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MONTHLY TECH NEWS
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CX 81, MAY 2013 \$5.50

Integration

Rutledge AV
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Toowoomba Easterfest

Legends

David Grant

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- Sennheiser Digital 9000 Wireless
- Vue Audiotechnik i-Class Speakers
- ShowPro LED PIXPAD TRI-16 DMX
- QSC Q-SYS Core 250i
- Axis Communications P3364-LV

CX NEWS:

- Australian Wireless Audio Group
- Vale Neil 'Smithy' Smith
- ARCA Sydney Reunion
- Martin Audio MLA New System
- Scene Change Brew
- Short Bytes, CX Top 5 and More!



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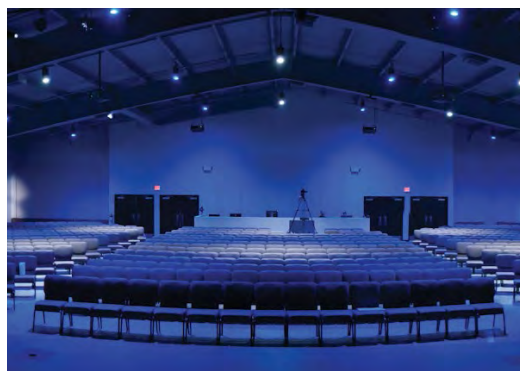


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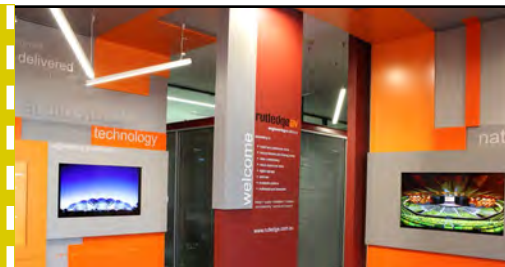
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CX EDITORIAL MAY 2013. VOL 3. # 81. ONLINE EDITION

GUEST EDITORIAL BY JASON ALLEN

CX NETWORK

HITHERE

My name's Jason Allen. I've been working in the production and tech industry since the mid nineties, first as a sound engineer, then for a manufacturer. Some of you might have sat in on one of my digital mixing, DSP or audio networking seminars over the last few years. I've just joined the CX family to run their Melbourne office. I'll be profiling the industry movers and shakers in Melbourne and reporting back on events as they happen.

CX Melbourne – just like CX Sydney, but with much better coffee.

SO, YOU GOT ME STARTED...

On International Women's Day (March 8), I read an article by musician, producer and blogger Madeleine Bloom about her experiences working tech support at DAW company Ableton. Noticing only a very small percentage of people contacting her were women, she dug into the numbers for confirmation – only 7% of Ableton's registered users in 2010/2011 were female. This is a quantifiable number for a phenomenon noticed by everyone working in the production industry, regardless of sector. It doesn't matter if you're up a scissor lift rigging a light, tweaking a graphic EQ or cutting together a B-roll – this is a male dominated industry.

Enough ink has been spilled about why this is the case to render some of the explanations clichéd - technical fields aren't glamorous enough, the hours are a disincentive. These arguments are rubbish; they're disincentives that apply to both genders. There's been little to no objective research carried out to give us an answer, just the airing of a lot of opinion. But something dawned on me as I read that blog and followed a stream of comments about it on Twitter – the disparity is my fault. Yep, mine. I, and countless others like me, am doing something that discourages women from participating in our industry.

It turns out it could be something as simple as just not being female. A recent study by management consultancy firm Bain & Company showed that "women are five times more likely to be promoters of their organisation when females represent more than 25% of the executive team"* What does that mean to our industry? Think of it this way: You're the junior employee unloading the truck, dreaming of the day they'll let you behind the big desk. You look up from your labours and notice that all the people with the cool jobs at the top, and just about everyone else in between, don't share your gender. This leads you, rightly or wrongly, to make assumptions about your chances of ever getting anywhere.

The "promoter of their organisation" behaviour starts once an employee thinks that they have a chance of career progression, and recommend their workplace to others. You're not going to do that if you think you lack something fundamental to success that you can't learn or create. Once we get to the critical mass where the women entering our industry can see and feel a clear path to the top, the balance should start to redress.

And 25% is all it will take – when there's just a fighting chance to identify with some of those that have made it.

Be honest with yourself boys – if you had looked up from that roadcase you were pushing and seen that everyone taking the glory, getting profiled in mags, credited on albums, awarded at ceremonies and lauded by their peers was female, would you have persisted?



**"Creating a positive cycle: Critical steps to achieving gender parity in Australia", February 06, 2013 Bain report By Melanie Sanders, David Zehner, Dr. Jenny Fagg and Meredith Hellicar.*

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NEWS

CX INDUSTRY NEWS

WIRELESS AUCTION DESPITE NO EDUCATION PLAN GOVERNMENT RESISTS COMPENSATION CALL

The Australian Wireless Users Group have complained that the Australian Government is ignoring wireless users as it auctions off frequencies used for wireless audio.

AWAG estimate wireless audio technology underpins \$32 billion worth of economic activity and the employment of more than 140,000 people. AWAG estimate over 150,000 installations have equipment affected by the shutdown of spectrum from end of 2014.



In March AWAG protested to the Standing Committee on Infrastructure and Communications at Parliament House. They want the government to establish a proper education campaign to alert users to the impending obsolescence of some of their equipment, and to compensate some users. This should be funded from the billions of dollars raised at the auction where Telco's will buy frequencies for future use.

In recent years industry has been supplying around 32,000 wireless audio products per annum and estimates around 120,000 units operate in the 694MHz to 820MHz range which is currently slated for use by mobile digital devices by 2015.

"Removing 120,000+ existing wireless units from the Australian market even within existing timelines will be an enormous task and significant financial burden on community groups, schools, churches and small businesses", AWAG submitted.

Opposition spokesman for Communications, Malcolm Turnbull recognises the issue. "The problem is that you are missing a clear message that says, 'Equipment of this type will not work after 1 January 2015'", he told the Standing Committee.

While concerned that the broader community of audio users will face serious issues in 2015, the industry is also ramping up for a huge influx of sales as over one hundred thousand systems are replaced. Leading distributors Syntec and Jands have both launched websites last month to try to win the hearts and minds of confused users.

VALE NEIL 'SMITHY' SMITH NICEST GUY BOWS OUT IN STYLE

After a battle with stomach cancer Sydney's Smithy passed away, just after his 63rd birthday. He managed to get on stage at that party and play bass with many of his bandmates from some of the nine bands he was part of.



NEIL 'SMITHY' SMITH

One of those (not at his party) was AC/DC in 1974 when Neil played bass with Peter Clack on drums. Smithy touched a lot of people, aided by an abundant optimism despite being legally blind. His mate Glen Barwick attended blind school with Smithy and remembers a battle of wills between the headmaster and Smithy. 'You'll not amount to anything', the old school man said. Smithy smashed that prophecy to pieces.

The high point in his career as an audio and music equipment reseller was in Sydney at the Big Bear Shopping Centre at Neutral Bay where almost everyone in rock during the early 1980's knew him and bought or sold with him.

He didn't rip anyone off, which says it all, through an era where opportunists took every possible liberty. 'He has strong ethical beliefs' was a common topic at his wake. Also known as Deek Rivers in his last band, The Swingin Sixties, Smithy leaves sons and daughters, who can be assured their dad will not be forgotten.



AUSTRALIAN ROAD CREW ASSOCIATION (ARCA) SYDNEY REUNION IN JULY

It was hard to believe that road crew who worked prior to 1982 could network. But over two hundred of them came together at St Kilda late last year. From that reunion comes the Australian Road Crew Association (ARCA).

ARCA will next hold a function in Sydney on Sunday July 21st, and anyone who has seriously worked on the road anytime up to the present is welcome to apply for membership. An ARCA member must vouch for applicants, and a committee has final say over membership.

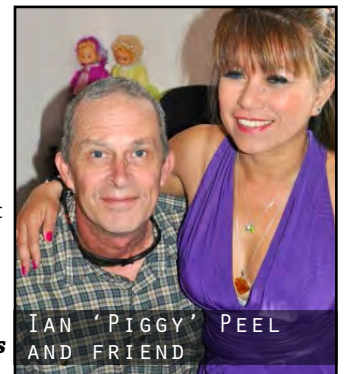
Central to ARCA is generosity of spirit, embodied by its motto: "Supporting our OWN with feeling and a Whole Lotta Love"

"It started in Melbourne because all we do is catch up at funerals", said founder Ian 'Piggy' Peel. "Now's the time to change that crap. I suppose it will be a living wake to share a bit of history and honour all those that can't catch up".

The Sydney organizing committee is Meri Took, Michael Lippold, David Quinn, Denise Turra and Anne Phillips.

ARCA published a contact book of all who attended the Melbourne reunion. Helpfully it provided a mugshot, contact details and nickname for each who attended. Thus CX can report that Pukoon, Curley, Chook, Dooch, Egg, Fatcat, Slammer, Bear, Wormy, Wookie, Dodger, Atlas, Midnight, Munghead, Wombat, Quickdraw, Fleabag, Rainbow, Stig, Dicky, Wrongway, Tosh, and Winch are all in good health.

No word on Brick, Fridge or Sloth – anyone knowing their whereabouts should contact us

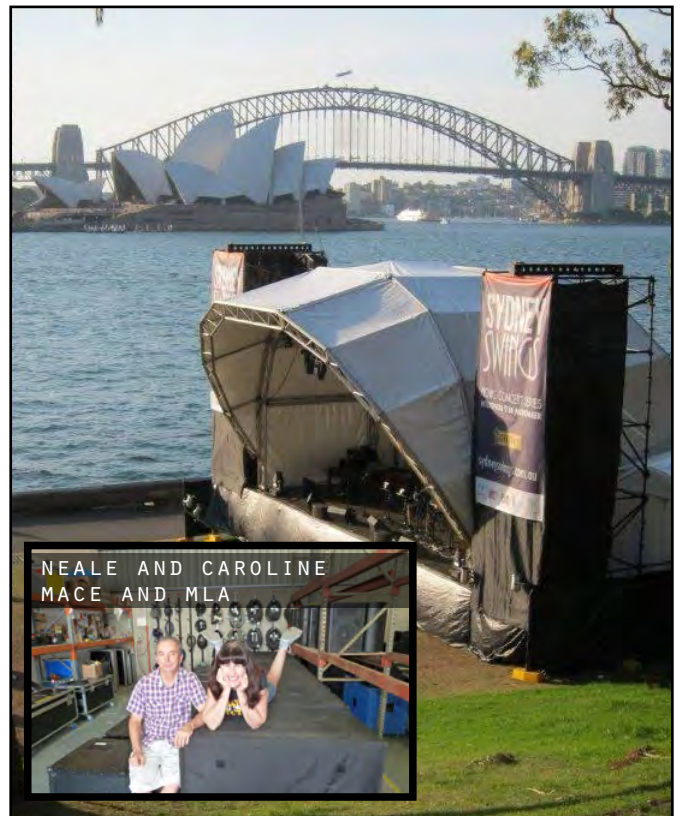


IAN 'PIGGY' PEEL AND FRIEND

MARTIN AUDIO MLA NEW COMPACT SYSTEM FOR EI

Gosford based Entertainment Installations joins a world-wide network of MLA equipped production companies (including Capitol Sound London, Delicate Productions USA and many SE Asian companies) who have settled on the new MLA technology.

MLA comes as a complete system including all cases, cabling, wireless tablet and staff trained to use the system. It provides extremely accurate beam control with inbuilt electronics controlling each individual component. Martin's optimisation software accounts for audience position and venue criteria which is the basis for intelligent, numerical optimisation of up to 144 individual acoustic cells within the array. The software calculates what acoustic source is required to deliver a consistent frequency response and SPL over the audience - as well as taking into account areas where sound is not wanted. EI trialed the system at Sydney's Botanical Gardens in January, for a series of outdoor concerts. Along with the purchase they added 16 x Martin Audio LE1500 (active 15" +horn) wedges along with QSC amps.



NEALE AND CAROLINE MACE AND MLA

SCENE CHANGE BREW UP BEER AND CIDER ON CUE

National audiovisual company Scene Change have launched their own beer and cider brand, Scenechang. They say Scenechang is a refreshing premium lager ideally suited to consumption with finger food. While creating a new beer is unusual behaviour for an AV company, the owners of Scene Change are doing it “just because we want to”.

“It’s something we’ve dreamed about doing since we started the business,” said co-founder Ian Whitworth.



DIGISTOR'S RENOVATED ARTARMON TRAINING CENTRE - UNDER NEW MANAGEMENT.

Need training in digital media creation software? Digistor have renovated their training centre in Artarmon and appointed a new manager, Sarah Palmer to head it up. Sarah joins the team with over sixteen years digital media business experience, including Operations Manager at Adimex. Courses and customised training is now offered for Adobe products; MAXON CINEMA 4D; Autodesk Smoke, 3ds Max, Maya and Mudbox; Avid Media Composer and ProTools, Nuke, Apple Final Cut and more.

“We are offering on-site, customised training for anything from optimising workflow procedures and pipelines for workgroups through to training in products such as Smoke and CINEMA 4D,” said Ms Palmer. “We can offer training in multiple tools working together like CINEMA 4D and After Effects. When a customer calls me, I can arrange with our trainers bespoke training that addresses the customer’s exact needs.”

Check out the training schedule at:

<http://www.digistor.com.au/Training.aspx>

SHORT BYTES:

GT Group was named as Nexo Distributor of the Year at the ProLight+Sound show. GT Group won the award for its launch of STM at the end of 2012, described by some who attended as ‘the best product introduction we have ever seen’. GT was also the first to bring an STM system into use in the real world, signing up Australian rental company Monitor City as an early pioneer of NEXO’s modular line array.

As part of the new ENTECH Technicians’ Lunch Series, a two hour session at ENTECH in July will bring together some of the local industries best lighting practitioners to discuss topics. Join hosts Show Technology as they facilitate a session over lunch called ‘When things go wrong’ and ‘Bulletproof production data networks’. More at www.entechshow.com.au



Greg Inglis (rugby league footballer) is one of South Sydney Rabbitohs enjoying new AT headphones, following a sponsorship between the team and Technical Audio Group. TAG boss Tony Russo pictured on right.

CX TOP 5

REDUNDANT FORMATS

1. Tascam TDIF
2. Cobranet
3. Ethersound
4. Firewire
5. Anything proprietary!

Let the flaming begin!

Email Jason Allen: Jason@juliusmedia.com

Short Technical Courses in July



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.

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MICROHIRE ANNOUNCE NEW APPOINTMENTS FIRST ORDERS FOR BRISBANE'S ROYAL INTERNATIONAL CONVENTION CENTRE

Russell Bennett, General Manager of Microhire Queensland is pleased to announce the final new appointments for their operations at the Royal International Convention Centre, Brisbane. The company also have pleasure in detailing its first round of orders for equipment to be installed as part of its overall \$3m-plus fit out of the Royal International Convention Centre in Brisbane's RNA Show Grounds. Joining Dan Hazard (Technical Services Manager) & Alan Colegrave (Technical Operations Manager) will be: Bill Hazard: Account/Production Manager, Peter Stubbs: Lighting Designer/ Operator, Mick Wade: Senior Audio Operator and Brennan Smith: Senior AV technician and Advanced Rigger.



Phase one of the new equipment purchasing project includes key vision and lighting components with Panasonic, Christie, Stumpfl, LSC and Robe all featuring prominently. Phase two will see the acquisition of audio infrastructure including digital stage boxes & accessories. The final purchases will be image blend screens, control systems, draping infrastructure and automated meeting room equipment.

