP. SSL EVEN HIRED NEW STAFF SPECIFICALLY TO WORK ON THE PROJECT. THE RESULT IS EVERYTHING YOU'D EXPECT AND THEN MORE.**

The SSL Live isn't just a surface, it's a complete console. It contains all the audio DSP and has on-board IO, both analogue and digital. You can spec up to 32 analogue inputs and outputs at the console, and the mic inputs use SSL's SuperAnalogue mic pre-amps. The console also hosts up to 8 AES pairs of inputs and outputs, all with sample rate conversion. It runs at 96kHz and uses a Windows 7 Embedded operating system. Floating point processing provides way more headroom in the digital domain than any sane operator would ever call for. End to end latency from analogue input to output is 1.48mS. Straight out of the box you can plug stuff in, and mix.

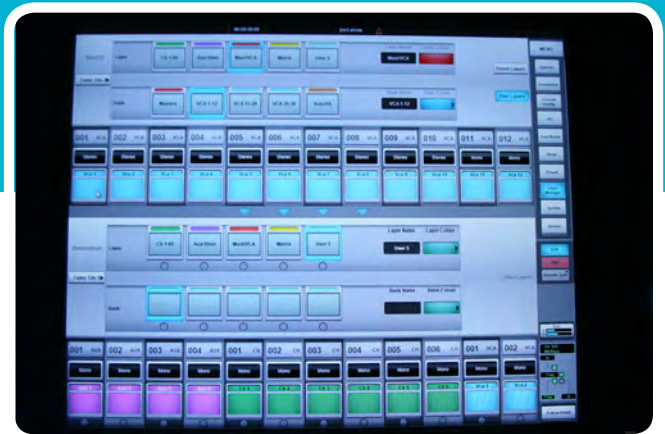
In case the on-board IO isn't enough (or you want it remotely located) you can connect stage boxes via the MADI or SSL Blacklight interfaces. Blacklight supports up to 8 stageboxes (all with redundancy), connected via the "concentrator" unit.

There's redundant Blacklight, redundant MADI, and redundant power supplies on everything. Use any of the MADI ports for recording. The console can self-discover what's connected to it, and stageboxes can be named as can their individual ports. Each input has an "attention" light which can be triggered from the console to make signal tracing easier, and electronically isolated split outputs are optional.



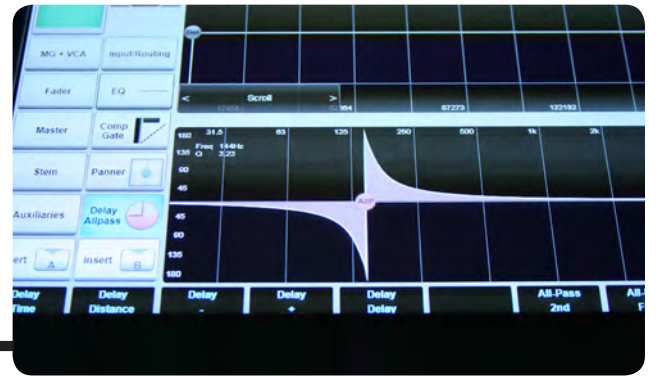


## CHECK OUT THE EFFECT RACK - HOW MANY SSL BUS COMPS WOULD YOU LIKE?

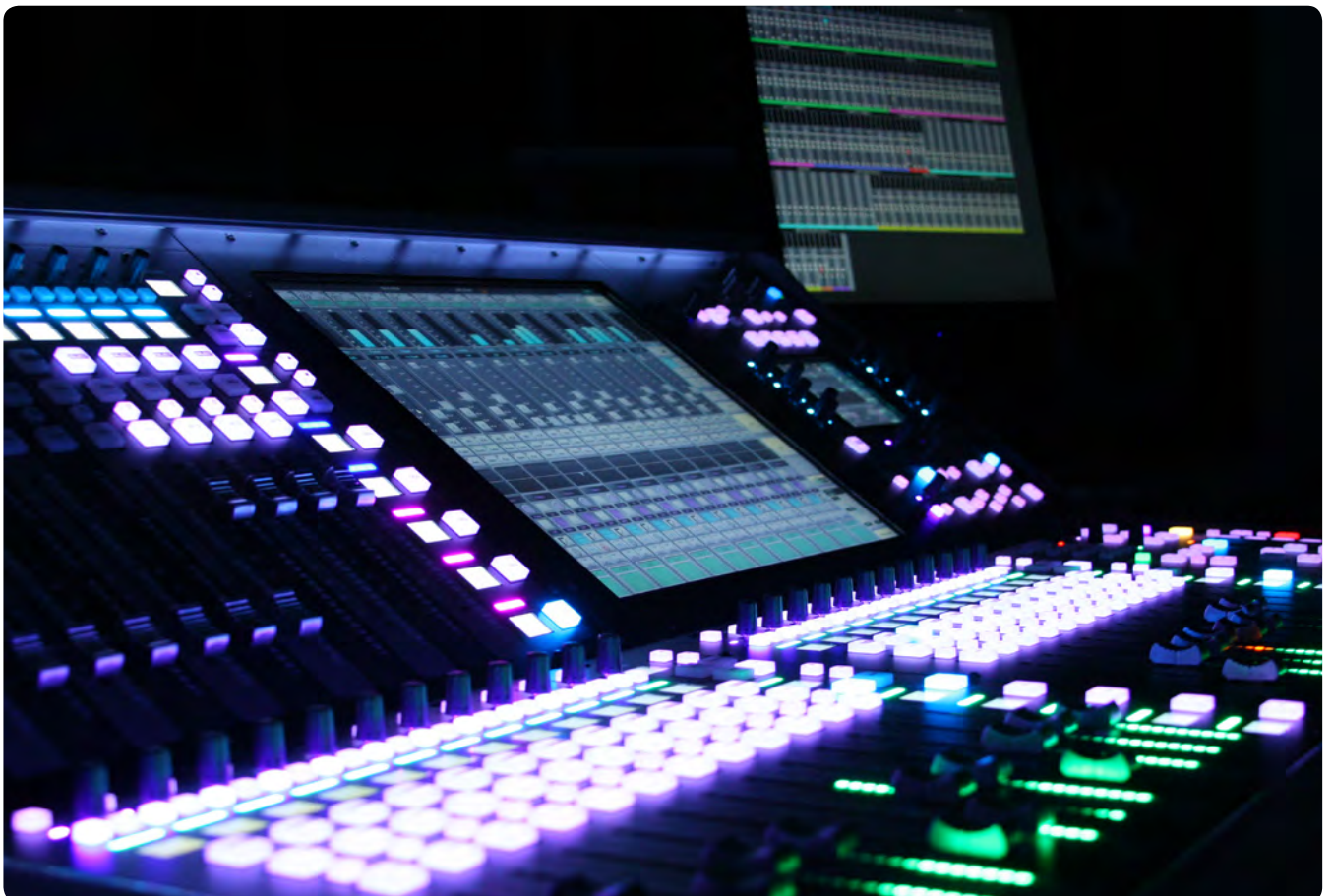


Physically the console is sizable but not imposing. Understanding that live sound people tend to stand up most of the time, SSL has designed a console that is ergonomically sound to operate while standing. The back panel has power inputs, IO, screen and USB ports, while under the front edge are more USB and headphone connectors. The surface is split into “tiles” – 2 or 3 fader tiles (depending on configuration) each hold 12 faders. Each fader tile has five layers of five banks, and my test console had 3 tiles. So that’s 75 fader layouts – and they’re all fully customizable. Changing the default layout is another drag and drop operation, and you can assign anything you like to any fader, be it a channel, stem, aux, master, solo or talkback bus. There are two talkback busses and three solo busses (with an output router). Screen and surface back-lighting is adjustable, and levels can even be recalled in scenes.

## ARRANGING FADER LAYERS IS DRAG & DROP



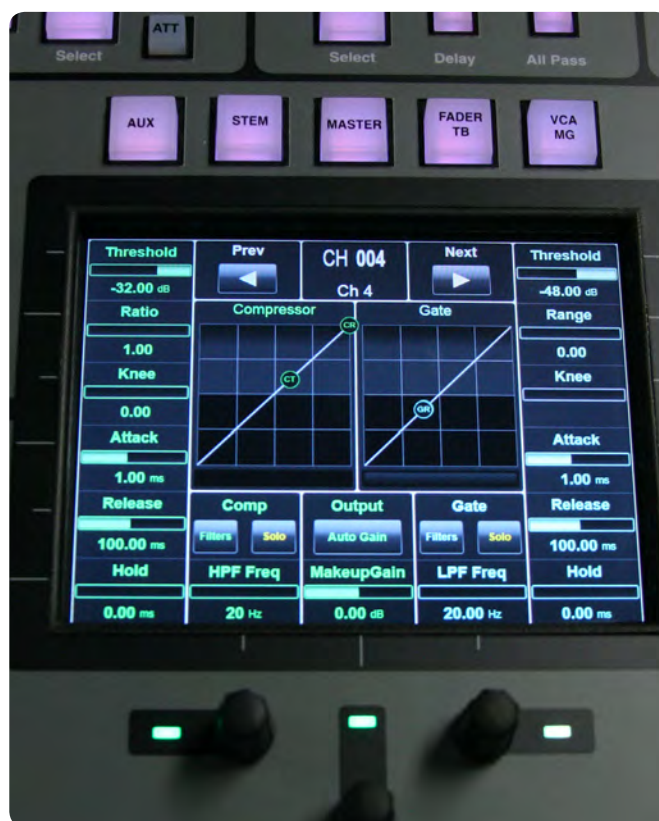
## THE VERY COOL ALL PASS FILTER





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MULTI-TOUCH CHANNEL FOCUS SCREEN