CLAY PAKY SHARPY WASHES MAKE THEIR DEBUT ON THE LOGIE AWARDS

The 55th Annual TV Week Logie Awards was held on Sunday 7 April 2013 at the Crown Palladium in Melbourne, Australia and broadcasted live on the Nine Network.

On request from Lighting Director Rohan Thornton, Clay Paky's Australian distributor Show Technology rushed in the new Clay Paky Sharpy Wash 330 fixtures. The Sharpy Wash features a 6° to 50° zoom, CMY colour mixing, special colour wheel, rotating beam shaper, frost filter and a motorized top hat. Weighing in at 19kg, the Sharpy Wash is as small as its brother, the Sharpy "beam".

Rohan first saw the Sharpy Wash at the LDI show last October and he rated it the standout product of the show. "I thought they were brilliant!" he remarked. "The speed, quality of beam, quality of colour and all the features were amazing. They have great intensity, power efficiency, and of course Clay Paky colours are always fantastic. The Sharpy Wash is simply a really good, small light with a lot of tricks. It's really versatile due to its beam range and beam shaping - a true multifunctional light."

The Logies saw Rohan position the Sharpy Washes above the host set. From there, along with Clay Paky Alpha Beam 700's, they washed the stage during the musical and formed the core of the moving light rig. "The Sharpy Washes performed great, we had no failures and the spares are still covered in dust," commented Rohan. "We found some really cool tricks to do with them such as beam chases and the consistency across the rig was phenomenal. The CTO was really nice on them too."

As well as the thirty-six Sharpy Washes the rig featured eighty Sharpy Beams, sixty Alpha Beam 700's, Martin TW1's, Martin MAC Auras, MAC301's and MAC101's as well

as 220 Pro Shop LED MultipARs, GLP Impression X4's and Martin Fusion Bars.

Unusually, Rohan decided to use Clay Paky 1500 and 700 Alpha Profiles as key lights; a somewhat bold experiment that fortunately worked a treat. "Traditionally I would key light using a tungsten based profile or something like that but the problem is that graphics are fundamentally created at daylight level so we never got really good clarity on shows at this venue," he explained.

"I decided to use the 1500 and 700 Alpha Spots but most arc lights are very difficult to colour correct. I discovered that Rosco could supply Permacolor filters and thought I could replace some of the colour corrections but of course modern moving lights have fixed wheels for their fixed colours. However we worked out that we could get some cut and made to go in the gobo slots. We ended up using the variable CTO and Permacolor filters to come up with a colour temperature of about 5000 degrees Kelvin. So basically all my lectern lights, back lights were either 700's or 1500's and that allowed us to do things like have a tight lectern or if there were a lot of people at the lectern we could expand the shutters out without changing the intensity."

The main lighting suppliers for The Logies were Resolution X and PRG with Resolution X sub-hiring the Sharpy Washes from Chameleon Touring Systems. Lighting Lab and Clearlight also supplied a small amount of gear.



PHOTO: BEN CLAYDON



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Compass RMS Software

Meyer Sound Compass RMS

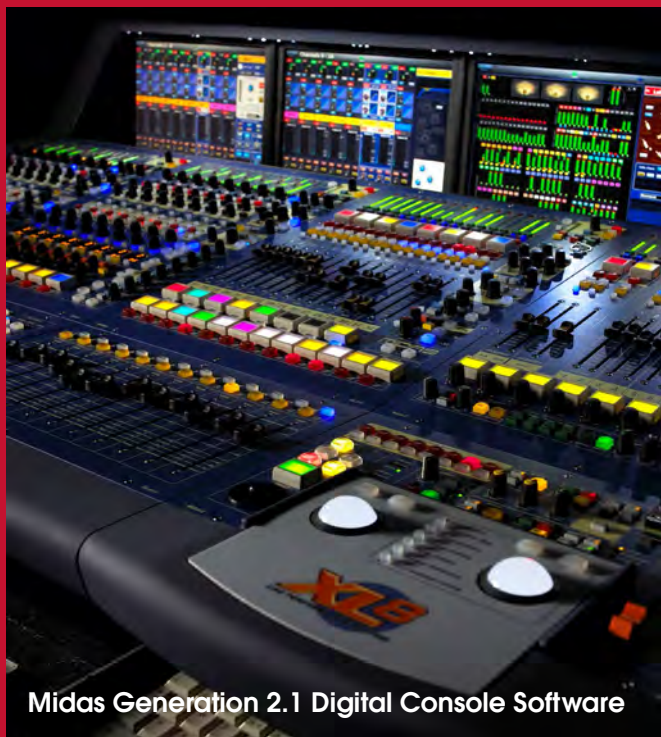
Meyer Sound has announced Compass RMS, a new hardware and software solution for the real-time monitoring of Meyer Sound self-powered loudspeaker systems. The new system will start shipping May 2013 and is backwards compatible with all Meyer Sound loudspeakers equipped with an RMS module. The Compass RMS system uses RMServer™, a purpose-built network hardware unit that communicates loudspeaker performance data over Ethernet and twisted-pair. The control interface is now fully integrated into the Compass 3.0 software, which supports both Mac and Windows. Compass 3.0 also serves as the user interface for the Galileo loudspeaker management system and the CAL column array loudspeaker.

Compass RMS users can mute, solo and ID, as well as monitor more than a dozen parameters including peak amplifier power and voltage, average amplifier power, limiting, fan speed, and heat sink temperature. Compass RMS adds the ability to automatically discover RMS-equipped loudspeakers on the network, eliminating most data entry. Using a standard router, Compass RMS can be controlled wirelessly. RMServer works independently of Compass, and can send emergency notifications via email even when Compass is not connected.

MIDAS Generation 2.1 Digital Console Software

MIDAS chose Prolight + Sound 2013 to preview the latest software for the PRO and XL series of digital consoles, Generation 2.1. The new upgrade adds a rack-full of new latency-compensated FX plug-ins and dynamics processing options to every console in the PRO series, plus the flagship XL8. G2.1 will be available as a free-of-charge download to all MIDAS owners.

New FX plug-ins include a dual-channel KLARK TEKNIK DN60 Real Time Analyser, a KLARK TEKNIK tape saturation effect, sub-harmonic generator, multi-channel input phase adjustment insert, a fifth input compressor option, ducker mode for noise gates, plus a new "transient accent" gate option and a variable presence control for all input channel compressors.



Midas Generation 2.1 Digital Console Software

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Audio-Technica Sees Red (and black, and white...)

Announced at NAMM in January and just hitting our shores now, the limited edition red ATH-M50RD pro studio monitor headphones add a bit of Optimus Prime style robot bling to your listening duties.

The M50 range of headphones are designed for professional mixing, monitoring and DJ use and up until now have come in black or white with curly cables or, for the very serious, black with straight cable.

Featuring a closed-back design, M50's employ proprietary 45mm large-aperture drivers with neodymium magnet systems and CCAW voice coils. The circumaural ear pieces swivel 180° for easy one-ear monitoring and luxuriously padded ear cushions create an outstanding seal for maximum isolation. The adjustable headband is generously padded for ultimate comfort during long mixing sessions.



All M50s are priced at \$219 RRP

Pro Studio Monitor Headphones



Avid announce Pro Tools 11

Avid announced the long-awaited 64-bit version of its flagship DAW at the NAB show in Las Vegas on April 7. The new version will be available in Australia around June and includes new, high-powered audio and video engines, 64-bit architecture, expanded metering, and direct HD video workflows. As of April 7 2013, any customer purchasing, upgrading or crossgrading to Pro Tools 10 is entitled to a complimentary upgrade to Pro Tools 11 once it is available.

New features in Pro Tools 11 include the Avid Audio Engine at the core of its 64-bit architecture, Offline Bounce for rendering mixes up 150 times faster than real time and dynamic host processing, which maximizes plug-in count by reallocating processing resources as needed.

New expanded metering features include a broad range of built-in metering standards, from peak and average to VU and PPM, plus gain reduction metering for all dynamics plug-ins on each channel.

The new Direct HD video workflows use the same engine as Avid's Media Composer and will enable users to play and edit a wide range of HD video formats including Avid DNxHD, directly in the Pro Tools timeline without transcoding.

Pricing below is in Australian dollars and includes GST:

- Pro Tools 11 software (full version) \$769.00
- Pro Tools 11 upgrade \$329.00
- Pro Tools 11 crossgrade \$549.00
- Pro Tools HD 10 to 11 upgrade \$659.00

Epson G Series installation projectors

Epson's updated G Series projectors provide advanced custom installation capabilities for corporations, higher education institutions, galleries and museums, houses of worship, and rental and staging companies in medium to large locations. Ranging over six models with RRP's from \$4899 to \$6999, there's a range of power, connection and feature options to suit a range of applications, with a maximum of 7000 lumens of colour brightness and up to 7000 lumens of white brightness available in the most powerful model.

The G Series offers a selection of advanced features such as integrated edge blending for curved and corner screens, 360-degree installation, up to WUXGA resolution, six optional lenses and connectivity options that include HDBaseT, HD-SDI, HDMI and DisplayPort connections on the same projector.

The HDBaseT connection carries full HD video, audio, network and control commands over CAT-5/6. The EB-G6900WU also has HD-SDI, which is the standard for transmitting uncompressed broadcast-grade HD video and signals. The G series is also capable of stacked 3D solutions using special polarised filters creating extra bright 3D images with low-cost polarised 3D glasses.

New and upgraded features benefiting high-end custom installations include:

- **Short throw lens: With zoom and lens shift capabilities**
- **Advanced adjustment capabilities: Includes colour uniformity and pixel alignment adjustments**
- **Lens shift lock: Prevents natural lens shifting due to vibration and/or gravity**
- **Advanced Split Screen with two digital inputs: Two side-by-side windows and three layout options; video and presentation materials run simultaneously**
- **Remote Control: Improved remote includes three user buttons for added customisation**



The new Epson G-Series are available from selected Epson resellers and dealers from mid-April

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Allen & Heath Qu-16 digital mixer

Allen & Heath has entered the small digital mixer market at Prolight + Sound 2013 with the Qu-16. Packaged in a 19" rack size and inheriting technology from the acclaimed GLD and iLive digital mixing systems, the Qu-16 offers very professional facilities at a very affordable price.

Qu-16 features total recall of settings (including 17 motorised faders and digitally controlled preamps), a high resolution (800x480) full colour touchscreen, integrated multitrack recorder, dSNAKE connectivity for remote I/O and personal monitoring, multi-channel USB streaming to Mac, Qu-Pad iPad control app, and iLive's FX library.

Standard configuration includes 16 mic/line inputs, 3 stereo inputs, 4 FX engines with dedicated stereo returns, 14 mixes (including LR, 10 aux mixes, plus 2 dedicated FX busses), 12 mix processing channels, patchable AES digital output with a further 2-channel ALT output, dedicated Talkback mic pre input and 2-Track output. Expansion options include connection to A&H's GLD AR84 or AR2412 racks via the proprietary dSNAKE protocol via Cat5, and to the recently introduced ME personal mixing system. The free iPad app provides wireless control via a Wi-Fi router plugged into the Ethernet control port.

Qu-16 is due to ship to Australia in May and carries a RRP of \$3,499



Qu-16 digital mixer

OPINION Two new digital audio consoles for two different markets at Prolight + Sound 2013 – will they succeed?

BY JASON ALLEN

Another tradeshow, another new entry into the affordable digital mixer market. This time, Allen & Heath wade in with an even smaller, even cheaper offering than their GLD, the Qu-16. At around \$3,500 with 16 mic/line inputs (plus 3x Stereo) this brings their digital offering down to the analogue MixWizard level. Other recent entries to this price and feature point in the market include the PreSonus StudioLive, Soundcraft Si Expression range and the Behringer X32. Despite variations in input channels and bus count and some connectivity differences, all of these products are now competing for the purchasing decisions of the same part of the market.

The very names Allen & Heath and Soundcraft command loyalty in their followers. Every sound tech has an opinion about which of the British originals has the warmest preamps or the best build quality, and both brands trade on this heritage. They both have users and models at the professional end of the market and this cache flows down to their smaller products. If a professional engineer finds themselves at a small club gig with a vocal PA, and the brand on the desk is either A&H or Soundcraft, they feel at home. This is not something that PreSonus or Behringer can trade on. PreSonus has a solid and well-deserved reputation from users that are crossing over from home or project studios. It was therefore a canny move by the Music Group to acquire Midas; the X32's "Midas designed preamps" and other references to that other great English manufacturer have bought its marketing into the same psychological territory.

So will the Qu-16 penetrate in to the same market as the very well established MixWizard? It depends on

how tenacious the last remaining resisters to digital are. It's the small live venue that, rightly or wrongly, resist buying what they perceive to be "complicated" products. Their fear is that the show won't go on because the operators that come through the door won't understand the gear. As digital consoles become more "analogue" and operators experience them more often at the grass roots, this argument becomes moot. Then it's all down to features for price, and digital wins hands down.

Meanwhile, at the big end of town, SSL enter the market with Live, a desk for the production market. With massive specs (see Product News) and an \$80k - \$130k price tag (depending on configuration), this is a serious purchase. Success for the very well respected SSL in this sector will hinge on riders. Has it got what it takes to get on them?

I think, yes. Avid's Venue and Profile have dominated at FOH over the last few years because of their ability to replicate a band's album live. When an engineer can take the studio product to an arena and use all of the same plug-ins, there's an efficiency and comfort factor at work that can't be denied. With SSL and its famed bus compression having powered so many hits in the studio, I can definitely see a lot of mix engineers specifying it when they are finally coaxed out of their LA studios to go on tour. It's not hard to imagine stadium-filling acts like Beyonce and Adele on the road with this desk. What it will come down to is ergonomics and reliability, which SSL are yet to prove in this format.

SSL goes Live

Legendary studio console manufacturer SSL has announced a bold leap into the live production market with the aptly named Live.

The specs are impressive; up to 976 physical inputs & outputs, with an interesting 192 full processing audio 'paths' at 96kHz. This is a flexible DSP structure in which the operator decides how those 'paths' are configured, as Channels, Auxes, Stem Groups or Masters. All processing is built into the console surface and it has a collection of I/O connectivity built into the frame. A full range of Stagebox I/O connects to the console via MADI with the potential for larger systems to make use of SSL's own Blacklight technology that carries up to 256 channels of bi-directional audio and control via a single fibre connection.

The control surface combines multiple tablet style multi-gesture touch screens with hardware control. Signal path is through studio grade SuperAnalogue mic preamps, to 24bit/96kHz A/D D/A conversion, to 64bit internal processing and 96kHz operation throughout. Live features a collection of 30 new Effects and audio analysis tools, inheriting SSL's reputation for studio grade processing.

"So many people have been asking us to make a console for live for so long and the time has come," states Antony David, Managing Director at SSL. "It has been a couple of years in the making because we like to get things right at SSL and we are very confident that we have created a console engineers will fall in love with. It is very exciting to be entering a completely new area of the industry, with a new technology platform and a fresh approach to how a live console should sound and how to give engineers a control surface that helps them deliver exceptional performances. We are really looking forward to how the professional live sound community reacts."

Live is due to ship in September 2013. Depending upon configuration prices will range between USD \$84,000 and \$130,000.



SSL Live Console

Lab.Gruppen IPD Series

Lab.Gruppen have announced a lower-priced range of amps at Prolight + Sound 2013 with the IPD Series. Promising Lab.Gruppen's usual high sustained power output, exemplary performance, and robust build quality, the new amps also come with AES3 inputs, on-board DSP, Ethernet-based networking for monitoring and control and the now obligatory iPad app. Exceptional I/O flexibility.

Neat features include an automatic switch from digital to analogue input in the case of failure and input mixing across the four inputs. At the power output end, connections are available on binding posts or Neutrik speakON.

In 1RU, the IPD 1200 delivers 2 x 600 W. The IPD 2400 supplies 2 x 1200 W, both at 4 ohms. The on-board DSP

engine is equipped with up to 40 real-time, multi-slope parametric EQs with adjustable gain, input and output delay, and both high and low-pass filters adjustable to any frequency. All setup parameters for input mixing, DSP features and limiter setting are accessible on the front panel and up to 100 user-defined presets may be stored on-board.



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Control App V2

Duran Audio launches latest version of iOS Control App

The European industry standard in loudspeakers for stations, tunnels and other near impossible acoustic environments, Duran Audio are becoming well-known in Australia after a brilliant install at Central Railway Station in Sydney.

In keeping with their aims to make installed sound systems as intelligible as possible, you can of course control and tune their loudspeaker's on-board DSP via an iOS app. Duran have used Prolight + Sound 2013 to launch Version 2 of the app, descriptively named "Control App".

The app has been designed primarily for users of Duran Audio's Sound Reinforcement range of loudspeakers: AXYS Flex, Scope, Source, Target and Beam Shaping Subwoofers. The app connects to the loudspeakers using a Wi-Fi to RS485 convertor and the new version supports multiple controllers.

Users can gain full access to the on board 8 band parametric EQ, Delay and Volume settings. In addition to this they can also switch between crossover settings and recall one of the 8 on board pre-sets.

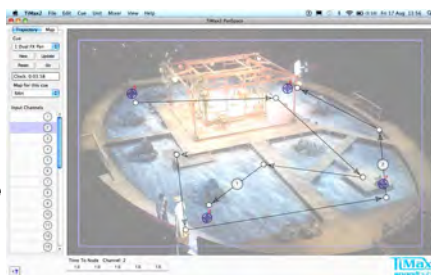
Version 2.0 of the app now allows the user to create groups of units, introduces a new XML-based project file structure and the ability to reset the volume, delay and EQ of all units.

Out Board debuts TiMax PanSpace

English company Out Board are the market leaders in source-oriented reinforcement – an audio dark art who's goal is to make amplified sound appear as though as it is actually originating from the performers themselves. Their TiMax range of products are designed to do just that, through a combination of routing, mixing, EQ, delay matrices, multi-track sound effects playback, audio localisation, spatialisation, audio networking and remote control.

TiMax SoundHub is a multichannel system matrix and playback server for theatre and opera sound, live events and AV installations comprising a scalable matrix mix engine from (16-64 channels I/O) with up to 64 tracks of audio playback in a single 2U chassis. The Soundhub enables realtime audio localisation of performers as well as 3D surround sound for effects and music.

Prolight + Sound 2013 saw OutBoard showing off the new TiMax2 SoundHub PanSpace graphical sound-effects pan programming application. Users can create multiple fully-editable pan trajectories in any Cue, which can animate multichannel audio from TiMax SoundHub's internal hard-disk or integrate with external audio and MIDI/MTC trigger sources such as QLab. Aimed at theatre and live events sound designers plus AV, museum and attraction integrators, S-Version showcontrol functions include Timeline cue programming with a variety of showcontrol Trigger and Event formats. Multitrack audio playback functions include clip editing, looping, timeslip, mix automation and archiving, plus the object-based delay-pan programming pioneered by TiMax.



TiMax2 SoundHub PanSpace

Philips Showline SL Band 310 and SL Nitro 510

The recently relaunched Philips Entertainment brand Showline showed off two new LED products at Prolight + Sound 2013, The SL BAND 310 and SL NITRO 510.

The SL BAND 310 is a rugged, compact luminaire with 4-in-1 RGBW LEDs producing 2400 lumens of output at a 23 degree beam angle. The blended colour output ensures pure colour mixing whether projecting on a surface or illuminating an audience. The built in power supply quietly controls each fixture without the need for additional power modules.

The SL BAND 310 accepts a range of industry standard beam spread accessories to adjust the default 23 degree beam angle and custom fitting barn doors are also available. Built in hanging hardware and Power-Con connectors allow for easy installation in any environment. The SL BAND 310 is available in either an IP20 or IP65 model, the latter being ideal for outdoor applications. Also available in tunable white or full colour mixing RGBW models, the SL BAND 310 delivers exceptional homogenized light output in a compact luminaire.

The SL NITRO 510 is a cutting-edge new LED based strobe luminaire that provides intense bursts of light and dynamic effects. The tightly packed array of over 1300 high power LEDs ensures maximum output and full-field, even distribution across 120 degrees. Unlike traditional strobes, the LED sources allows the potential for a continuous duty cycle with no loss in output. A unique quick-connect systems allows SL NITRO 510 units to connect together easily top-to-bottom and side-by-side. In addition, the form factor of the SL NITRO 510 matches the SL BAR 520 so the two luminaires can be interconnected providing unlimited design possibilities. Six unique zones of control and built in chases aid in creativity and simplicity. With over 68,000 lumens of output, the SL NITRO 510 rivals conventional strobes and retains dynamic looks whether washing a stage or pointing directly at an audience.



SL NITRO 510



SL BAND 310

TC Electronic

LoudnessRadar Meter for Adobe

Since FreeTV OP-59 (operating practice 59) came into effect in Australia on January 1, 2013, all broadcast content creators have been responsible for complying with the standards for average loudness it sets out while all broadcasters will reject any material that's not up to standard. While not backed up by legislative teeth in Australia, it does align with the USA's CALM Act which has provisions for fining breaches, and comes into force October 2013. As you can imagine, measuring and testing loudness just got even more important in broadcast.

In view of this new industry demand, TC Electronic has teamed up with Adobe to integrate its LoudnessRadar in the next versions of Adobe® Premiere® Pro and Adobe Audition® under a license agreement. LoudnessRadar builds on TC Electronic's LM6 Radar Loudness Meter and offers a wide range of loudness measuring tools that are key to content creators delivering for broadcast, film and internet. The software displays Loudness History on the revolving radar, Momentary Loudness on the outer ring, True-Peak clips, Program Loudness and Loudness Range in a single view.

LoudnessRadar will help Adobe Premiere Pro and Adobe Audition users confirm the content they deliver for broadcast is compliant with the standards applicable in Australia, the US and Europe. It ensures that the client does not reject projects due to loudness issues, and that the broadcaster, distributor or even creator won't be subject to fines further down the track.



LoudnessRadar Meter

inDesign BMA Series Mixer Amps

inDesign, the Australian designed and engineered brand of Commercial Audio products manufactured by National Audio Systems, has announced the release of the new BMA Series range of Mixer Amplifiers. The BMA Series comprises 4 models – BMA 30, BMA 60, BMA120 and BMA 240, with RRP's from \$215 to \$545 respectively. As the model names suggest, total output power ranges from 30W to 240W

Each model features 4 Mic/Line inputs, Master Bass and Treble Equaliser and Master Volume control. The rear panel features Balanced XLR, Phoenix and Dual RCA connectors on each of the 4 input channels. Channel 1 features a Master mute override with variable threshold and switchable 48V phantom power.



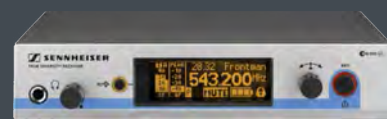
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RUTLEDGE AV – ENGINEERING EXCELLENCE

33 YEARS ON, WHAT MAKES A SUCCESS IN A TOUGH MARKET?

BY JASON ALLEN



RUTLEDGE AV IS THE UNDISPUTED MARKET LEADER IN AV INTEGRATION IN AUSTRALIA. THEIR FLAGSHIP PROJECTS INCLUDE MAJOR AV SYSTEMS INTEGRATION AT ICONIC VENUES SUCH AS THE MCG AND PERTH ARENA, WITH A SIGNIFICANT NUMBER OF BLUE-CHIP COMPANIES LIKE RIO TINTO AND BANKWEST JUST TO NAME A FEW. FOUNDED BY MICHAEL RUTLEDGE IN 1979, RUTLEDGE ENGINEERING (AS IT WAS CALLED THEN) BEGAN TRADING WITH THE FITTING OUT OF RECORDING STUDIOS AND RUNNING VENUE PAS.

As the market grew and changed, Rutledge moved with it, absorbing and mastering new technologies as they arose and applying them to new markets. The company today employs more than 250 people with national coverage that includes offices in Melbourne, Sydney, Brisbane, Perth, Canberra, Adelaide and the recently announced Darwin office.

CX visited Rutledge AV's Melbourne head office on the company's 33rd birthday to find out what's behind the workplace culture of such a successful business. Talking with everyone from the storeman to the CEO, a common thread emerges; Rutledge is constantly paying attention to what it does, measuring performance, analysing the data and implementing the improvements the analysis suggests. Though Rutledge don't use the term themselves, this business process is commonly known as Kaizen – a strategy of continuous improvement – an American concept that picked up its Japanese name after being enthusiastically adopted by companies such as Toyota, rebuilding after World War II.

One of Rutledge's recent improvements has been a branding change. The new "Rutledge AV" brand has been



THE PLENARY HALL AT MELBOURNE CONVENTION AND EXHIBITION CENTRE. IN 2009, AS A \$20 MILLION JOB, IT WAS THE LARGEST VALUE PROJECT RUTLEDGE HAD TAKEN ON.

adopted after an internal process with input from across the company. The rollout is almost complete – on the day **CX** visited, new uniforms for site technicians were just going through the approvals process. It has also manifested itself in a refit for the entrance, foyer and meeting rooms at the company’s Northcote head office. The previously staid frontage has been repainted and bold graphic elements lead the visitor through the main doors.

The foyer is the most eye-catching change – it has become both a demonstration area and showcase for Rutledge’s talents. New digital signage runs content profiling some of Rutledge’s most outstanding projects, with the signage itself an advert for one of the company’s core competencies. Three newly refurbished meeting rooms are similarly functional and promotional – all are fitted out with video conferencing facilities, designed and installed by the company itself.

FRESH LOOK

National Marketing Manager Kamila Marcinczak has been a driving force behind the rebrand and refit since she joined the company in January 2012. “We found that sales staff

often didn’t have access to a demo site” she explained. “So when it came to things like digital signage, we thought ‘why not get it installed in our reception area?’. Now when we want to show a client why it’s so beneficial we can get them in here, boot up a demo and show them the capabilities.” Kamila’s next challenge is to turn her eye for improvement on the function of Marketing itself; “It’s an audit of the entire company. We’ll be looking at every department within the organisation and working out how marketing fits in with them, looking at the processes. How do clients interact with staff here? How can we make it simpler for them? How do we as an organisation communicate with our market and engage with them? It’s all about our national messages but also supporting each office and their local marketing efforts.”

Shane Cannon, Director of Sales and Marketing, has spent fifteen years with Rutledge and has been involved with many of their projects including The Australian Centre for the Moving Image and the Melbourne Convention and Exhibition Centre. “It’s about the customer’s needs” he said. “We tick all the boxes and meet their functional



RUTLEDGE AV FOYER

requirements. It's product agnostic, it's about getting the right kit in, but that has to be supported with quality brands. We're associated with lots of quality brands and the support from those suppliers is really important to us. That way, we can make sure that the solution for the client is the best it can be."

Rutledge counts a number of national companies as its clients, which is something Shane feels reflects their strengths; "What we offer our clients is a national presence, being able to cater for their AV needs within each state. Continuity of service, continuity of products, and continuity of system design is a real benefit to our client base." Through all the technical changes Shane has seen during his tenure, one part of the workflow has remained constant "We're always tracking our performance to continually improve and position ourselves accordingly; in our sales figures, in our knowledge and abilities, in our workflows. It's ongoing."

HDBASET RULES

Speaking with Rutledge IT System Administrator Angad Preet Singh about his day, **CX** learned that Rutledge was in the midst of rolling out a new ERP System provided by Australian software success story Pronto. This is a huge task, involving in depth analysis of the needs of every part of the business, followed by implementing changes to the workflow of everyone in the company. Richard Bakunowicz, a 28 year Rutledge veteran, now in the role of Process Improvement Manager, is in charge of the project. "There's not a lot here I haven't done", he laughed. "I started here doing component level repair of audio gear and building studios with Michael Rutledge". Richard went on to work in Sales and Estimation, and also did a stint running the Canberra office. His broad experience has placed him in the

perfect position to manage the ERP implementation, with one system handling and analysing everything from finance to stores management. "We have to do it better because the market's more competitive and the margins are getting tighter", said Richard "It's all about realising efficiencies and refining."

Rutledge prides itself on staying ahead of the technology curve, so we asked Software Development Manager Ian Mulhauser what he and his team of 12 programmers saw

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A Roland engraving machine in the Custom Plates and Engraving Workshop, manufactured by Roland Digital Group. Roland DG (originally called AMDEK) was established as a separate subsidiary company of the well-known musical instrument manufacturer. The first product they manufactured was the CMU-800 Computer Music, a suite of analogue synth products that could be sequenced and controlled from early 8-bit computers. They have since gone on to become a market leader in large scale commercial printer milling and engraving machines. A wholly owned subsidiary was established in Australia in 1988.

as the technology trends in the industry. They identified HDBaseT as one of the current AV market drivers; “Just about every job now has HDBaseT in it. We’re seeing a lot of expensive devices on the market with HDBaseT connectivity that do everything, but not every job requires that. We’re looking at lower-cost ways of providing HDBaseT to our clients.” Ian also rates environmental control and monitoring as a strong influence on customer behaviour as now “people are not only considering the cost of purchase, but also the cost of running their devices.”

National Engineering Manager Peter Zieresch concurs with Ian, citing digital technology as the drivers of these benefits. “We’re rolling out digital infrastructure now but ensuring legacy technology fits into the infrastructure” he agreed. In the course of Peter’s work recently, he’s been involved in installations centred on BiAmp’s Tesira, a modular networked DSP system running on the new AVB (Audio Video Bridging) protocol.

BACKUP

Networked AV technology offers huge advantages for customer and integrator alike. In a corner of the office bearing the sign “Rutledge Assist”, service technicians that look after the national helpdesk are looking after Rutledge service contracts nationwide with James Barker, Simon Lamendin and Emil Sarlija sparing a quick chat between calls the others busily chatting away resolving customer enquiries. Rutledge Assist is an industry leading support service that offers the right level of care for every client. It operates 24 hours a day and each state has a team of technicians lead by a service delivery manager. Emil Sarlija was connecting into a courtroom system as we spoke to him. The customer was reporting a video fault, but audio was still



passing. Emil waited for proceedings to break so he could remotely access the system and go into its diagnostics. It’s not just the tech that gets Rutledge’s keen analytical eye. As all good employers know, the happiness and safety of their employees is paramount to a successful business. Leahanne King, Human Resources Co-ordinator, was rolling out a web-based OH&S induction programme the day we toured the office; “SafetyTV make induction videos about safety and workplace relations. It’s an online system that sends inductees a link to a series of videos that they watch and answer questions about. This initiative ensures that all our employees are across OH&S and the important issues relating to the workplace. The system then reports back and provides us with certificates on who has completed courses. This enables us to keep track of our employees training requirements.”

Other recent staff education initiatives have seen project managers graduate from a specially tailored Diploma in Project Management at Swinburne University. It’s this kind of staff development and care that explains Rutledge’s excellent retention rate – throw a rock in the office and you’re likely to hit someone that has been with the company more than a decade; often more than two.