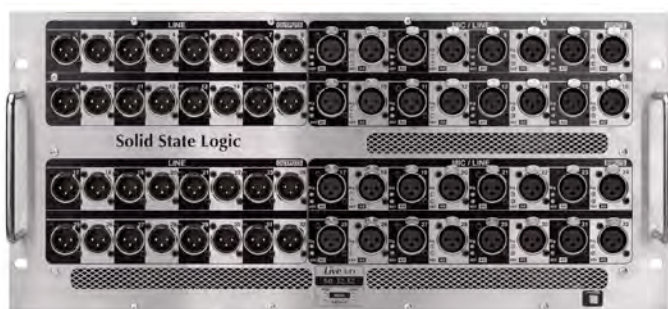


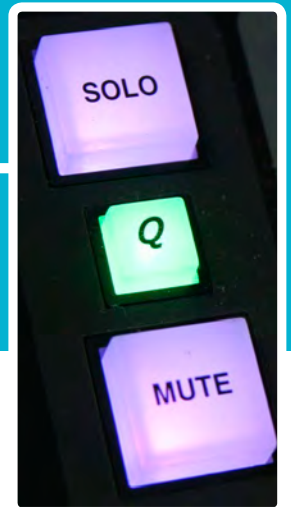
A central 19" multi-gesture touch screen is complemented with an additional smaller 5.7" "focus" screen (also multi touch) which sits in the channel control tile. The small screen allows quick access to EQ, dynamics, delay, inserts and sends for the selected channel. The big screen shows information for any one of the three fader tiles – pressing the "screen" button on each tile calls it to screen. The big screen is also used to configure the various options through the setup windows, access the effects rack, and do things like name channels using a virtual keyboard.

The system architecture of the SSL Live is such that up to 976 inputs and outputs can be connected to the console simultaneously. How many of these can be addressed at once depends on how you structure the console configuration, but as a rough guide you have 144 full processing paths and 48 dry processing paths to work with (in addition to a 32 x 36 matrix). Full processing paths have EQ and dynamics as well as delay and insert points. The channel processing order can be re-arranged on a per channel basis – just mute the channel then drag & drop. The dry processing channels have only two insert points and a

fader, but they use less system DSP. SSL Live has the option to route outputs to multiple destinations on the console or stage rack, and every input has an A/B option too.

In essence you can route anything to anywhere you like within the console, and the process of actually defining the routes is much easier than I expected it to be. There's a fast route facility to quickly patch a series of inputs to faders. There are fast ways to do a lot of things – if you want to see where a channel is routed to press the "Query" button (it even sounds polite!) and all the channel's destinations will spill onto the adjacent fader tile. Query works in reverse to show VCA group members and contributing channels on busses.





The SSL Live allows you to populate up to 96 effect slots, each of which can be routed anywhere (even to another slot for serial effect chains). How many slots you can use at once depends on what processes you engage – an oscillator will use less DSP than a reverb for instance. Effect choices include reverbs, delays, modulation effects, as well as several different types of EQ and other tools. In addition to this are well known favourites like the SSL Bus Compressor, which is something you really have to play with to get a proper understanding of. The Dialogue Automix is cool too – a nice alternative to gating signals. The biggest challenge with the effect processors on the SSL Live is avoiding the temptation to over-use them.

The thing about the SSL Live is that it's capable of delivering way more (and way different) things than most operators know to ask of a mixing console. If you're on a tour where the options to refine the show daily exist then this is great – you have all the options in the world. Use

them. If not, just put good signals in, open the faders, and listen. It's still going to sound incredible.



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Mark Lizotte, 2013

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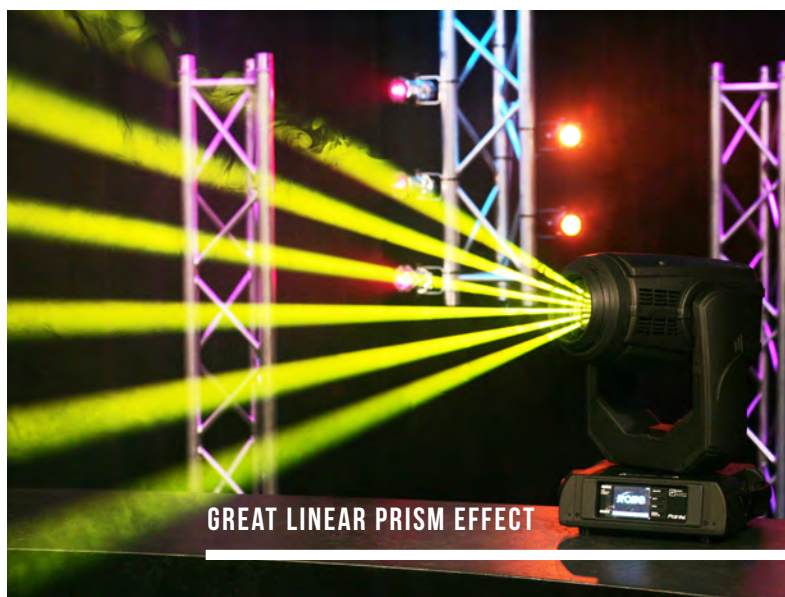


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# ROBE POINTE

## EVERYTHING TO EVERYONE?

BY JIMMY DEN-ouden



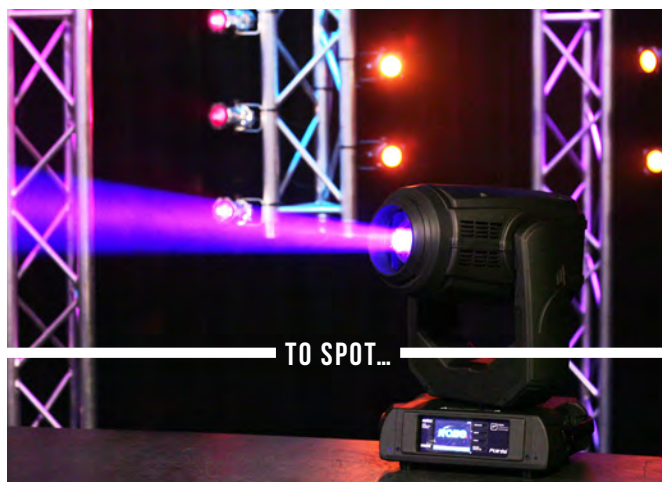
**BUILT ON THE OSRAM SIRIUS 280W SHORT ARC DISCHARGE LAMP, POINTE IS ONE OF THE NEWEST ADDITIONS TO THE ROBE PRODUCT STABLE. ROBE CLAIMS THE FIXTURE TO ADDRESS EVERY NEED FROM BEAM TO SPOT TO WASH. I RECKON THAT'S A PRETTY TALL ORDER, BUT IT MIGHT BE POSSIBLE.**

The Pointe is not the most complicated fixture we've seen. There's no CMY, no beam shaping, and you can control it with as few as 16 channels of DMX (or 24 if you're so inclined). Colour is handled by a 14 position wheel which holds 13 dichroic filters plus an open white. Dual gobo wheels provide 14 static plus 9 rotating indexable gobos. A third wheel allows you to engage either an eight facet round prism, or a linear six facet effect.

Dimming is a mechanical affair, and if you don't need full output you can run the lamp in economy mode (230W) taking the lifespan from 2000 to 3000 hours. Perhaps the biggest thing about the Pointe is the optic path, which allows for beamwidth from 2.5 to 20 degrees. Engaging the frost filter takes this out (by my approximation) to about 60 degrees at full wide zoom.

Light output in beam mode is claimed to be 72250 lx at 20m or 82,400 lx in spot mode at 5m, which indicates that the lamp itself is bright and the optic train good. Another nice example of efficiency is in weight – at 15kg the Pointe feels solid but not unreasonably hefty to move about single handedly. Pan and tilt locks and optional single, dual and quad head cases help with the moving about thing too. Pan and Tilt are 450 and 270 degrees respectively.

The unit accepts DMX over 3 and 5 pin XLR both with loop outs, and power input is via Neutrik PowerCon. A





single EtherCon accommodates ArtNet or MaNet input, and there's also a wireless CRMX option available. Just for something different I hooked the fixture up over ArtNet for testing – everything worked as expected. ArtNet setup and DMX channel allocation is controlled via backlit LCD touch screen, as are all other functions on the fixture. The touch screen interface is RNS2 (Robe Navigation System 2), and as I may have mentioned previously it's fantastically clear and simple to use.