As Rutledge has grown from a family company into a nationwide company, managing its operations and people has become an increasingly large task. New CEO Andrew Morrice stepped into the role in August 2011, bringing with him years of business experience, a computer science and IT vendor background and tertiary qualifications covering Computing, Marketing and a Master’s Degree in International Business. He is also a graduate of the Australian Institute of Company Directors program. His appointment has seen him focus his efforts on strategic planning and ensuring the company remains progressive.

PRESSURES

Andrew’s view of conditions in the integration marketplace will ring true with anyone working in the field. “There’s pressure on margins”, he states, “and that to me is the new climate. It’s not going to return to the ‘good old days’ of high margins. We have now got to structure our business to be low-cost through efficiencies and frugality.” Andrew explains his ideal of the “low-cost” business not as a low



ANDREW MORRICE-CEO



SHANE CANNON
DIRECTOR OF SALES
AND MARKETING



PETER ZIERESCH
NATIONAL ENGINEERING
MANAGER



IAN MULHAUSER
SOFTWARE DEVELOPMENT
MANAGER



RICHARD BAKUNOWICZ
PROCESS IMPROVEMENT
MANAGER



KAMILA MARCINCZAK
NATIONAL MARKETING
MANAGER



PAUL PARAS
CUSTOM PLATES AND
ENGRAVING



EMIL SARLIJA
SERVICE TECHNICIAN

dollar value, low quality goods and services provider, but a company that provides high-quality product and added value to its customers while improving margin through innovation and cost control. Independent quality assurance systems like ISO9001 and Rutledge's new ERP are vital to implementing this strategy.

Integration is a project based business, and as such market demand for services can vary wildly, adversely affecting any company's cash flow. Service Level Agreements (SLAs) are a regular and predictable source of income for an integrator. Converting a project sale into an ongoing service relationship is a desirable outcome. "Support, maintenance contracts and SLAs are a fundamental part of what we do" continued Andrew. "We're building the services

business. We've got some great relationships with top tier organizations like Rio Tinto where we've implemented major projects for them and gone on to support them long term." Andrew's task now is, in his own words "to make a great company even better. Everything we do is done with commitment to excellence, and a commitment to getting the engineering right". Continuous improvement for Rutledge and Andrew involves taking a proactive approach to market developments and customer relationships. "We'll keep learning and make sure that we're the company going to our customers and saying 'You need to be considering this' as opposed to the customer banging on our door and asking 'What are you doing about this?'".

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DOG

DAVID GRANT

"GO HARD OR DIE TRYING"

BY MARK TAYLOR

IF THE PHONE RINGS AND IT'S DAVID GRANT ON THE LINE DROP EVERYTHING AND PAY ATTENTION.

He's pushed tens of millions of dollars into our industry and changed if not created the various ways we do business today. With a career spanning 26 years DG is arguably our biggest individual financial contributor. And, not just here on our home turf. DG is an internationally recognised producer. He's been onboard with the Olympics, summer and winter, since the Atlanta games in 1996. Do the maths. We met in the early 80s at the Regent Theatre working on "Peter Pan" on the lighting crew under LX head Malcolm Savage. At that time DG was saving money to go to uni while at the same time working for Rob Nichols at Strand hire polishing Cinemoid colour filter with Mister Sheen in time for the next rental. He worked dome or lighting operator for shows at the Theatre Royal and the Eros Cinema to pay the bills. Later he'd work in the lighting department at Ch 10, be the breakfast announcer on 2 SER and organise theme parties for his uni mates.



He's busier than a bee hive after taking a year 'off' to reconcile the clients he wants and the crew he'll keep. Just getting this interview took weeks. His office is the old Festival Records boardroom and the staff are in separate accommodation nearby. He's also got his sights on Las Vegas and China as locations for shows.

MT: How did you get into events?

DG: I was working at the Bicentennial as a sports journalist. People started asking me to organise parties and find them crew. The business next door was run by Deeta Colvin who was doing PR for Contreau. I did the first Contreau Ball in 1988 with a grand budget of \$900! That was the birth of something that literally took off and flew. By the time the Olympics hit Sydney in 2000 we had 20 people in the office.

MT: How many events have you done?

DG: When we had our 25th Anniversary last year we'd counted 3,500 up to 2006. So I'd guess we're up over the 4,000 mark by now. Prior to 2000 we were running 220 events a year. During the Sydney Olympics we did 340 events in 17 days across 9 venues. It does come to a point where one has to stop and take stock. We limit ourselves to 50 a year now.



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MT: What is it that makes DGSE so popular?

DG: Look, it's about the way we go about it. We're sort of control freaks. We're labour intensive. We pick people and companies and we do it all. We'll design everything from the set, the cozzies, the flowers, the table look – you know – everything. And then we put it together. We'll use Norwest or sometimes Coda for the audio, Chameleon for the lighting, TDC for the video, Geoff Newey at The Look for the drapes, and Staging Rentals for the sets. Everyone knows what we want and we give it all we've got every time.

MT: What keeps you going?

DG: A variety of things: creative freedom; trust from our clients; it's never, never boring and the money is pretty good. We do a lot of work for luxury brands and frequently the audience might be out at numerous events during the week so we need to be on top of it creatively and avoid repetition. We have to pace the looks of our shows. If we need to spend 50 hours talking about the look of the lights we will.

MT: What's the biggest job you've ever done?

DG: Torino 2006 Winter Olympics was the biggest and hardest. It was set in a renovated palace. The locals were pissed off that a small pack of Australians were working on their turf. They thought they should have been doing it. They just didn't get it that we do this all the time. Oh and Beijing took a year to work out how to get it done. And then there were more dramas and corruption ...

MT: And the best?

DG: (laughs) They're all the best! No, the best are proper theme parties where the audience really gets into the theme,



dresses up, has a wild time and our work makes it go off. It's not about huge budgets it's about the quirky ones when you wonder if it's going to work and you pull it off and it's exciting for the audience. I like edgy, risky jobs and I'm always prepared to toss the run sheet out mid show and improvise.

MT: The worst?

DG: We had an event at Adelaide Zoo on a lawn between the Lion and Tiger cages. Everybody arrived and the sprinklers fired up and everyone got drenched and the animals went berserk and it was like being on the set of a horror movie. During one show in Alice Springs the kitchen caught fire which started a brush fire at the same time a performance was on. Fortunately the fire died out just behind the artist and the audience thought it was a brilliant effect. A stuntman fell out of the roof and landed on Sonia McMahon during a Contreau Ball. During that event at Tumbalong Park where that fellow tried to assassinate Prince Charles the fireworks went off and set fire to a giant Australian Flag. We had firework shells with little Australian Flags inside which got picked up by the wind and landed on the roadway overpass and caused a 7 car pileup. Oh that was such a fun day (laughs).

MT: Who are the people you admire in the industry?

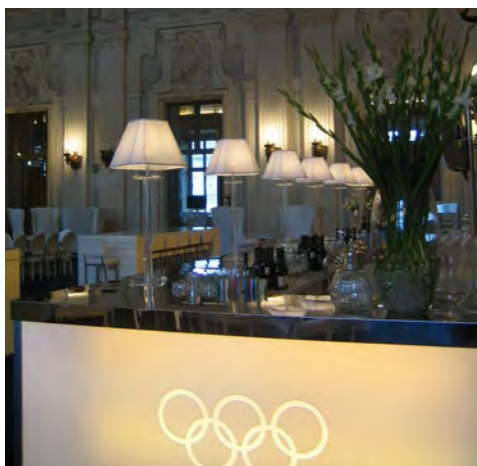
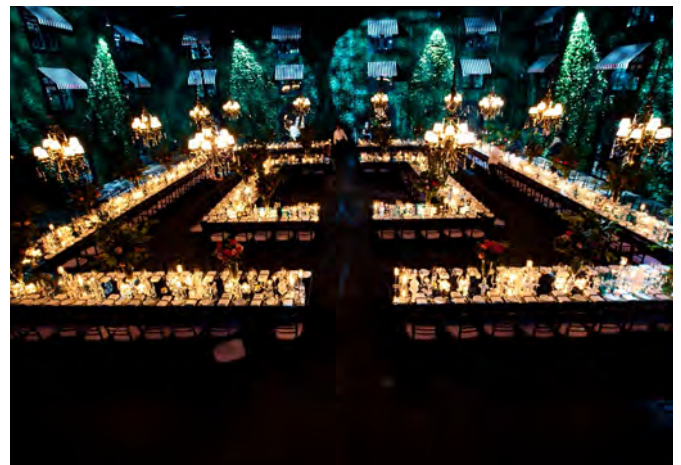
DG: Norma Willis R.I.P the mother of modern event catering; Clifford Wallace R.I.P. for starting the first event staffing business; Peter Rix for his astounding transition from a roadie to running the biggest events company in Australia; Michael Hassett from TDC and Tony Davies from Chameleon for developing two truly amazing and innovative businesses; Katerina Pitsikas and any other young people, especially women, who have the talent and drive to get out there and start their own business in events.

MT: What words have you for the younger members of the industry?

DG: Don't be like the 90% of event companies who just go to a one stop shop for everything. That's laziness and lack of imagination and the outcomes always look the same. It's bad for the industry as a whole. If that's the best you can do consider driving a cab.

MT: Your personal credo?

DG: Go hard or die trying. You've got to give it everything you've got. Follow the strong, trample the weak. (laughs) Maybe you should leave that bit out...



THE MILL REPORT

I BROKE A NAIL!

NOT ALL RECORDING SESSIONS GO TO PLAN. THIS MONTH AT THE MILL I'VE BEEN TRACKING A VARIETY OF INSTRUMENTS... INCLUDING A NEW PIANO THAT ARRIVED ONLY HOURS BEFORE A RECENT SESSION STARTED. MEANWHILE, WE WERE SUPPOSED TO BE RECORDING AT SING SING...

BY ANDY STEWART

Well, what I can say... this month hasn't gone to plan at all. In the last issue of CX I was banging on and on about the benefits of tracking a well-rehearsed band in a big studio...

In the spirit of practising what I preach, my plan was to take the band I'm currently producing into Sing Sing (Melbourne) and track the bulk of their album quickly and efficiently in that studio's hallowed halls. What I hadn't anticipated was that the guitarist of the band would be beaten up in the street outside a nightclub, and devastatingly – for the record at least – suffer, of all things, broken fingernails! (Presumably from scratching his attacker like a cat.) It just goes to show... planning an album production has its fair share of unpredictability.

No manicure was going to resolve this disaster either. I even suggested fake nails... you know, extensions. But apparently they're no good for guitar players, or so I'm told. So last week I rang up Sing Sing and broke the sad news... "Yeah, unfortunately we have to cancel because the singer/guitarist has, um... broken fingernails." It was the worst excuse they've ever heard I'm sure.

Anyway, plans have changed and tracking has already taken place down here at The Mill on the band's *other* album – confusing I know... they have two on the go at once you see. Overdubs have been going well and, as it turns out, the singer/guitarist is pretty much back to full (fingernail) strength, give or take the occasional complaint: "Sorry Andy, that take was crap... don't forget I was beaten up in the street the other week, and my fingernails are still a bit short..." blah de blah blah...

RECORDING VOCALS & ACOUSTIC

What we've been recording a lot of this week – ironically enough – is vocals and acoustic guitar simultaneously. This is always a preferable musical choice if the artist is capable of pulling it off. Sadly, countless albums no longer seem to be tracked this way (mostly to the detriment of the performances), but not for the obvious reasons you might imagine. Too often engineers push for the separate tracking of vocals and acoustic guitar, citing this: "To help with separation and spill, and to allow the artist to focus on his or her individual performances."

Fair enough. Sometimes you can spend all day getting half way to nowhere recording both parts at once. But sometimes there's a more disingenuous undercurrent behind this push... because the engineer is unsure about how to record both parts at once, without the sound going down the gurgler.

"I've bought a new upright (ex-pianola) called Randal, which has had lots of restoration work done on it and is sounding beautiful... Put it straight to work four hours after it arrived!"



Neumann U47Fet/KMS104 combo

WHAT! TWO MICS ON THE VOCAL AS WELL? YEP, I'VE BEEN USING TWO MICS ON VOCALS LATELY: NOT TO USE IN COMBINATION, BUT RATHER TO INSURE AGAINST THE U47 HAVING A 'MOMENT' - I.E. GETTING NOISY OR POPPING - AND TO HAVE THE CHOICE LATER DURING MIXDOWN.



Spaced Pairs

I USE SPACED PAIRS (NOT TWO IDENTICAL MICS) REGULARLY ON ACOUSTIC GUITAR; IN THIS CASE AN SE T2 AND AN OKTAVA 012. I FIND THIS COMBO WORKS WELL AND SOUNDS GREAT MOST OF THE TIME. IF I RECORD A D.I. AS WELL, THAT GOES UP THE CENTRE OF THE STEREO IMAGE.

TWO TAKES FOR THE PRICE OF ONE

If you're unclear about how to record a simple acoustic guitar and vocal performance without it sounding thin and full of spill from the two instruments, don't despair or think you're alone. Read on and I'll attempt to shed some practical light on the matter. The technique I'll offer briefly here is not hard, provided you're clear about some basic pitfalls. From previous experience I'm all too painfully aware that the results of recording both the main vocal and acoustic guitar can sometimes sound bloody awful. I've made at least one record in particular where no matter what I did later during mixdown, the result sounded thin and horribly comb filtered. The problem lay in the mic placement. Everything seemed fine and the mics themselves were great - a Neumann U47, KM84s etc - but problems arose when I couldn't really monitor the setup. We were recording in a beach house and the 'control room' was a tiny spare bedroom right behind the performance space. But this was no real excuse... just part of the problem. Basically, I just didn't understand what it took to get it right, and no amount of digital manipulation could repair it later. It was very disappointing because the takes were really great. There were two significant reasons why the outcome wasn't up to scratch that day: not enough sound was captured, and my phase relationships were all screwed up.

PHASE ONE

If you want to record vocals and guitar as the centrepiece of a song, or if indeed that's all the song involves, phase coherence is the key to your success. I'm lucky here at The Mill to have at least two phase meters permanently on hand to help me fine tune phase. If you don't have one, and you're recording regularly, I'd strongly urge you to get your hands on one. Phase scopes, Goniometers, Jellyfish meters, Phase meters... call them what you will. Probably the simplest is a phase meter, which looks like a VU, only its needle swings right when a sound is in phase, and left when it's out of phase. Of course the best phase meter is your hearing don't forget.

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STEREO GUITAR/MONO VOCAL

My preference is usually to record an acoustic in stereo, particularly if the song has no intended overdubs. Mono capture of the acoustic guitar is fine too if that's your preference. Some engineers assert that it's best to record the acoustic in mono to simplify the phase relationships of the mics, and they're right in many respects. To my ear, however, it just doesn't sound as good in mono. I'd rather work a little harder to get things sounding great in stereo than go with mono simply because it's easier. To me it's a bit like riding a bike... I find it easier to balance on two wheels than one. Anyway, cutting to the chase...

CAPTURE THE LOT

Does the guitar you're recording have a D.I. output? By that I mean: can the guitar be plugged in via a pickup of some kind? If so, don't waste the opportunity to record it. The D.I. is immune to spill and can be important to the overall outcome. Plug that into your best D.I. and record it onto a separate track. (I often record a D.I.'d acoustic through an Evol Audio Fucifier to give it a bit of distortion, faux tape saturation and grit... they're très cool.) If the guitar lacks a direct output, do yourself a favour and go buy an LR Baggs pickup... preferably the passive one (active is fine too). As a producer/engineer worth his or her salt, you should already have one of these for just such an occasion. (Most notably, we used this setup to great effect recently on Paul Kelly's



“A PHASE METER LIKE THIS ONE IS ONE OF THE BEST TOOLS A STUDIO CAN OWN. WHEN A PHASE METER HAS STEREO INFORMATION PASSING THROUGH IT AND IT LEANS TO THE LEFT, THINGS ARE GETTING RANCID WITH RESPECT TO PHASE. A GOOD STEREO IMAGE SHOULD SEE THE METER TRIMMING HEALTHILY TO THE FAR RIGHT.”

old Martin during the tracking of his new album, *Spring and Fall*.)