Techno babble done and dusted, let's talk about how it lives up to the claims. We'll start with beam effects. There's no question that the Pointe excels in this task. The minimum zoom angle is quite tiny and if you engage one of the "tiny dot" gobos it gets even smaller. I only had 5m or so projection distance to play with but I'm confident the fixture would eat up 10 or 20 times this range with ease.

Running in spot mode the projected light field seems a

little cleaner than in beam – probably an important thing if you're using the fixture to illuminate actual surfaces rather than the spaces between them. In both beam and spot modes the gobos look great, colours are rich and output is punchy. I'm absolutely in love with the 6 facet linear prism – it's something new and when combined with certain gobos it yields fresh and interesting looks.

Engaging the frost filter widens the beam out such that the resultant light field is very flat. I like that the frost can be progressively engaged too, so you can have beam or spot effect with a little bleed around it. At full frost you do start to lose intensity on heavily saturated colours – as usual deep red suffers the most. Open white or CTO yield very good output considering the relatively tiny lamp inside the unit. It's not a stadium grade wash light, but for smaller gigs it would be fine.

The Pointe is likely to appeal to smaller operators looking for a multi-purpose fixture they can deploy in a variety of different situations. Application flexibility will always yield better ROI than task specific units – and isn't that the point?





Watch on CX-TV.com

BRAND: ROBE  
 MODEL: POINTE  
 RRP: POINTE-\$9027.  
 POINTE WITH WCRMX-\$9364.  
 PRODUCT INFO: WWW.ROBE.CZ  
 DISTRIBUTOR: WWW.ULAGROUP.COM

# ALLEN & HEATH QU-16

## FULL OF DIGITAL WIZARDRY...

BY JIMMY DEN-ODEN



**ILIVE WAS THE FIRST FORAY INTO DIGITAL MIXING CONSOLES FOR ALLEN & HEATH, AND AT THE TIME I WASN'T MUCH OF A FAN. SEVERAL YEARS ON THEY'VE REFINED THE PLATFORM AND I'VE SPENT MORE TIME WITH IT, AND THESE DAYS I'M QUITE FOND OF IT. IN SOME WAYS IT STILL FEELS A BIT WEIRD TO USE, BUT IT SOUNDS GOOD.**

QU-16 is very different from the iLive. It looks exactly like what I imagine a digital MixWizard would look like. It's not unconventional in its layout – faders along the lower half, mix select buttons at the right, moderate sized touch screen and common channel controls all with dedicated encoders. Perhaps what distinguishes the QU-16 is the stuff you can't do with it. You can't soft patch inputs and outputs to be things other than what they are – the console is a very fixed format. This is great news for places like schools and churches, since it removes about 700 ways to make the thing not work.

The QU-16 has 16 mono plus 3 stereo inputs, and four internal effect engines. Up to 24 inputs can be routed to mixes, so there's a bit more input capacity than you can actually route at once. Mono inputs can be paired with adjacent channels in much the same way as on early Yamaha boards, and they all have a TRS jack as well as the XLR in case you want line level in. The console supports a stereo main mix bus plus four mono and three stereo auxiliary busses. Another two mix busses route to the internal effect engines. The back panel has the expected array of connectors for all this stuff – XLR for everything bar the stereo inputs which are two sets of TRS on the back, plus a single mini-jack on top for ST3.

I don't believe that professional equipment should support standards like MP3, but reality is that gigs where a desk this size is appropriate will often be the kind where dance school teachers turn up (late) with backing tracks on an iPod. So 3.5mm jack is actually an appropriate connector to include. AES and a pair of ALT output TRS connectors can have any mix assigned to them, as can the Qu-Drive Stereo input. For a little console the range of connectivity the QU-16 affords is impressive, but so is the on-board processing.

Each input channel has full 4 band parametric, noise gate, and compressor, phase reverse and delay (up to 85mS on inputs, 170mS on outputs). Each output has a GEQ and you can flip the bands to the faders by pressing the dedicated button. I like that A&H has enabled the PEQ on the effect returns too – this function was missing on iLive. Metering on the QU-16 is not a typical digital “-18=0” affair, but analogue style with a 0dB mark, then +3, +6, +12dB and finally peak segment on the ramps. The only analogue controls are the headphone and ALT output level pots. Faders work in two layers – mono channels 1-16, and stereo channels, effect returns and mix masters on the second layer.

The console has four mute groups to which anything can be assigned. Muting channels independently and via mute group simultaneously leads to a confusing array of different speed flashes across mute keys, I would rather just see the mute LED stay on until the channel is unmuted on the group and itself. Good intentions but the feature is confusing. Less confusing is the touch screen, with 6 quick access buttons adjacent. The channel processing screen is a “tabbed” style operation, making it quick and easy to get to stuff.

You can assign mute groups or a swag of other functions to the four user assign keys. There are no audio subgroups

**REAL CONTROLS FOR COMMON FUNCTIONS,  
+48V IS A TOUCH SCREEN FUNCTION**



as such, so you can't for instance compress vocals as a group then internally route it back to the mains. But that's okay, if it really mattered you could use a cable and return it on a stereo channel. The market this console sits in probably won't care about features like this anyway, nor the absence of VCAs. I like the choice of four channel compression modes including auto-timing options.

Because the QU-16 is still brand new, there are a bunch of things you can't yet do on the v1 firmware, like setting user permissions, connecting stuff to the dSnake port, iPad remote, and building custom fader layers. At least the hardware is there so it's likely these and other features will appear in a future release. In a big single fingered salute to PC users, the 24 up 22 down USB-B audio interface supports Mac computers only. Fine by me, though I reckon they'll probably update that too. I love that the QU-16 boots up in a bit under 8 seconds.

If you attach a USB hard drive (not a thumb drive, an actual hard drive) to the Qu-Drive port, you can do multi-track recording and playback of up to 18 channels. That's a freaking awesome included feature. Other nice inclusions are all there too – talkback, PFL/AFL switching, signal generator and even a spectrum analyzer. The console runs at 48kHz sample rates with 24 bit Sigma Delta AD and DA conversion.

At the end of the day, a QU-16 will cost about the same as a MixWiz and enough graphic EQs to strap one over



each output. But the QU-16 will do way more internal processing, in a smaller footprint. It still rack mounts, it still sounds good, and perhaps most importantly it's an unimposing pathway into digital mixing. The QU-16 is perfectly, exactly what it needs to be. I get the impression that the software is still somewhat in development, but with such a promising start I'm really looking forward to seeing where this one goes.

BRAND: ALLEN & HEATH  
 MODEL: QU-16  
 RRP: \$3499 INC GST.  
 ADD \$99 FOR RACK MOUNT KIT.  
 PRODUCT INFO: [WWW.ALLEN-HEATH.COM](http://WWW.ALLEN-HEATH.COM)  
 DISTRIBUTOR: [WWW.TAG.COM.AU](http://WWW.TAG.COM.AU)



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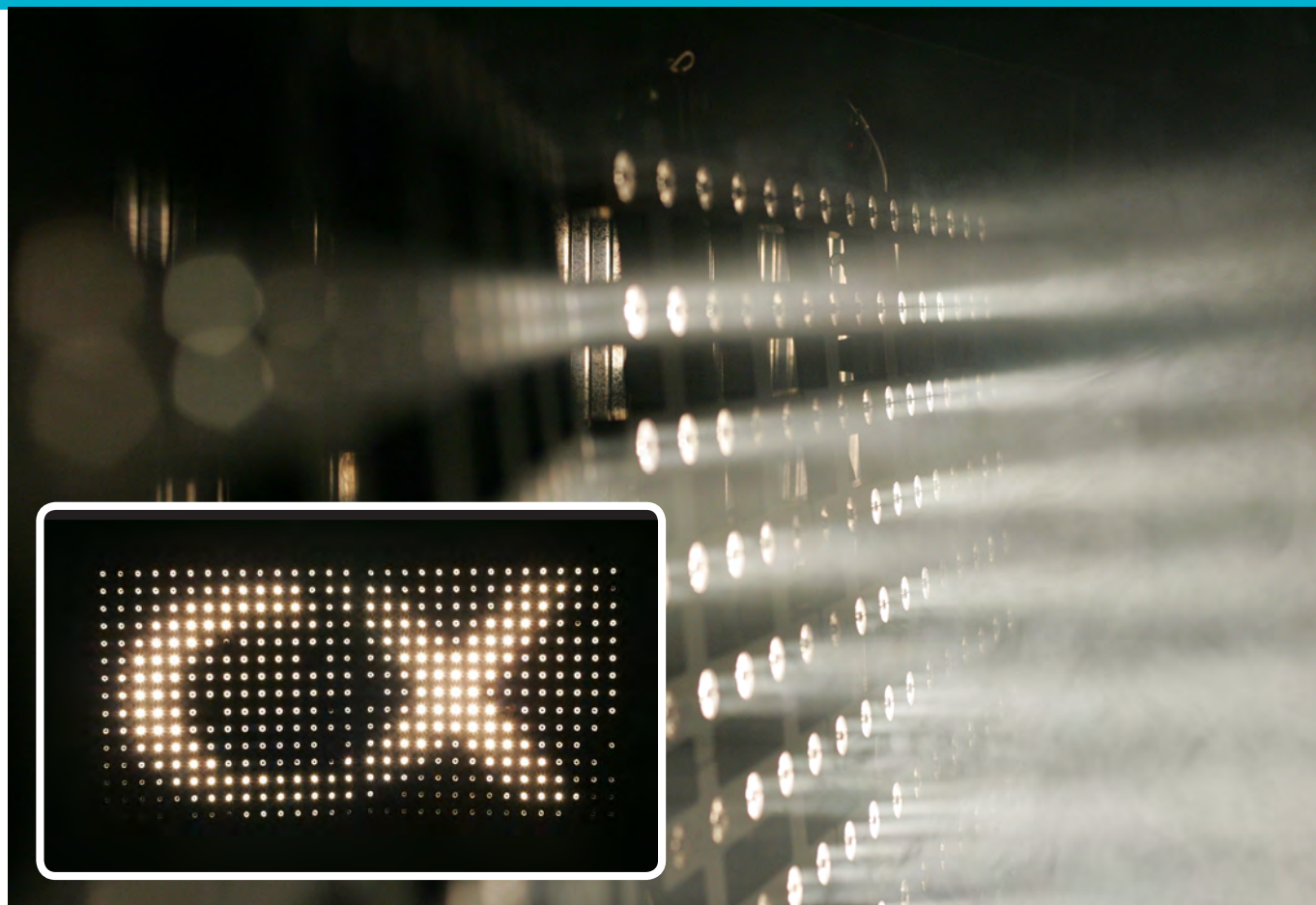
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Impression RZ