Next, set up your favourite vocal mic, and get that functioning with your preferred vocal chain. Position it so the artist can sing into it without being pulled away from his or her natural guitar playing posture. If you have a mic that can be switched to figure-8, try using that polar pattern and point its strong null directly at the guitar to minimise spill from the acoustic into the vocal chain. Sometimes it works; at other times the figure-8 pattern lacks focus. Once the artist is settled into position (sitting or standing), set up a couple of mics either as a coincident stereo pair placed in an X/Y configuration, or further apart (A/B) so that one is pointing at the body of the guitar and the other is picking up more of the hand across the strings. Importantly, do your best to position the mics so they're equidistant from the guitar. That way your outcome will be far more phase coherent than if one were further from the guitar than the other. If the guitarist tends to move around a lot, you might find the X/Y configuration works better than the 'individual stereo' mic setup because it effectively occupies only one position in space. The latter may start to swoosh and become phasey in response to too much movement. This is where a mono mic setup works well; it's immune to such phase anomalies simply because it's a single mic. (The swooshing sound is only generated by the *difference* between multiple mics.) But hey, provided both stereo guitar mics sound good individually, as well as within the overall setup, one can simply be muted during mixdown if there's a problem.

ONE MORE THING TO CHECK

Once you're fully setup, use your new phase VU meter to help ascertain good phase coherence... it should swing strongly and confidently to the right as soon as the performance starts. If it doesn't, you've got phase problems that need rectifying before you proceed further. If you don't have a phase meter, record a bit of the song into your DAW and investigate the waveforms to see that the two mics on the acoustic in particular aren't looking too misaligned with one another. The other thing that can be checked at this point too is whether the D.I. sounds out of phase with respect to all the mics. Unlike their positions in physical space, however, the D.I. can be adjusted later without too much drama, so for now, mute it if there's a perceived problem and check your phase again. Keep adjusting the mics until your phase meter swings hard and fast to the right.

Once you've recorded a take (or test chorus), listen back with the two mics of the guitar panned about 75% left and right, place the D.I.'d sound and vocal mic up the centre and you should have a strong, clear and versatile tracking setup that's ideal for mixing.

More on phase next issue!

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

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20,000 attend Easter Festival Toowoomba opens up for Easterfest

BY JULIUS GRAFTON

EASTERFEST IS A THREE DAY MUSIC FESTIVAL THAT TAKES OVER THE LARGE CITY OF TOOWOOMBA, INLAND FROM BRISBANE. IT IS HELD OVER EASTER, AND IT IS A CHRISTIAN FLAVOURED EVENT WHICH MEANS ALL THE USUAL MUSIC FESTIVAL FEATURES, LIKE TENTS, STAGES, EXTREME SPORT, CARNIVAL RIDES AND CONCESSIONS, BUT NO BEER.

THE FESTIVAL BRINGS AROUND TWELVE MILLION DOLLARS TO TOWN OVER EASTER. OTHERWISE THE CITY WOULD BE QUIET, AND THE CRIME RATE CONSTANT. WHEN EASTERFEST COMES IN, CRIME MOVES OUT.

The other thing to note is that Easterfest is the biggest and most successful event of its kind, despite missing out on the revenue from booze. It runs literally on faith and the smell of an oily rag.

How oily? Director Dave Schenk doesn't say, but CX estimates ticket sales of around \$1.5 million, with other revenues putting a very large event at \$2 million – which would just about pay for the site costs of a Big Day Out.

A lot gets done. 1,000 artists perform. 20,000 people come together. A few nutters get left outside with their signs and noisy proselytizing. Fun is experienced. The local Police and security industry rejoice since the influx drives out the small troublemaker component in this beautiful southern Queensland city perched on top of the Great Dividing Range.



DIFFICULTIES

Easterfest started because one church guy, Paster Ian Shelton from Toowoomba City Church started to gather and unify his colleagues, almost all other church leaders in the town, for regular prayer meetings in the late 1990's. That they met this way is testimony to community spirit.

The Church leaders all workshopped the concept of a youth event to celebrate Easter (which all Australia stops for) and took the idea to the Chamber of Commerce and the local Police. Both were supportive, so the first event ran slap dab in the middle of town - at Queens Park.

"The first year we lost money", says Dave Schenk. "We met after and debated, do we kill it, or do we all suck up the loss and put more in? We put more in. The result speaks for itself."

The Festival is a not-for-profit organisation with a few full time staff led by Schenk and a very large number of over 1,000 volunteers. Many are technical crew, some of whom

stay on site in caravans. Indeed the infrastructure (there are 5,000 people camping on site) is of military dimensions.

Then there is the timing. Easter falls on different dates, usually this means in turn hot heat such that tents become ovens, and rain which became catastrophic in 2011.

One tent failed after it was evacuated, such that the aftermath was like 'an atomic bomb' on the installations and production equipment within.

That disastrous weather sent a lot of punters home but many stayed on and populated the growing number of breakout venues within the city centre itself. These former and current nightclubs, operating pubs and even the gorgeous Empire Theatre itself (a theatre icon loved nationally) ran side shows.

Side shows in venues that are walking distance makes Easterfest unique, and connects it to the town which would otherwise be very quiet over Easter. Schenk explained that some artists are prepared to play a side show as well as the main Festival, and the venues supply production.

Ticket sales took a hit in 2012 following the previous year's bad weather, but seemed to have recovered for this years event.



DAVE SCHENK
FESTIVAL DIRECTOR





DAVE WATSON (PAVT) WITH PHIL CHALLACOMBE



STEVE KNIGHT

PRODUCTION

Dave Watson is close to Schenk and has been involved in many Easterfest's until this year as Production Manager. He stepped back from that all consuming role this year, with Chris Haines jumping into the role. Chris works at Hills SVL during the week. Like many he gives time to a good cause.

Queen's Park in Toowoomba is 26 ha – and located almost at the centre of the CBD. Easterfest fits like a glove, with camping on site for 5000 people. There are multiple stages, ranging from the Main Stage for 10,000 people outdoors, through several tent stages – largest of which is the EAW Big Top.

Sydney based production supplier Cairellie provided the lion's share of production, on a very favourable deal predicated on Christian values. Cairellie director Steve Knight told **CX** he regarded Easterfest as a nice break after a busy summer. He was looking after FOH audio at the main stage, running through a d&b audiotechnik J series PA.

The EAW Big Top was handled by EAW distributor Production Audio Video Technology (PAVT) who chose to sponsor the audio production as a showcase. With up to 4,000 punters in the tent, it was crystal clear that good sound had a brand name – with EAW signs and spoken thanks given as often as possible.

Dave Watson from PAVT is probably the foremost figurehead in Church Production circles, stemming from his ground breaking work across the Hillsong

Church constellation until 2007, and extensive touring and church consultancy since. He took up a full time role at PAVT several years back, and often gives lectures and tutorials to disparate church groups from all denominations across the region.

The Big Top was Dave's playground, and a little EAW lounge off to one side provided a facility to talk with people interested in learning more. With Dave everything is a very soft sell – he knows the nuances of the church market, as he has grown up within it as a practicing pastor.

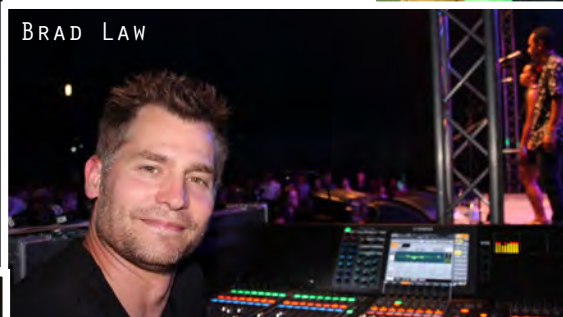
Everything audio including the crew was supplied by Dave.

BIG TOP SOUND

Dave chose to showcase the EAW KF740 line array, along with 12 x SB2001 sub woofers. This combination worked incredibly well within the huge tent, especially given council have a 95db(a) SPL limit at a point 30 metres from the stage.



JIM MONK



BRAD LAW



FESTIVAL PRODUCTION MANAGER CHRIS HAINES - DAY JOB AT HILLS SVL



MATTHEW FORDHAM





To enforce this, they had installed a padlocked noise logging monitor, and conducted walking checks inside and outside the tent.

Dave had the subwoofers arranged in a cardioid mode, which amazingly steered the low frequency energy into the middle of the tent. Walking the periphery you felt the low end bleed off, and at the side entry it just sounded like a muted full range PA. The directional control was everything.

PAVT sponsor the whole system, which means Dave has to source a variety of components (like mixing consoles) above and beyond what PAVT distribute. He was thankful to Yamaha for the loan of a CL5 mixing console, and the monitor console was sourced from Coda Audio.

Big Top was a hard working stage – starting at 9am for a church service, and moving through various acts and shows until midnight. The day we visited it was mercifully mild outside and nice inside. Dave talks of sauna-like experiences, depending on when Easter falls.

CX was there for a few acts, including Canadian band Newworldson. They sizzled, with brass and a bluesy twist of rock. The band were one of a number of headline acts at the festival, including Fourtunate.

MAIN STAGE

Sydney based Cairellie supplied their d&b audiotechnik J series PA, along with a Digico SD8 and an Avid Profile digital console at FOH. Monitors were via a Yamaha PM5D, and featured Sennheiser 2000 ears.

Steve Knight from Cairellie says that they were invited to tender for audio after the festival faced noise intrusion issues. The d&b system is carefully focussed to virtually roll off at the top off the hill in front of the outdoor stage.

Lights, projection and the LED screen were supplied by Brisbane Concert Lighting, who have supported the festival since its inception over 15 years ago. Tim Missenden told **CX** that the lighting system was designed by Ashley Neuendorf, and featured Martin movers along with some older Strand conventionals. The projectors were Epson 7k HD units.

Cairellie also supplied audio at the third largest stage, in the Palace tent. This was a ground stacked V-Dosc system cross hired from Norwest Productions and driven from a Profile desk with a Yamaha PM1D console at monitors. Brisbane Concert Lighting supplied this tent as well.

Departing the town, it was clear that without Easterfest the various businesses in town would be all but shut over Easter. Instead they were full of people – and that's what a properly run festival can do for a town.



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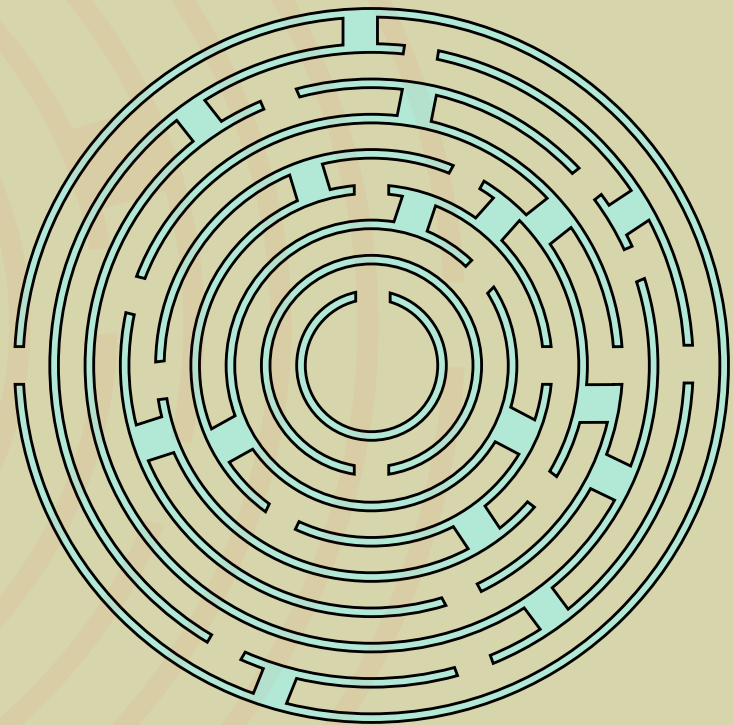
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INSTALL ADVISOR

HOTEL BALLROOMS

BY JIMMY DEN- OUDEN



CABLING INFRASTRUCTURE

THE HOTEL BALLROOM IS CALLED UPON TO PERFORM MANY FUNCTIONS – EVERYTHING FROM WEDDINGS TO CORPORATE SIT-DOWN DINNER EVENTS. WHEN WE TOUR THE CX ROADSHOW AROUND THE COUNTRY THE MAIN THINGS WE'RE LOOKING FOR IN A VENUE IS EASY TRUCK ACCESS AND PLENTY OF POWER. MOST CLIENTS NEED MORE...

Establishing safe paths for temporary cabling is often forgotten during the design phase of venues. Venues like the Sydney Entertainment Centre have a sizable channel which runs the entire perimeter of the venue, with removable covers over the entire length of it. Installing such a channel in hotel ballrooms is an incredibly smart and practical decision, but often difficult where slab floors are used, and virtually impossible to retrofit. If you can get involved in the design stage of the venue early enough, put the idea forward.

If a cable truck can't be installed, think about the places where temporary cabling is likely to become a problem. It's likely to be any time it crosses an entry or exit door to the room – emergency exits and catering doorways are especially troublesome. If you can't go under the doorway, you'll need a way to go over it. Fanciful architraves look very nice but are virtually useless for attaching cabling to. Extruding the architrave with a channel behind it not only gives visiting production supplies a safe cable path, but also allows them to avoid plastering the room with gaff. Safe cable paths will always be needed for some applications, but many users

requirements can be satisfied with a well thought out in-house cable infrastructure.

Installing some video, audio, DMX and data lines might not seem like a huge deal, but if it's done without a good understanding of how the venue is to be used then such facilities are likely to go unused. One solution doesn't fit every application, so take the time to discuss with the venue things like where performance spaces are likely to be, where rigging points are located, and likely locations for ops positions. Projectors need video feeds, consoles need power, and crews need comms. OB trucks will need a path to get cables into the venue – nobody ever seems to remember that!

Ideally your venue will have a suitable array of cabling running to appropriate areas. Plenty of audio tie lines to staging spaces and ops positions. Video too. DMX runs to the stage and rigging points. Video tie lines to projector rigging points, stage, and ante rooms where they exist. Plenty of 40A three phase outlets wherever dimmers, distros or amp racks are likely to land. Data runs everywhere. The number and type of signals

it's now possible to feed down an Ethernet cable is mind boggling – audio can be multiplexed, video can be encoded, and DMX can run as Artnet. If you install no other type of cabling into a venue, install data cable. It might make the signal transfer hardware more expensive, but a good tech will be able to get whatever signals wherever they need to get them over Cat5 or Cat6 cable. Install at least twice as much data cabling as you anticipate is likely to be needed. Guaranteed someone will find a use for it.

Use decent cable. There's no point installing some crappy low bandwidth video cable in an age where HD-SDI is a common format. If you anticipate high bandwidth will be required, consider adding some fiber runs into the mix.

CLIENTS
NEED
MORE...

Remember that not everyone will have the budget to bring fiber head-ends, so leave some copper in the mix. Look at specifying options like floor pits for power and patch points – these can enhance the safety of cabling and overall tidiness of an installation. Wherever the patching ends up, it needs to be accessible and it needs to make sense.

INSTALL AT LEAST TWICE AS MUCH DATA CABLING AS YOU ANTICIPATE IS LIKELY TO BE NEEDED.