# CHROMLECH ELIDY LIFE IN MONO(CHROME)

BY JIMMY DEN-OUDEM



**CHROMLECH SEEMS LIKE A COMPANY WHO DO THINGS A BIT DIFFERENTLY FROM EVERYONE ELSE. WHILE THE WORLD OUTSIDE IS GOING MAD FOR RGB COLOUR MIXING, MUCH OF CHROMLECH'S PRODUCT IS ABOUT WHITE LIGHT — JUST THINK OF JARAG! ELIDY IS NO EXCEPTION TO THIS.**

Elidy is a modular LED based matrix panel system. The heart of it is the Elidy-S panel, a 5x5 matrix of 3W LEDs with 2800K colour temperature and very narrow beam optics. With all 25 LEDs on full tilt, the Elidy-S produces 4000 Lumens. The Elidy-S panel is available as a standalone unit with a yoke mount, and 4 pin XLR input – it cables up something like a colour scroller.

While you can run a single Elidy-S panel, the PSX-9 controller you need in order to do this can actually power up to 9 panels. Conveniently enough, 3x3 Elidy-S panels totals 9 units, and measures 1 square metre. You can buy the system pre-built in this module size as either Elidy-Big

(yoke mounted), or as we tested it the Elidy-Wall. Each 1m section uses a PSX-9 controller, which connects to the panel via 3x 4pins. The frame distributes control signals to the three rows of panels. The PSX-9 controller is well thought-out, and includes captive screws to attach it to the back of the Elidy-Wall frame. The wall frame itself can link to others above and beneath with a system of captive pins, and sideways adjacent sections can be screwed together too.

Since each Elidy-Wall section has 225 LED elements you need 225 DMX control channels. This means 2 sections per DMX universe – not very efficient. Perhaps for this reason Chromlech has included dual ArtNet connectors on the PSX-9 as well as DMX ports. The nice part about this is that you can daisy-chain ArtNet between panels without the need for network switches and star wiring. Simple yes?

Our test kit was supplied as a pair of Elidy-Wall units with PSX-9 supplies. We also had a Pandora's Box media server outputting ArtNet to drive the kit. Just for laughs I tested it on another console too – it all did what it was supposed to. The PSX-9 lets you address the panels as either 9x Elidy-S units, or as one Big Wall. If you use the Elidy-S mode, you can treat them exactly like Jarag fixtures in 26 channel



mode. Unlike Jarag there's no internal function or character generator on Elidy – it's really designed to be used with a pretty decent control system.

The first thing you notice about the Elidy is that it's extremely bright, especially if you're in the direct path of the beam which I estimate at about 10-15 degrees. If of course you don't need to hit the punters in row ZZ at the far end of a stadium, you can of course dim the LEDs. The dimming is smooth and flicker free.

The idea of Elidy is that it's not just something you rig behind the band. There's a video on the Chromleach website which shows the product in a number of applications. You can even mount it beneath transparent MegaDeck sections and fire it upwards. Really the idea behind Elidy isn't hugely revolutionary, but as is often the way it took someone to think of it and do it. Chromleach had that thought, and Elidy is the well executed result.

BRAND: CHROMLEACH  
 MODEL: ELIDY-WALL  
 RRP INC GST: ELIDY-S - \$1699,  
 ELIDY-WALL - \$15999,  
 ELIDY PSX9 POWER SUPPLY - \$3099  
 PRODUCT INFO: WWW.CHROMLEACH.FR  
 DISTRIBUTOR: WWW.SHOWTECH.COM.AU



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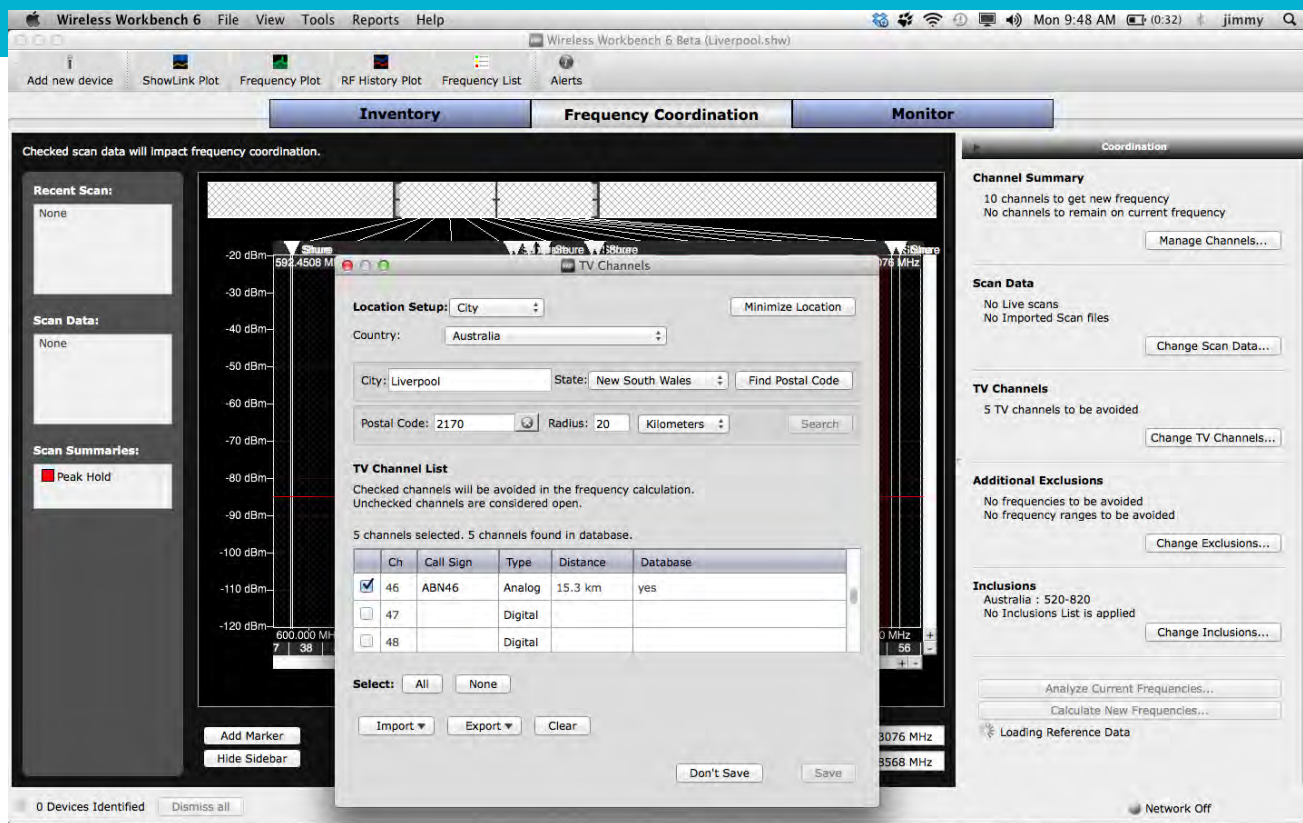
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# SHURE WIRELESS WORKBENCH 6 KNOWS ALL THINGS ABOUT RF THAT YOU PROBABLY SHOULD

BY JIMMY DEN-ODEN



## WITH THE EVER-DIMINISHING BANDWIDTH ALLOCATED TO RF SYSTEMS IN ENTERTAINMENT IT'S IMPORTANT TO KNOW WHAT YOU'RE DOING WHEN YOU DEPLOY RF SYSTEMS ON A GIG.

The reality is that most people don't know. I frequently see things like antenna boosters dialed up to 10dB gain in small stage applications. Such practices in this application usually cause more problems than they fix. Properly planned frequency management is a far better proposal. Back when I was young, this meant all kinds of referring to documentation and calculating intermods. It involved math, and it was confusing. Now Wireless Workbench 6 is here, and it's so easy to use that there's no excuse for poor frequency management.

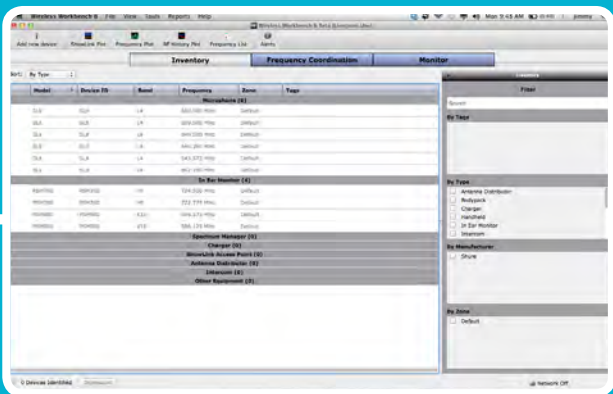
WWB6 is built into several tabbed windows – inventory, frequency coordination and monitor. There are some additional tools including frequency and RF history plots – we'll get to those later. Using the software is basically a process of completing the tabs from left to right, and most of it happens pre-show.

Start with the Inventory tab, where you build a list of all the RF devices in use. Networked Shure products such as Axient, UR, ULX-D and PSM1000 automatically show up

in the list (assuming you've setup the network interface between them and the computer) straight away. Non-networked devices, and products from other manufacturers need to be manually added to the inventory, and this is done using the "Add new device" button. Once all your devices are in the list, move onto the Frequency Coordination tab.

Here, the first thing to do is tell WWB6 which devices you need channels allocated to. Do this via the Manage Channels button – just tick the things you want. If you have a network enabled Shure product connected you can do a scan of the bandwidth. Compatible products include the Axient Spectrum Manager, PSM-1000 (the beltpack actually does the scan!), and UR receivers. We used one of the new ULX-D quad receivers – like the dual receiver it's equipped with Ethernet ports which allow WWB6 connectivity as well as output via Dante. The scan will cover whatever bandwidth the receiver does. Scan data is then incorporated into the frequency coordination process. You can also import scan data.

Next up, tell WWB6 where you are so it can account for any local transmitters – things like TV towers. This is done via postcode lookup – enter the postcode for your location, and a range you want to cover. It will find anything inside the specified range and exclude its frequency. You can manually add single frequencies or ranges to the exclusions list too. Once this is done, hit the "Calculate New Frequencies"



button and wait a moment. You'll then be presented with a list of frequencies for every device you requested. You can also ask WWB6 to calculate backup frequencies. Once you have your list, press "Deploy". This transfers frequencies to the inventory list, and also pushes them into connected network devices automatically. Set channels on your non-networked devices manually, sync transmitters, and you're done.

The Monitor tab of the software allows you to see the status of many networked Shure devices simultaneously. The main overview screen allows you to turn displays on or off for single units or groups. The "shortform" tile for each device shows RF and AF strength, as well as the device name and remaining battery run time. The tiles can be expanded to show more detail and allow adjustments for frequency, gain, and IR sync preferences. WWB6 can monitor RF history for your devices, and plot it on a graph which can then be saved. This is a great way to confirm RF stability over time, and indeed to prove your point should the question ever be asked "Did the RF drop out?".

Ultimately short of lining your entire venue with lead (which is not a healthy or practical choice) there's no way to guarantee seamless single channel RF transmission. Products like Shure Axient are more than smart enough to negotiate frequency logjams, but they don't fit into everyone's budget. The best most of us can ever hope to do is minimize the chances of RF problems through proper planning. Spending a few minutes punching info into WWB6 is one of the best and easiest ways to do this.



BRAND: SHURE  
 MODEL: WIRELESS WORKBENCH 6  
 RRP: FREE  
 PRODUCT INFO: [WWW.SHURE.COM](http://WWW.SHURE.COM)  
 LOCAL SUPPORT: [WWW.JANDS.COM.AU](http://WWW.JANDS.COM.AU)



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SEPTEMBER  
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# ROAD SKILLS

**PINK**

**SPLENDOUR  
IN THE GRASS**

**MANIC STREET  
PREACHERS**

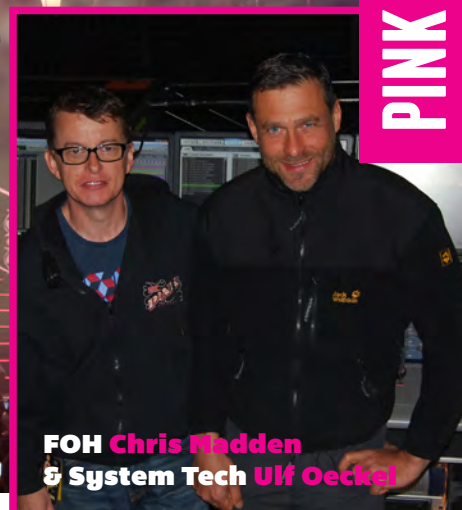
BY CAT STROM

PINK PHOTOGRAPHER - Todd Kaplan  
SPLENDOUR IN THE GRASS PHOTOGRAPHY - Marc Grimwade  
MANIC STREET PREACHERS PHOTOGRAPHER -  
Troy Constable





**By the time this goes to print P!NK will be finishing her 11-week Australian leg of her Truth About Love Tour, during which she would have played 46 arena-sized concerts. Melbourne alone, she played 18 concerts to over 200,000 people; in fact Melbourne is Pink's biggest market in the world.**



**FOH Chris Madden & System Tech Ulf Oeckel**

**P!NK**

**The show is a two hour visual splendour featuring amazing aerial acrobatics and technical brilliance. Richard Young, production manager extraordinaire, arranged an incredible tour of all aspects of the show from automation to staging to lighting and sound. It's a neat and smooth machine that works tirelessly behind the glitz and glamour to pull off such a successful show.**

Of particular interest to **CX** readers is the fact that this is JPJ Audio's first international tour having supplied audio gear for the US and European run prior to Australia. However, JPJ Audio stress that this is completely a one off situation and that they would not look to do this again in the future, as they are more than happy continuing to service Australia and Asia to best of their abilities, FOH engineer Chris Madden commented that he had used JPJ Audio on several past tours and that the experience

had always been positive. Chris specified an L-Acoustics K1 system, calling it the best PA in the world.

With Pink flying above the audience and dancing between two stages, it's a demanding high-energy extravaganza that particularly challenges the audio department.

At the Sydney Entertainment Centre Chris had 12 K1 a side, six KARA downfill underneath and four hangs of 15 KUDO enclosures to cover the side and rear. Eight K1 SB cabinets per side are flown adjacent to the main hangs whilst SB28's are under the stage. Further SB28's are either side of the stage under the ramps firing out towards the far left and right sides of the room.

"We try to get as much low end in the air as we can," said Chris. "The unpredictability of Pink can be tricky but at the same time exciting. You never know what she is going to do or where she's going to go. The most challenging aspect is that she never, ever mimes. If she stops singing, it goes quiet. I've spoken to her about it asking what happens if



**Monitors** Horst Hartmann



**Lighting** Steve 'Six' Schwind

points right into her mouth. If you get it in the right spot, it's brilliant. The mic boom clips to her IEM – she generally uses only one in-ear.”

Being a Sennheiser sponsored tour, all microphones and radios are by them as are all IEMs in fact monitor engineer Horst Hartmann bleeds Sennheiser, living near them and working closely with the company.

Horst worked closely with Sennheiser to develop the special integrated monitor and microphone to cope with the highly physical nature of the performance, the aerial stunts and the lifts within the dance routines. The microphone can easily be attached to the in-ear mould and stay in place with no adjustments. As well as the challenge of the range of motion mentioned by Chris, the microphone had to sound as good as a hand-held one and had to be extremely resistant to feedback, like a hand-held would be.

Horst also uses an older console in the form of a Yamaha PM1D and as there are just way too many cues for one monitor engineer in this show, Pink has two. Whilst Horst looks after the band, Jon Lewis takes care of Pink herself, also on a PM1D.

As Pink uses just the one IEM, she also requires wedges and side fills, making monitors a tricky job.

The PM1D gives me the inputs and output numbers that I need; I have more than 45 mixes and the PM1D can do 48 mixes, 28 matrix and 2 stereos,” commented Horst. “It also never fails. I looked for a different console but nothing matches what the PM1D can do for me.”

Automation is by Stage Technologies and includes the four wire system similar to the sports cam rigged over footy fields, only this time it is Pink flying over the audience rather than a camera. The system includes variable speed chain motors lifting five LED screens, two of which traverse across the stage, a custom curved track performer flying system and a heavy duty winch for flying acrobatic apparatus and performers are all controlled by Stage Technologies control desks running eChameleon software.

Built into the stage are two lifts, which ingeniously have no framework underneath them as the motors are in the deck of the lift itself, and a couple of ‘toasters’ – Tait’s air pressure powered lifts that thrust performers up onto the stage like pieces of popping toast.