Terminate the patch points to a central location, accessible to visiting crew. Label every patch point clearly both in the room and at the patch bay. Draw a map of which points land where if it helps make the patching system more user friendly. The same applies for lighting power distribution – if you're going to install a patch system then make sure it makes sense at both ends. It shouldn't be a battle to patch a fixture into a point, then connect the other end of that point to a dimmer. Somewhere nearby the patch rack is a good place for room circuit breakers too if you can swing it.

CX SUGGESTS:

Penn Elcom make an array of rack frames and enclosures. Their contractor range is available in sizes from 12 to 35 RU in height. Optional accessories include lockable front and rear doors, as well as a caster base.



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JANDS HPC dimmers are ideal to serve both dimming and hot power requirements, with Air Gap technology allowing them to switch between these functions.
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MEDIORNET COMPACT

Neutrik make chassis mount connectors for virtually every type of signal encountered on venue patch bays. D series connectors form the footprint into which many other Neutrik connector variations also fit. www.neutrik.com



...IT'S IMPORTANT TO PAY ATTENTION TO WHAT HAPPENS WHEN THE WALLS SLIDE INTO PLACE AND THE ROOMS BECOME SMALLER.

such. Installed audio and video tie-lines between the two locations will make for tidier runs between lectern / stage and ops areas.

What type of PA is appropriate for the venue will depend on the intended majority use of the space. In-ceiling speakers are unobtrusive and can provide quality distributed audio for speech or background music, while conventional speaker boxes may be required for more demanding applications. Either way, it's important that the systems in each room should be able to automatically link together when the rooms are joined. Ideally this should happen with no specific user intervention required, and indeed there are many excellent matrix mixing zone control products which allow this. Perhaps the simplest way is to use a reed switch attached to the movable wall, tied into a GPI on the matrix system which then recalls a "scene", or controls a routing crosspoint. Or both.

Assuming your room control system has fairly open architecture, the simplest way to do this is to virtually generate a matrix mixing block for each area to mix mic signals. Then, create an additional room mixing matrix block in-line with each of these which can take the output from both rooms mic mixing blocks. Then just switch the second input on or off as the walls open or close. Written down this sounds confusing, but see the attached diagram and it will all make sense. I drew this in Q-Sys Designer since I had it handy at the time. Linking more rooms is just a case of more complicated routing. You may also want to gang together the operation of any control systems, or alternatively designate one panel the master and disable the rest. Best figure out what the venue requires, and then do that thing.

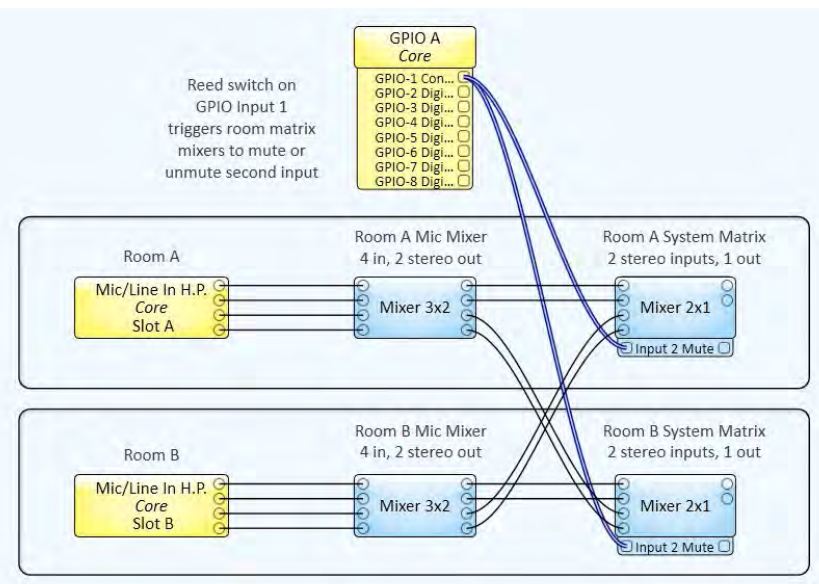
HOW MANY ROOMS?

HAVING AN ENORMOUS BALLROOM IS GREAT, BUT NOT EVERY CLIENT WILL NEED THE WHOLE SPACE. COMMONLY HOTELS HAVE MOVABLE WALL SYSTEMS THAT ALLOW LARGE SINGLE SPACES TO BE BROKEN DOWN INTO SEVERAL SMALLER ONES, THUS SERVING THE NEEDS OF SMALLER CLIENTS.

When installing sound systems into such spaces, it's important to pay attention to what happens when the walls slide into place and the rooms become smaller. This starts at inputs – each room in its smallest mode should be equipped with sufficient mic / line inputs to allow basic sound reinforcement and playback. Many applications such as conferences won't require a dedicated operator, just a mic or two for speech. Probably the best option for these is to install a wallplate near the intended lectern location including a couple of mic inputs for lectern mic and laptop connection (via a DI box). These inputs may be tied via a centralised matrix mixer directly to the room PA system. A computer video input plate should also be provided in the same spot, with scope to easily route this to a projector or other display.

In addition to this, stereo line inputs at the other end of the room will allow for an ops position with a mixer inside the room. This will cover more complex applications where an operator is required for playback, slides, and

ROOM COMBINING SCHEMATIC



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MEETS OR EXCEEDS:

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/NZ 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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CX SUGGESTS :

The QSC Q-Sys platform is ideal for applications such as room linking as outlined above, as well as far more complex scenarios. Distributed I/O capability allows for amplifiers and sources to be located in each room, with just an Ethernet cable linking them back to the system processing core. www.qsc.com

APart Audio make a range of surface and flush mount speakers suited to professional applications. The CM1008 is an 8" ceiling speaker with a 1" silk dome tweeter – it installs using 3 screws and has a nominal impedance of 8 ohms. www.apartaudio.com



APART CM1008

Audix MG12, MG15 and MG18 are professional miniature gooseneck condenser microphones designed for applications such as podium, presentation, meetings and teleconferencing. The MG mics are designed with a uniformly controlled cardioid polar pattern, helping to isolate the speaker from ambient noise.

www.audixusa.com



AUDIX LECTERN MICS

LIGHTEN UP!

OWING TO THE WIDE VARIETY OF EVENT TYPES HELD IN HOTEL BALL ROOMS, IT'S IMPORTANT THAT ANY INSTALLED SYSTEM IS FLEXIBLE ENOUGH TO SERVE A RANGE OF NEEDS. THIS APPLIES FOR BOTH CONVENTIONAL AND INTELLIGENT LIGHTING SYSTEMS.

Having some fixed conventional lighting in place is a great idea if the room has fixed configurations in which it is regularly used. If there's always a stage and a lectern in a particular position, it makes sense to be able to light it without needing to bring in additional gear, or a scissor lift to rig it. In practical terms, either tungsten or LED is a valid choice. We've discussed the energy, heat and maintenance savings of LED fixtures ad nauseum, but there are additional factors to be aware of; tungsten fixtures can be connected to room lighting dimmers, while LED fixtures will usually require a dedicated control signal – usually DMX512.

This isn't a big deal, most lighting systems which run proprietary protocols have DMX bridging hardware available. Correctly implemented this can enable venue function staff to set lighting states for presentations and such, all with a simple button press on a wall plate.

One of the most common functions is the sit-down dinner – for everything from corporate launches to weddings. If you've ever been to a really dark restaurant you'll know how frustrating it is when you can't see what you're eating. Room lighting needs to accommodate dining as well as a range of other states such as presentations involving projection. Too much room lighting spill onto screens will wash out visuals, effectively diluting the visual content. When selecting fixtures consider beam angles, and think about how the fixtures will be split up into different zones. Clients are more likely to make use of in-house screens if they look good.

Finally, consider noise floor. Fixtures that require excessive fan cooling will generate some noise, and when used in sufficient numbers this will be audible in the room. For noisy functions this doesn't really matter, but where some subtlety is called for you might regret choosing noisy luminaires.

CX SUGGESTS :



The Martin Mac101 is a compact RGB LED moving head fixture with a tight beam, and very low power requirements. It's ideal for use as a table light in function areas, and with fast movement can double up as a great visual effect for more "upbeat" shows.

www.martin.com



PHILIPS SELECON PL1

The PL1 LED Luminaire by Philips Selecon is compact and visually unobtrusive, yet achieves similar output to a 70W metal halide fixture. It's a great choice for lighting lecterns in fixed positions, especially when low ceiling height is a concern. www.seleconlight.com



PATHPORT NODE

PathPort by Pathway is a great way to interface external control systems to in-house lighting systems. Visiting operators can plug in their console to a node which then allows them to take precedence over the house controller. Soft-patch mapping and permissions can be controlled on a channel by channel basis. www.pathwayconnect.com



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What is that sound?

BY ANDY STEWART

Do you have a favourite album, or albums? I suspect you do. Certainly everyone I know in the music industry can point to a specific album – or group of albums – that defined their musical experience and inspired them to become part of this wonderfully crazy and diverse industry.

Question is: how do our favourites relate back to the work we do now?

If you have a defining ‘Top 5’, let’s say – and assuming you haven’t done this already – I’d urge you to drag these classic, life-affirming masterpieces out of the closet and listen to them again, only this time from your perspective as a professional engineer or producer (assuming for the moment that’s your bag).

RETRO-SPECTIVE

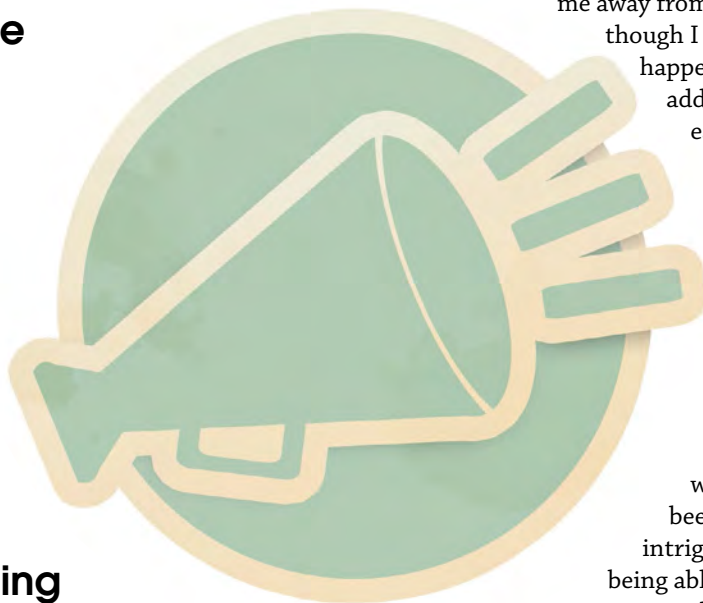
What makes these albums so memorable do you think? Have they simply adhered to your subconscious by accident, or was there something specific about them that hooked you in as a young listener? In my case I know there were lots of albums that enthralled me, and because I was lucky enough

to have four older brothers and sisters, I heard lots of great stuff from the ‘60s and ‘70s when I was young.

I loved some albums as much for their personal associations as the music itself. Neil Young’s *Harvest*, for instance, was significant because not only was it a fantastic record, I associated it with driving around with my oldest brother’s Kombi... freedom at the age of six! *Abbey Road* got lots of airplay at our house too (as did basically every Beatles album), and I always remember being fascinated by the sounds on *Maxwell’s Silver Hammer*. I could never quite work out what the hell that ghostly wailing sound effect was on that song. It sparked my imagination in a huge way. Later I became fascinated with bands like The Cure and Talking Heads, and early Brian Eno records.

There were dozens of albums that influenced me... and whenever I’m forced to make a list of favourite albums before I know it I’ve written down 100...

But if there’s one thing they all have in common it’s the sense of escapism they provided. They took me away from the mundane, even though I really had no idea this was happening at the time. I was addicted to sound from a very early age and albums that created a sense of ‘other worldliness’ particularly fuelled this addiction. I loved songs that had big dark atmospheres, mysterious qualities or hard-to-define instruments. I loved hearing depth and detail down to the faintest whisper. There has always been something especially intriguing to me about never being able to quite determine what’s going on at the back of a mix... it’s part of what makes them memorable I guess.



WHAT IS THAT SOUND?

Now that I’m a ‘grown up’ it’s my job to help make other peoples’ records memorable, and one of the ways I do this is to try and develop a ‘sound’ for them as early as possible. If I’m producing I’ll embark on it during pre-production; if I’m mixing it starts to happen before a single knob is twiddled.

THE INDEFINABLE

But... particularly when you’re mixing an album, it’s not always easy to define a record’s ‘sound’ before you dive in. Some records stubbornly resist every effort you make to define them, and sometimes their ‘sound’ only really emerges after the album comes out. That’s cool... not everything needs to be predetermined and planned, although when this happens I often regret certain mixing decisions and think; “If only I’d known back then what I know now about this album; I certainly wouldn’t have done X,Y and Z if we’d had a better sense of the record’s ‘sound’”. But we all suffer those regrets.

When you're mixing someone's record it's important to sit down with the musicians involved wherever possible before embarking on it – either over dinner, at the footy... wherever – and try to work out what sort of 'sound' you want the overall outcome to have. Should it be dry and resolutely analogue sounding, deep and wide with spectacular reverbs, hard and heavily compressed, gentle and dynamic with superb fidelity... or what? When there's no plan of attack it becomes a bit like storming the castle with naught but spears and blue face paint. You may look the part and sound tough, but there will be casualties.

In the end it's not always enough to ad-lib a mix situation, especially when you're heavily restricted by time. Having certain aims and expectations in your head *before* you start can get you further down the road more quickly, and with less disagreement. Frankly, it's a waste of everyone's time if you spend a week trying to make someone's folk album sound like heavy rock when no one had any such ambition for it except you. For this reason alone, a pre-production dinner, where everyone gets to have a chat about the sound of their record, can save you a huge amount of time and effort in the long run.

DINNER GUESS

The next time you're about to dive headlong into a mix project try this idea on for size: have a dinner at your place and get everyone involved to bring along three albums they think are relevant to the project in some way, no matter how tenuous the links might be. Over a lamb roast, or bucket of chicken, or whatever it is you're serving up, the idea is that everyone gets to play a few songs off the albums, elucidate what it is they love about them and how they relate back to the project. Particularly when you're working with a band, a nice dinner is a good way to bond people together; it helps clarify the aims of the group and gives everyone an insight into everyone else's perspective. And if there are issues to resolve, they're often far easier to discuss over the dinner table than the studio console.

REAL ENGINEERS THINK

Nothing annoys me more than hearing records that were clearly mixed by someone with nothing between the ears. To me it's far more important to apply thinking to your mixes than compression and reverb. Plan ahead whenever you can and make sure you have the right tools wired into place and working well long before the project begins. There's nothing more embarrassing than spending half of Day 1 on a project trying to resolve technical problems...

If you're ever having trouble with a mix, *think* of ways to resolve it, don't just twiddle knobs and hope. That rarely gets you far. And frankly, if you're completely stuck, send me a quick email (andy@themill.com.au) and I'll do my best to get you out of the hole.



Andy Stewart owns and operates The Mill in Victoria, a Grammy Award winning mixing and mastering facility. He's happy to respond to any pleas for mixing help... so what are you waiting for?