The set consists of 10 separate configurations of digiLED MC7 7mmLED screens, built around the centrepiece of

when she is hanging upside down in front of the PA she has a problem – and she replies, well it goes quiet.”

Chris uses a slightly long in the tooth Digidesign D-Show console for mixing using all onboard effects particularly TL Space for reverb and a lot of Fairchild compressors, LA2’s and LA3’s as well as some DSP.

“I like having two rows of encoders and I like having 24 input faders, I hardly do anything with VCA’s,” he reported. “Plus it gives me a dedicated high pass filter which the more modern Profile doesn’t have.”

Often during the show Pink is in front of the PA and in one number she goes right underneath the right stage PA but that doesn’t seem to faze Chris who will just calmly chase it.

“She has a fantastic Sennheiser headset mic which we developed with them,” said Chris. “It’s a directional mic that

**PINK**



**Staging**  
**John Williamson & Todd Green**

**Video** **Tim Jones**

**PINK**

a 'dressed' heart-shaped 6m tall MC7 screen, flanked by four moving video 'picture frames' which fly spectacularly around the set throughout the show. In addition, four columns of MC7 rise from the stage behind the band while, further back, another screen forms a backdrop for Pink's dramatic departure on a descending lift.

PRG Mbox media servers manage the video content and pixel mapping requirements.

Larn Poland is Pink's video director (with Aussie Tim Jones on the crew) with all equipment from Creative Technologies in the UK. Six Barco FLM projectors supply the visual with two double stacked to do the main IMAG screens and two singles doing the side screens. Six Sony HXC-100 cameras are switched by a Grass Valley Kayak HD system.

Lighting design is by Baz Halpin and Chris Nyfield of silentHOUSE with Steve 'Six' Schwind acting as lighting director on the tour.

One hundred Clay Paky Sharpys are used all over the set hung from moving truss, LED screens, custom 'octo-truss' and dotted on the floor in and around the set. A strip of 40 x Chromlec Elidy-S LEDs are used on the downstage truss as audience blinders and also for dynamic effects. A total of 38 x SGM XC-5 colour strobes are situated on ladders of trussing upstage left and right, for use as an audience blinder, and also on the roof and side trussing to provide more traditional strobe lighting onto the stage and performers.

PRG's Best Boys also feature in the rig as do 47 x GLP Impressions X4, 10 x Impression 120 RZ, 46 x VL3500 wash and Color Force 12 battens. Steve is particularly enamoured by the Impression X4 and delights in showing me how he can make it do a smiley face, a quirk that Baz loved and incorporated into the show with one cue where it all blacks out and fifteen smiley faces light up.

"Every night they make us smile," said Six. "It's a great light, really fast with incredible colour and the zoom on it is unlike anything I have ever seen. You could take just two of them, zoom them out and light the whole arena." Steve uses a couple of Martin M1 consoles for control which he describes as very fast and responsive.

"They are very fast," he commented. "Between your fade and delay buttons you can apply time and delay to any attribute right into your cue list. It's all about speed. Build the cue and move on. They're also a very solid console and I've yet to find a console that can clone as well as the M1."

Six clearly loves his job and commented that although he was about to do show number 79, he never got bored.

"It's generally the same show every night but when you add Pink into the element you never know what may happen – and that's what is cool about it," he remarked. "I've never done a tour where nearly 80 shows in, you're still looking forward to running it that night. It's the quickest two hours you'll ever have."

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# Splendour In the Grass



## 20 QUESTIONS WITH HAYDN JOHNSTON, PRODUCTION DIRECTOR, SPLENDOUR IN THE GRASS

HAYDN HAS SPENT THE LAST 19 YEARS WORKING ACROSS MOST LIVE MUSIC PLATFORMS, FROM TOUR MANAGER TO BOOKING AGENT AND ALL STOPS IN BETWEEN. OTHER CAREER MOVES HAVE SEEN HIM START LEVEL ONE AGENCY - A LIVE BOOKING AGENCY, ARTIST MANAGEMENT AND INDEPENDENT LABEL CAYMAN ISLAND MA A RECORDS.

However mostly know for his work on the road, lapping Australia as promoter rep with the likes of Kings of Leon, Yeah Yeah Yeah's, Gomez, The Strokes, Interpol and four years based in Chicago as Wilco's International Tour Manager. Haydn has also notched up twelve years of the national Big Day Out tour, twelve years on Homebake, thirteen years of Splendour, two years as Head of Production on all Laneway Festivals Singapore, New Zealand and Australia as well as a host of other festivals.

### 1. What are the three best things about your job?

- I really enjoy the problem solving side of things.
- The people I work with.
- Watching people enjoy themselves knowing you helped make it happen.

### 2. And the three worst things?

- Rain and mud.
- Unrealistic expectations of some artists
- The hours

### 3. What do you never leave home without when working?

Pictures of my family, the older I get the more I hate being away from them.





PHOTO BY NITAI WHITEHURST

**4. What do you do when not working on Splendour in the Grass?**

I am a contractor on Splendour so I also do a lot of other festivals and tours such as Homebake, all the Laneway Festivals, CMC and some others.

**5. What was the worst nightmare you've encountered with the Splendour in the Grass?**

The weather this year obviously made things hard, but we always overcome the hurdles. Then there was the year when I was the Production Coordinator under Jon Pope and he had an accident on the way to site, that was both upsetting and a challenge.

**6. What has been the strangest request from an artist?**

That's hard, I don't really consider requests from artists strange just a part of being an artist, after all it is not me out there in front of all those people.

**7. Who was hell to work with (probably best not to actually mention name but elude to it)?**

The ones that are hard - and there are many - are the ones who do not advance what they want and then expect it when on site. Most of the time they do not appreciate you are in the bush miles from anywhere. I am happy to put in if they are, but don't take kindly to the lack of advance which invariably puts pressure on my guys.



PHOTO BY NIK BUTTIGIEG



PHOTO BY NIK BUTTIGIEG



MUMFORD&SONS CROWD PHOTO BY MARC GRINWADE

**8. What is the most stupid request you've had from a member of the public, artist or promoter?**

I always feel funny about the people who want to get married at a festival or come on stage and propose to their girlfriend, if only they knew how stupid it makes them look.

**9. In your opinion, who performed the best set ever at a Splendour in the Grass and why?**

I don't really watch that many acts to be honest as I have other things to do, but Coldplay the first time they played when we were at Belongil was pretty good.

**10. What is the most bizarre sight you have ever seen at a Splendour in the Grass?**

One of our electricians who I believe is from the Netherlands, dresses in a Homer Simpson suit and wanders around the crowd. It is actually how he ended up in Australia winning a local radio station comp for going to festivals as Homer. He has been here ever since and he is very funny. Last year the Police told him he had to loose the fake bottle of Duff he walks around with for Licensing reasons, just funny all round!

**11. Who has delivered the best audio mix at a Splendour in the Grass?**

Jack White's guy is pretty spot on, and fully analogue.

**12. Who has delivered the best lighting at a Splendour in the Grass?**

I am a believer that less is more in the LX world - they are called a moving light for a reason! The new world of your own floor package is the number one issue we have these days, but this year I thought Steve Granville from Birds of Tokyo nailed it with the additional use of video instead of more lights.

**13. Which Splendour in the Grass venue is your favourite and why?**

Well I did enjoy Woodford, but I am super excited about Yelgun even after it showed us it won't be easy. I honestly cant wait until next year, the one thing with Splendour is they are always thinking about improving.



**14. Which recent piece of production gear do you view as a game-changer?**

Nothing really, some things are making the game easier but to be honest nothing or no one is reinventing the wheel.

**15. What is the most outrageous thing you have ever done on tour?**

Outside of a few too many beers, nothing as I am always too tired. However I do have a strange habit of tucking my shirt in and pulling my pants up – now that is ALWAYS funny, always!

**16. What was the worst weather event at a Splendour in the Grass?**

This year was up there, but the storm and hail on Friday last year was pretty special.

**17. What invention would make your job easier?**

A wireless stage!!

**18. Who would play on your ideal Splendour in the Grass set list?**

For me it is pretty mellow, lots of country, alt country.

**19. Do you have a favourite mantra to get you through the day?**

This year our random radio call was – “it’s nice to be important but more important to be nice”, said in a German accent (I once heard a techno DJ called Scooter say it during his set – killed me), so at random points someone will just say it on the radio.

**20. What did you really want to be when you grew up?**

Funny enough I have a thirty year High School reunion coming up next year and was reading my Year 12 year book where I said I wanted to be an audio engineer. I can’t mix to save my life but it’s close enough I think!



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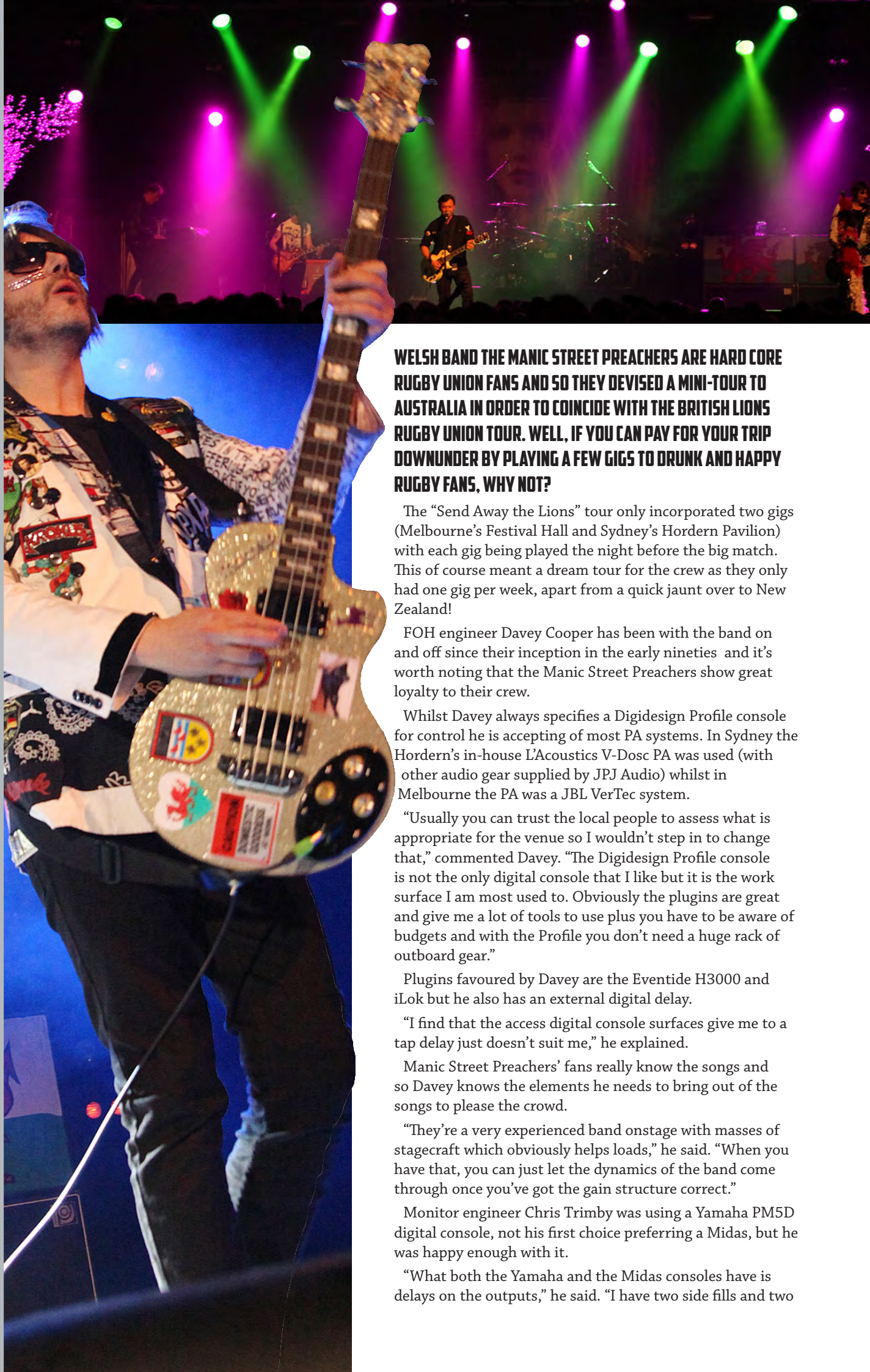
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# MANIC STREET PREACHERS VS THE WALLABIES



**WELSH BAND THE MANIC STREET PREACHERS ARE HARD CORE RUGBY UNION FANS AND SO THEY DEvised A MINI-TOUR TO AUSTRALIA IN ORDER TO COINCIDE WITH THE BRITISH LIONS RUGBY UNION TOUR. WELL, IF YOU CAN PAY FOR YOUR TRIP DOWNUNDER BY PLAYING A FEW GIGS TO DRUNK AND HAPPY RUGBY FANS, WHY NOT?**

The “Send Away the Lions” tour only incorporated two gigs (Melbourne’s Festival Hall and Sydney’s Hordern Pavilion) with each gig being played the night before the big match. This of course meant a dream tour for the crew as they only had one gig per week, apart from a quick jaunt over to New Zealand!

FOH engineer Davey Cooper has been with the band on and off since their inception in the early nineties and it’s worth noting that the Manic Street Preachers show great loyalty to their crew.

Whilst Davey always specifies a Digidesign Profile console for control he is accepting of most PA systems. In Sydney the Hordern’s in-house L’Acoustics V-Dosc PA was used (with other audio gear supplied by JPJ Audio) whilst in Melbourne the PA was a JBL VerTec system.

“Usually you can trust the local people to assess what is appropriate for the venue so I wouldn’t step in to change that,” commented Davey. “The Digidesign Profile console is not the only digital console that I like but it is the work surface I am most used to. Obviously the plugins are great and give me a lot of tools to use plus you have to be aware of budgets and with the Profile you don’t need a huge rack of outboard gear.”

Plugins favoured by Davey are the Eventide H3000 and iLok but he also has an external digital delay.

“I find that the access digital console surfaces give me to a tap delay just doesn’t suit me,” he explained.

Manic Street Preachers’ fans really know the songs and so Davey knows the elements he needs to bring out of the songs to please the crowd.

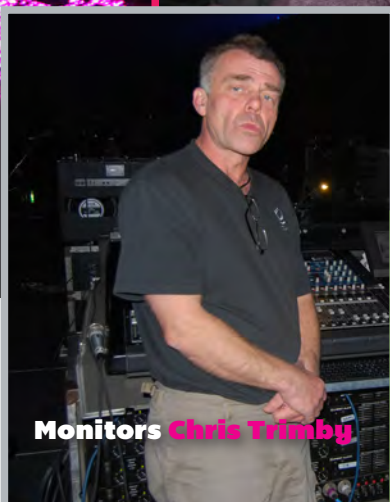
“They’re a very experienced band onstage with masses of stagecraft which obviously helps loads,” he said. “When you have that, you can just let the dynamics of the band come through once you’ve got the gain structure correct.”

Monitor engineer Chris Trimby was using a Yamaha PM5D digital console, not his first choice preferring a Midas, but he was happy enough with it.

“What both the Yamaha and the Midas consoles have is delays on the outputs,” he said. “I have two side fills and two

Lighting Jon Barker

FOH engineer Davey Cooper



Monitors Chris Trimby



downstage mix positions - one for James (lead vocals and guitar) and one for Nicky (bass guitar) - those wedges are delayed to the side fill so they arrive at the same time. In my opinion, time arrival is one of the most important aspects of live sound. It lets me enhance the power of everything because it's knitting together and not competing against itself. Bludgeoning your way through with volume and ignorance is not the way forward."

The only two things that Chris always specifies and can get mildly upset about if he doesn't get are a Shure 91 microphone and the side fills need to be equal distances apart from anything - other than that he can cope with pretty much anything!

The band won't go near in ear monitors (although the drummer uses a hard wired set for clicking) preferring a less controlled and more visceral approach.

Lighting operator Jon Barker is a fairly fresh face on the tour as he is covering for the band's lighting designer Colin

Ross. The show is an adaptation of the band's last big UK show with gear supplied by PRG.

"We have three trusses with a load of gear on the floor and a big wall of offensive lighting at the back!" joked Jon. "The show is quite moody so we use lots of washes and beam lights. It's very backlit with strobes and gear on the floor. Essential to the stage set up are the two pink LED trees which we brought with us (as you do)."

Describing the gig at the Hordern as lighting a show through a letterbox, Jon had a rig of Vari-lite VL3500's washes and Clay Paky Alpha Spot 700 beam lights as well as Martin Atomic strobes and some duets. For control he used his own Avolites Tiger Touch console which fits neatly into a Pelican case.

"I find it a very quick and easy console to use," commented Jon. "It has a built in touchscreen that allows you to lay it out as you want. It's a nice small size, is easy to navigate and Avolites offer great support."

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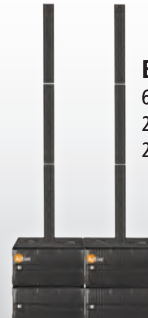
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# BIZ TALK

with Julius Grafton



## MAD MEN MERCHANDISING MAYHEM

HOW DICK SMITH, WOOLWORTHS AND MASTERS TAUGHT EVERYONE A LESSON

**WHO ARE THE WHACK-JOBS IN CHARGE OF WOOLWORTHS? THEY GOT SO BENT OUT OF SHAPE THAT WESTFARMERS (COLES) HAD BUNNINGS, THEY BIRTHED THEIR ANSWER: MASTERS HARDWARE.**

Masters is a train wreck, but one that never ends, since they are committed to opening a whole lot more massive blue hardware and homeware barns, and each new one burns millions every year. For each store opened, local independent small hardware shops will probably fail.

Woolworths relied heavily on junior partner Lowes from the USA, who hold a third of the Masters business.

Masters Australia CEO Melinda Smith said the company had to learn from scratch, despite having a muscled up partner from the USA.

“We didn’t know a lot about this business when we set the budget for financial 2013,” she was quoted by Fairfax.