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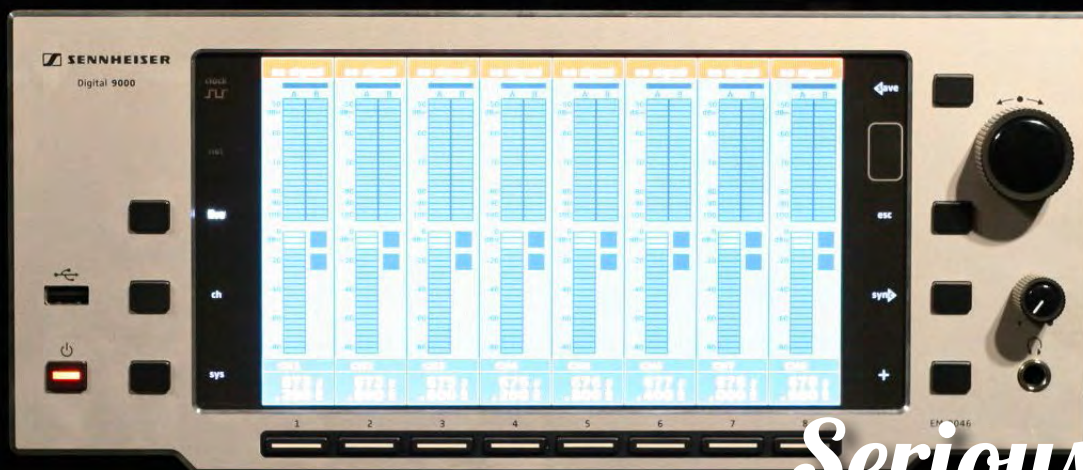
However large or small your audience and the venue, you can put together a system suitable for every situation using just the six components of the HK Audio Elements system. Here are just a few examples of systems you can build using the six components of Elements.

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Serious RF

BY JIMMY DEN-ODEN

SENNHEISER DIGITAL 9000 WIRELESS

IT WAS NOT WITHOUT SOME TREPIDATION I SIGNED THE LOAN DOCKET FOR THE DIGITAL 9000 DEMO KIT, WHAT WITH IT BEING PROBABLY THE SINGLE MOST VALUABLE PIECE OF GEAR WE'VE EVER SEEN INSIDE OUR BUILDING.

9000 represents a new age in RF for Sennheiser. The eight channel receiver is a new thing and outwardly it's the most obvious difference. But what's inside is really the biggest change. The 9000 system transmits full bandwidth, uncompressed digital audio. No audio compansion, and no data compression either.

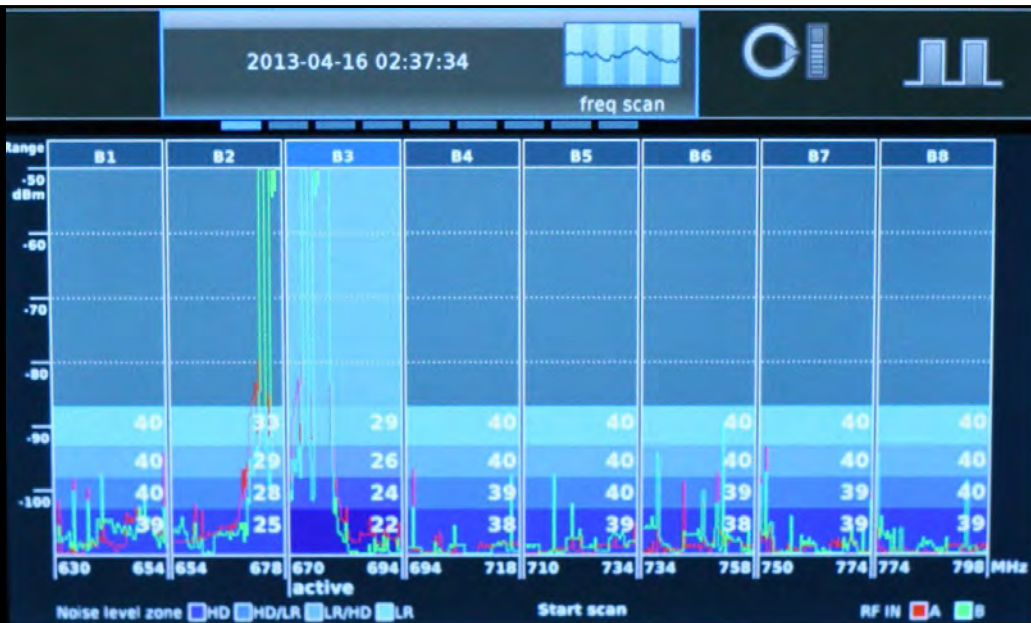
In an ideal world this would happen at something like 24 bit depth and 96kHz sample rate, but this translates to about 2.3MBit/s data transfer which exceeds the ETSI 300 422 guidelines (200kHz per channel). Sampling at 44.1kHz with 18 bit depth yields about 110dB dynamic range, and fits into a data stream of about 0.8MBit/s. Add around 20-30% headroom to this additional data for framing

and error correction, and you wind up with a signal that fits. So the challenge here is to fit all the audio and framing data into a 200kHz block of channel bandwidth. This is what the 9000 Digital system does, and it relies on technologies like very steep filtering followed by linear antenna boosters to make this work.

How it does this (to the best of my understanding) is by converting analogue to digital at the best sample rate and bit depth it can while still allowing the signal to fit into the required bandwidth. Sennheiser actually hired IT gurus to help develop the system, because it deals as much in data as audio. The digital transmission is very linear by comparison to analogue. This brings the upside that it's much easier to avoid intermod problems, which happen due to the non-



THE ANALOGUE OUTPUTS ARE AVAILABLE ON XLR AND D-SUB, AND EACH IS TRANSFORMER ISOLATED!



THIS IS WHAT THE FREQUENCY SCAN LOOKS LIKE

linear characteristics of analogue transmitters. You can stack channels with a constant 600kHz separation from each other which is really cool. The downside is that the linear transmission has a high cost in battery life.

DIVERSITY - IT'S NOT JUST GOOD FOR SOCIETY

Like many analogue systems, the 9000 Digital system works in diversity, except that instead of choosing the best RF signal to output, the system chooses the most error-free data bits. Packet by packet. As with any digital system there's a degree of latency involved – total system latency is

about 3.2mS from mic input to AES output on the receiver (or about 3.5mS to the analogue output). Interestingly, nearly half of this is the decoding stage of the receiver. The system is one-way only – there's no return data path from the receiver to the transmitters – presumably a decision made to avoid further choking up limited bandwidth. The 9000 Digital kit is built to afford some degree of flexibility. The receiver tunes from 470-798MHz, which is very wide band though not all of it useable in Australia. The antenna boosters and paddles work across half this bandwidth – group A or B. Transmitter groups work across

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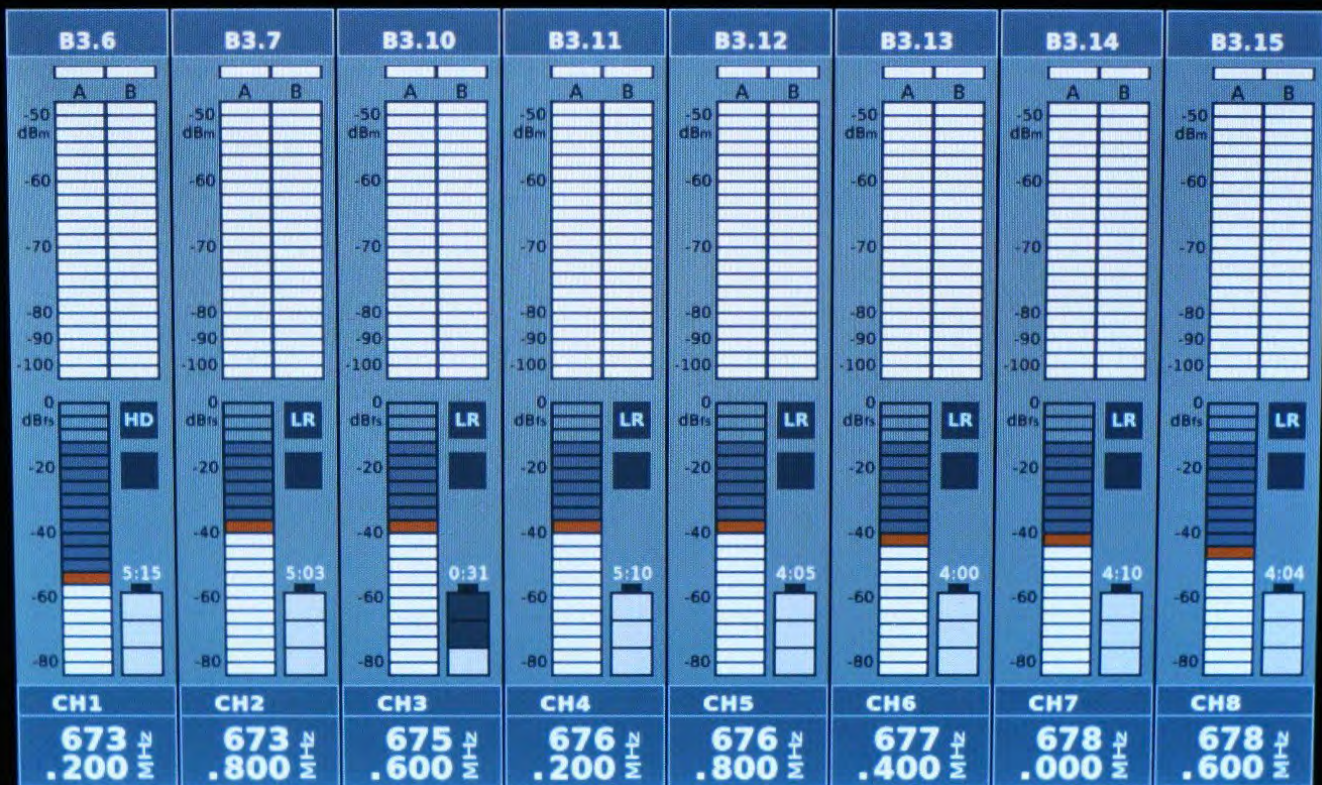
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half this bandwidth again (in other words, they cover a quarter the bandwidth of the receiver). Transmitters run on rechargeable batteries, and there's a cascading charging dock into which both handheld and beltpack batteries fit. Typical runtime is about 6 hours, and the receivers tell you remaining battery life accurate to 15 mins.

ENOUGH BANTER

Time to talk about using it. Because the system is designed to run multiple channels straight away, it does this better than a bunch of discrete single channel systems. Setup is pretty straightforward and physically no different than

conventional systems – plug in the antenna lines, connect the paddles (both directional and omni paddles exist), and plug in your outputs.

The receiver is dominated by a large central screen with adjacent buttons at each side and beneath, as well as a rotary encoder/button at the right. Use the context sensitive keys to go into setup mode and from here you can get the receiver to scan all the available frequencies in your selected block (according to which block your antenna system supports). Choose the cleanest looking block your transmitters support, then double tap the encoder to magnify it. From here, choose a receiver “slot” then dial it into a free bit of

bandwidth. Repeat the process for the other 7 slots.

To sync the transmitters, choose a slot then hit the IR sync button and hold the transmitter in front of the receiver. It takes about a second, and will also sync things like channel names and other transmitter settings.

That's it, setup done. Pretty simple eh? The things you don't see are what make it simple – processes such as the automatic cable compensation that happens when the receiver initializes the brainy antennae. You don't need to know how all the brainy stuff works to use the system, just be thankful for it.



NEW BELTPACK TRANSMITTERS TOO

A SELECTION OF THE NEW HANDHELD TRANSMITTERS



There's a range of new transmitter capsules (ME and MD series) specific to the 9000 Digital system, and it also works with existing MME and MMD capsules. Two Neumann capsules are also available. There's even a transmitter with a button on it which can trigger various functions on the receiver – whether this be closing a contact or switching audio from one output to another for that receiver channel. This is a win for sideline commentary comms in outside broadcast!

You might expect better range from a digital system, but that's not necessarily the case. Remember we've lost the analogue transmitter efficiency. In fact, the higher the sample rate, the easier it is for background noise to confuse things. Anticipating this, Sennheiser has included the option to run transmitters in high-quality or increased range modes. The RF scan process on the receiver is a good tip-off to the right mode. There's also an encrypted transmission mode.



UP TO FOUR CHARGERS CAN BE CASCADDED FROM A SINGLE PSU



FUNCTION BUTTON BUILT INTO THE HAND HELD TRANSMITTER

At the end of the day, this is not the RF kit to put in the local school hall or the community fair day. It's high-end gear and priced accordingly. This is the gear you use when you want lots of channels of great wireless audio quality without the hassles associated with traditional analogue radio mic systems.

BRAND: SENNHEISER
 MODEL: 9000 DIGITAL WIRELESS
 RRP: AROUND \$10K PER CHANNEL PLUS GST
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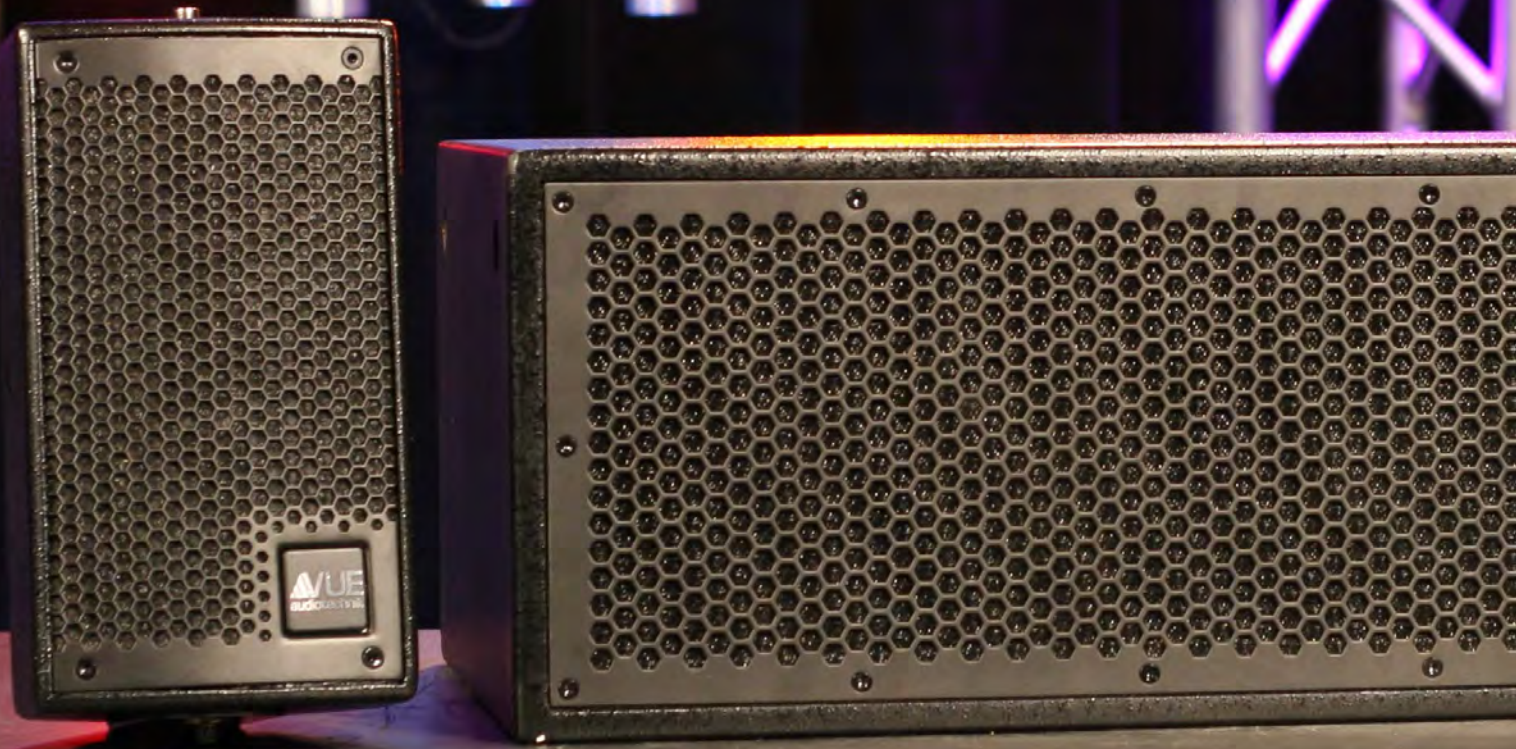