“We didn’t know a lot about the seasonal curves,” she added. “We didn’t have the right stock in some instances.”

How about this: they didn’t have a plan for what the manager would do with the store keys after closing up!

Or this: they relied on Lowes for stocking data, so they were given a Christmas range plan that assumed it was snowing outside, which is the typical American Christmas! Fathers day? Different date, different buying patterns.

Masters have 120 active ‘sites’ as at the end of 2012, and at least 31 stores now open. The projected losses in 2016 could be over \$200 million. Retail analysts say the stock mix is wrong, tradies prefer Bunnings, and some predict Masters will need to close down a significant amount of existing floorspace to concentrate on lines that actually sell.

Whatever the outcome, the implementation of Masters was very poorly done.

But it is what Woolworths did with Dick Smith that really brings this whole situation into the Mad Men category. Sitting in their boardroom, the Woolworths directors were so overwhelmed by the massive blue Masters plan, they brushed away the annoying Dick Smith chain.

They had 320 stores, employing 4,500 people and turning over more than \$1.5 billion. When sold last year, the chain had delivered a net profit of \$28 million. So the Mad Men sold it for just \$20 million! The new owners also agreed to a profit return, and took the risk on all the store leases and the employee entitlements. But they got the deal of the century.

BRW tell the story: “Dick Smith chief executive Nick Abboud says the current Dick Smith business has turnover of \$1.3 billion, net assets worth \$160 million at the end of June, no core debt, plenty of cash in the bank, and does not pay dividends”.

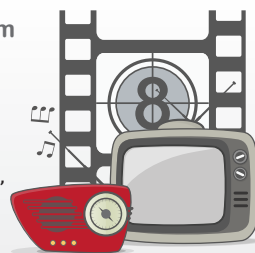
He reports they paid Woolworths a total of \$94 million, and are now released from any further payments. Now they are opening stores, and plan to list the chain on the share market.

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# Fun in the sun on *le Tour*

## Surely those mountains can't be that big?

*Ever since I was a kid, I've wanted to see the Tour de France bike race. This year being the 100th running of the race, I thought - let's go, because if not now, then when? So my gf and I booked in with a tour that let us follow the race on our own bikes, riding up and down the mountains and watching the last stages in the Alps.*

Le Tour is an institution in France; for three weeks pretty much the whole country comes to a standstill every afternoon to follow it. It's the biggest single sporting event in the world, and unlike other events, it's FREE! It's on TV live, on the radio live, in the newspapers every day, with thousands of people taking their annual holidays just to follow it around the country in a camper van.

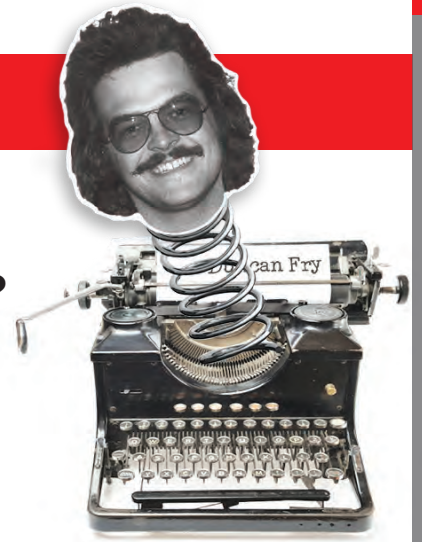
If it comes through your town, the schoolkids all have the afternoon off. The shops and businesses close for a couple of hours as everyone is out on the street waiting for the race to come by to wave and cheer at the riders.

It's one long party lasting twenty-one days. And what does every party need? A good sound system. Music is everywhere you go, from boom-boxes to quite sophisticated systems, although expecting a couple of 12" and horn boxes to cover an audience of about 5,000 is optimistic to say the least. There's a big difference between what you need and what you get.

There are two parts to the Tour: the caravan, and the race. Since the caravan comes first every day, let's start with that.

### The Caravan

Since the whole tour is free to watch, everything has to be sponsored to pay for it all. And preceding every stage of the race goes the caravan of sponsors. And by caravan I don't mean an aluminium box towed by a 4-wheel drive. No, it's a caravan in the true sense of the word – a steady stream of vehicles and floats driving past handing out samples of the sponsors' products. Products like Vittel bottled water, Carrefour supermarket chain, Courtpaille restaurant chain, a cake company, a travel company, Air Corsica airline, Cochonou pork sausages, and lots more.



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The floats are similar to the Moomba Parade in Melbourne, or the Sydney Easter Parade without Jesus. But on speed; like about 50k per hour!

You can hear them coming before you actually see them. The steady doof-doof beat of 80's disco comes floating through the air, and then the first of the caravan vehicles appear. Brightly painted little cars wearing the sponsors' logos wobble around the corner, with speakers of all kinds bolted to either the roof, the mudguards, the bumpers, or the boot, all playing bass-heavy music with a loud voiceover yelling out 'the pitch'.

All being pumped out at 200% of their SPL capability. That means farting bass and distorted vocals; so hi-fi it ain't! It's the same style of music playback you hear at carnivals, fairgrounds, parades everywhere, in all languages. Carny music, I guess you'd call it.

Volkswagen Beetle convertibles with the bootlid removed and a little fibreglass tub bolted into the boot were a popular choice. Someone (usually an attractive girl) would be shackled in the back, throwing out the samples. Safety is obviously very important, so when I say shackled it's not just wearing the car's safety belt, I mean a full harness with multiple large shackles, often with an inertia reel, holding each person in the vehicle.



They go whizzing past, chucking out goodies high and low as fast as they can. If there are a lot of kids they slow down a little and throw them down low so it's easier for the kids to catch them. It's good marketing – get the kids and you've got the parents too (Want some sausage, mes enfants? Scream until Papa stops the car!).

Other than that it's open slather, so it's not a good idea to get between granny and her freebie. Little old ladies ruthlessly elbow anyone out of the way to grab whatever's being thrown into the crowd, whether they want it or not. One of the sponsors was Alcatel, a mobile phone company, who were throwing little shrink-wrapped packages into the crowd, and people were going crazy to grab them. Hoping it was a free mobile phone, I jumped up and grabbed one as it came towards us. Sadly it wasn't a phone, it was a picture of a phone! Talk about 'freebie fever' - people were actually knocking each other out of the way just to get a free picture of a mobile phone. Go figure.

My personal favourite was the Vittel bottled water float. Little cars were wobbling their way around, throwing out t-shirts and handing out (not throwing this time – too risky!) bottles of water to the crowd, while on the mothership float was a giant bottle of water lying on its side. Shacked into two cockpits at the front and back was a girl in each, armed with high-pressure water hoses, spraying

more, and hitting 80+ kph on the descents!

The crowds love the mountains, because that's where the riders are going relatively slower, and you can spend more time with them. So when you've been waiting for 12 hours in the blazing sun with nothing but beer or wine to sustain you, that's when putting on a Devil suit or one of Borat's mankinis and running alongside the riders seems like a good idea.

The Dutch even have their own corner on Alpe d'Huez, which is the mountain with 21 hairpin bends that's shown in all the promos on SBS TV. Greg our group leader said that the Dutch had been there for at least a week, and when we rode past before the race it was party central! They had brought their own music system with them, pounding out bass heavy party music as usual. I'm sure that if I could have had one of the woofers behind me it would have pushed me up the mountain a lot faster.

About 25 of them all dressed in orange were sitting in the gutter, one behind the other, and pretending to row a boat, to the music of a Dutch version of a song like 'Tubthumping' - "I get knocked down, but I get up again...etc etc". After a couple of minutes (the time it took me to ride past) they all collapsed in a heap and went literally rolling down the road, laughing.



*Part of the Caravan of sponsors*

*Vittel Bottled Water float*

the crowd as they drove by. This particular day it was 42 degrees in the shade, so no-one was complaining.

Suddenly the front girl slid out of her cockpit and rolled on her back upside down on the bottle, waving her legs in the air and spraying the crowd through her legs! That's my kind of advertising!

## The Race

Amidst all the mayhem of the caravan, you could be forgiven for forgetting that there's also a hotly contested bike race going on! Twenty-one individual races called stages, a stage winner each day, and the rider who takes the shortest time to cover the 3,000 plus kilometres becomes the overall winner.

It's very hard work, the equivalent of alternating a marathon and a 10,000 metre running race each day. And to answer the question posed in the title of this article, yes those mountains really are that big, and they often have to ride over four or more in a day. Not at a slow, wheezing pace like I did on my bike, but at an average speed of 35 kph or

We found a spot to watch this Alpe d'Huez stage a couple up kilometres further on up the road, just past the German corner. This was populated by a bunch of large Bavarians with underpants tucked into their butt-cracks and wearing aprons, prompting the French guy next to me to comment "It looks as though the Germans have drunk all the beer that the Dutch wouldn't!"

The Tour is something that has to be seen, though. Like the Grand Canyon, pictures don't do it justice. Even if you have zero interest in bikes, the sheer spectacle and atmosphere of the thing is awesome. We went with Cycling Adventures, who were extremely well organized, and knew exactly which roads were open or closed, where the good viewing spots were, where the good food was, and most importantly - how to have fun while doing it.



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