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Vue Audiotechnik i-Class speakers

Entry level product from new entrant to the market

BY JIMMY DEN-OUDEM

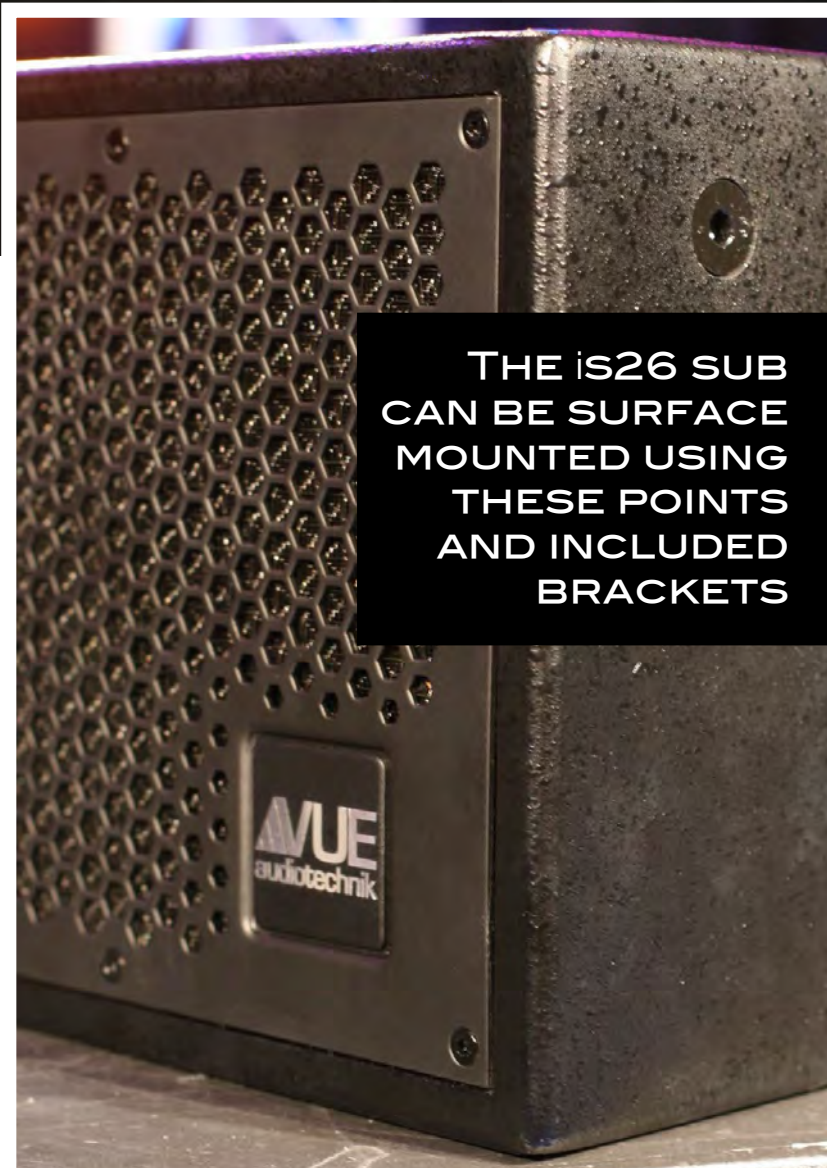
VUE AUDIOTECHNIK MAY BE A RELATIVELY RECENT ARRIVAL TO THE PRO AUDIO MARKET, BUT YOU CAN'T IGNORE THAT IT'S BEEN FOUNDED BY A COUPLE OF INDUSTRY VETERANS. KEN BERGER CO-FOUNDED EAW, AND JIM SIDES SPENT YEARS AS MD / CEO OF MEYER SOUND LABS GMBH. WE TOURED SOME OF THE HIGH END VUE KIT ON THE CX ROADSHOW DEMOS EARLIER THIS YEAR (AND LIKED IT), BUT THIS REVIEW IS ABOUT WHAT LIES AT THE OTHER END OF THE SCALE.

"i-Class" speakers are touted as a high performance kit for AV integrators and contractors. They're priced very attractively, and available in black or white to suit their surroundings.

We reviewed a pair of i4.5 satellites combined with an is26 subwoofer. The i4.5 uses a 4.5" polypropylene LF driver and a 1" silk dome tweeter. Its nominal coverage is 70x70 degrees (HxV), and given its intended purpose in life this seems sensible. Frequency response is as expected limited by the very compact cabinet size to 100Hz - 20kHz (+/- 3dB). Not a problem as it's suggested in the spec that it be matched with an i-Class sub anyway. The cabinet ships with mounting hardware included in the form of a surface-mount yoke bracket which allows the speaker to be tilted up or downward when mounted in vertical orientation.

Signal is input to the i4.5 via 4-pole phoenix connector - a pair of terminals for input and another pair for loop through. These features clearly position the i4.5 in the installation market. The 16 ohm impedance means you can parallel multiple boxes without pushing your amp to the brink of insanity (4 boxes = 4 ohms). The i4.5 is rated at 60W RMS long term.

The is26 is a dual driver subwoofer with 6.5" drivers driven by 1.5" voicecoils. It's good for 48-400Hz (+/-3dB), impedance is 4 ohms, and it will deal with 220W RMS. There's an active model available as well (is26a). Like the



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BRACKETS INCLUDED

i4.5, it includes surface mounting brackets in the box. Also like the i4.5 it's constructed from wood, so it feels nice and serious when you pick it up. Input and loop through is via 4 pole phoenix and twin NL4.

Because the whole kit we tested was unpowered we needed some amplification and processing to make it work. We tested with the system crossed over at 105Hz (sub to satellite), and three identical amplifier channels. Because the power requirements aren't huge you don't need an enormous amp. Using a four channel amp you could conceivably run a couple of subs and eight satellites quite comfortably – pretty ideal for good full range coverage in a small to moderate sized bar area. Equally, two amp channels would be good for 8 i4.5 cabinets of under-balcony fill.

High impedance is useful when economizing on amp channels, and in the market sector that the i-Class sits in, economy is likely to be a factor. Personally if I were installing the system I'd be inclined to go for a multi-channel amp with enough DSP in-built to perform the necessary crossover functions.

So how does it sound? Straight out of the box (with only basic crossover settings) it sounds great. Far better in fact than it's entitled to for the price. The pattern control is good. The high frequency response of the i-Class is actually characteristic of Vue's high end h-Class (which uses beryllium HF componentry). You could mix and match between the ranges within a single installation without it sounding wrong. I think that's really cool. Low frequency



14.5 HAS PHOENIX TERMINALS FOR INPUT AND LOOP



on the sub rolls off as you'd expect it to from the specs, so you hear it more than feel it. But who needs 30Hz in a bar? I think this is just a reflection of a system that does exactly what it needs to in its intended applications. I'd call it sensible engineering.

Really there are two ways the i4.5 can be used – either to supplement a larger system as fill boxes, or combined with i-Class subs to form a standalone full-range system. I reckon it fills both niches very nicely.

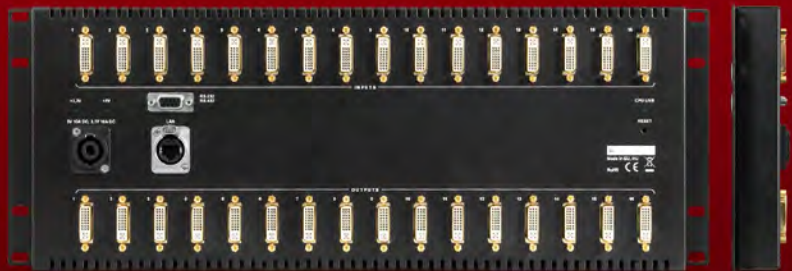
BRAND: VUE AUDIOTECHNIK
 MODEL: i4.5 AND IS26
 RRP: i4.5 - \$295.00/PAIR INC GST.
 IS26 - \$495.00 INC GST.
 PRODUCT INFO: WWW.VUEAUDIO.COM
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SHOW PRO LED PIXPAD TRI-16 DMX

COLOURFUL EYE CANDY

BY JIMMY DEN-ODEN



THE LED PIXPAD IS AN ENTRY LEVEL MULTI-SEGMENT LED FIXTURE. IT COMPRISES 16X 10W TRI-COLOUR LED MODULES, EACH HOUSED WITHIN ITS OWN REFLECTOR ASSEMBLY. WHILE IT'S POSSIBLE TO USE THE PIXPAD FOR GENERAL ILLUMINATION, THE WIDE ANGLE REFLECTORS MEANS THERE'S NOT MUCH CONTROL OVER WHERE YOU SEND THE LIGHT. IT'S BASICALLY A WASH, AND THE BEAM ANGLE IS CLOSE TO 180 DEGREES. ANYWAY THAT'S NOT REALLY ITS DESIGNED PURPOSE - IT'S VERY MUCH GEARED TOWARD BEING A VISUAL FEATURE.

Physically it's a 46.5x46.5cm square, 16cm deep and weighing about 11kg. You could happily travel four units in a packer with wheels (or eight if you had flat loads). The rigging options for the PIXPAD are good. There's a yoke bracket attached to the back of the fixture, and this allows single units to be flown.

A clever cam locking system allows multiple panels to be joined together – just butt them up next to each other, insert a hex key on the back, and turn. Every panel has 2 cams on the side and two on top - so you don't have to mess about trying to figure out what fits with what. Every PIXPAD mates with every other provided they're all facing the same direction – not always the case with so-called “modular” systems.

I consider the cam system more an alignment tool than a rigging method – the cams seem pretty strong but I wouldn't go flying multiple panels off only one fixture's yoke. There are roto-lock style receptacles on the back. If you were ground-stacking then it would be less an issue, though you'd need some support to prevent the stack falling over face-first.

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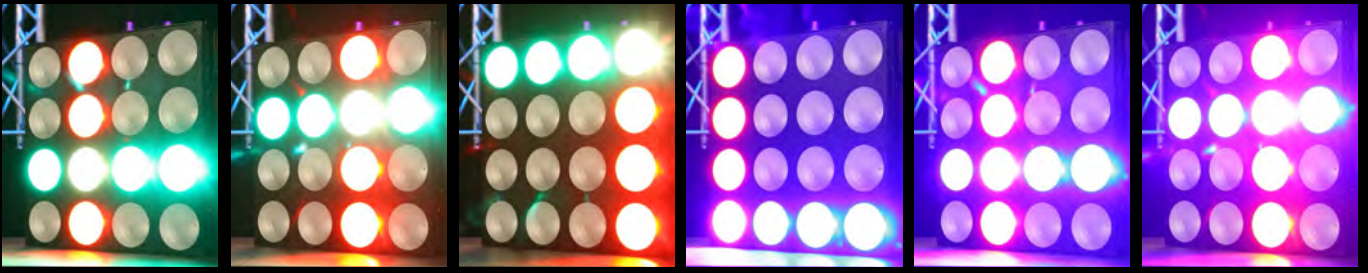
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The back panel features a two line backlit LCD menu system, driven by four buttons. Both 3 pin and 5 pin XLR connectors are provided for DMX input and loop through, with power input and loop via PowerCon. The menu system is relatively straightforward for basic settings, and there are some additional options for standalone mode and such.

DMX control can be run in four channel modes requiring anywhere from 3 channels through to 48. 3 channel mode gives you RGB for the whole fixture, 5 channel adds strobe and dimmer control, and 7 channel mode provides a selection of pre-programmed macros. 48 channel mode gives you RGB control over every individual element of the fixture, and in this mode you can control 10 fixtures from one universe of DMX.

Given the price-point you'd expect to have to compromise somewhere along the line, and indeed with the PIXPAD you do with dimming and colour control. The white is a bit on the pink side, and at extremely low intensities (one to two steps above completely off) there are some pretty visible





differences in the composition of white light from pixel to pixel. There is a menu feature which allows calibration of white light, and the reality is that once you get the fixture to a usable output level, the elements look pretty consistent. Other menu options are available for standalone mode and fan speed. The PIXPAD has four cooling fans which run for a moment when you first turn it on, but then drop into temperature activated mode. I left it running a slow colour cycle for 24 hours and returned to find the fans doing their job keeping the fixture cool. They make a bit of noise at full speed, but on a decent sized stage you wouldn't notice it. The fact they're at the back of the fixture helps.

Used singly you can do some cool stuff on the PIXPAD just using the internal macros. Gang several units together and your options increase to include scrolling text, graphics and even pixel mapping. Albeit with very large pixels, but you could do it. The PIXPAD is a truckload of lighting bling for not a lot of money. It's a good choice for smaller hire firms looking to add some scalable eye candy to their lighting inventory.

BRAND: SHOW PRO
 MODEL: LED PIXPAD TRI-16
 RRP: \$1699.00 INC GST
 PRODUCT INFO: WWW.SHOWTECH.COM.AU
 DISTRIBUTOR: WWW.SHOWTECH.COM.AU

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QSC Q-SYS CORE 250i



Thinking outside the box

BY JIMMY DEN-ouden

QSC INTRODUCED THEIR Q-SYS PLATFORM A COUPLE OF YEARS BACK, AND THE CORE 250i IS ONE OF THE RECENT ADDITIONS TO THE RANGE.

Q-Sys is an interesting platform in itself. Many DSP units have comprehensive internal routing, but Q-Sys is designed to manage audio across multiple devices. The multiplexed audio component to Q-Sys is called Q-LAN, and it operates as a Layer 3 protocol. This means that various IO elements can be connected to the Q-Sys frame via standard Ethernet hardware, co-existing with other network traffic. Latency from any input to any output is stated at 2.5ms.

Up to 1024 channels of audio can be routed over a gigabit network connection – how many of these can be accessed on the frame depends on which frame you choose. The Core 250i frame supports connection to up to 64 of these, and it has eight local card slots each of which supports four channels. So that's 32 channels on-board, plus 64 via networked IO. It's designed to be part of a system beyond its own enclosure. The Core 250i uses an Intel i5 processor running a Linux OS, and it has a gutload of audio DSP power. I built a decent sized sample system design and used the "check design" function to find I was using only 4% of the processing capacity.

Physically the Core 250i is an unimposing though elegant piece of hardware. An LCD screen shows status, IP and card-slot info, and multi-colour LEDs show signal status on each of the 32 on-board card slot "ports". Card slots can be configured with input or output cards, or any combination

of these you can think of. IO cards are common to other Q-Sys devices and include a mic/line input card, line output card, AES output card, and a DataPort output card to connect directly to QSC amps. DataPort is a proprietary protocol and provides not only signal transfer but also amplifier feedback and diagnostic info. There's an array of Ethernet and USB ports on the back panel, providing Q-LAN and storage connectivity.

Explaining what Q-Sys is and does is not easy, but the short version is just to say it basically does whatever you want it to do. I spent some three hours in the office just playing with the various modules and routing inside the Core 250i frame and I still felt I was just scratching the surface. The unit can route commands out of itself to external devices via RS-232 or Ethernet, and there are two GPIO ports as well.

Essentially, the Core 250i is a box with inputs and outputs. Once the signals go in they become digital and you can virtually route them through whatever processes you

Users can press these buttons as many times as they want without effecting the operation of the Core 250i





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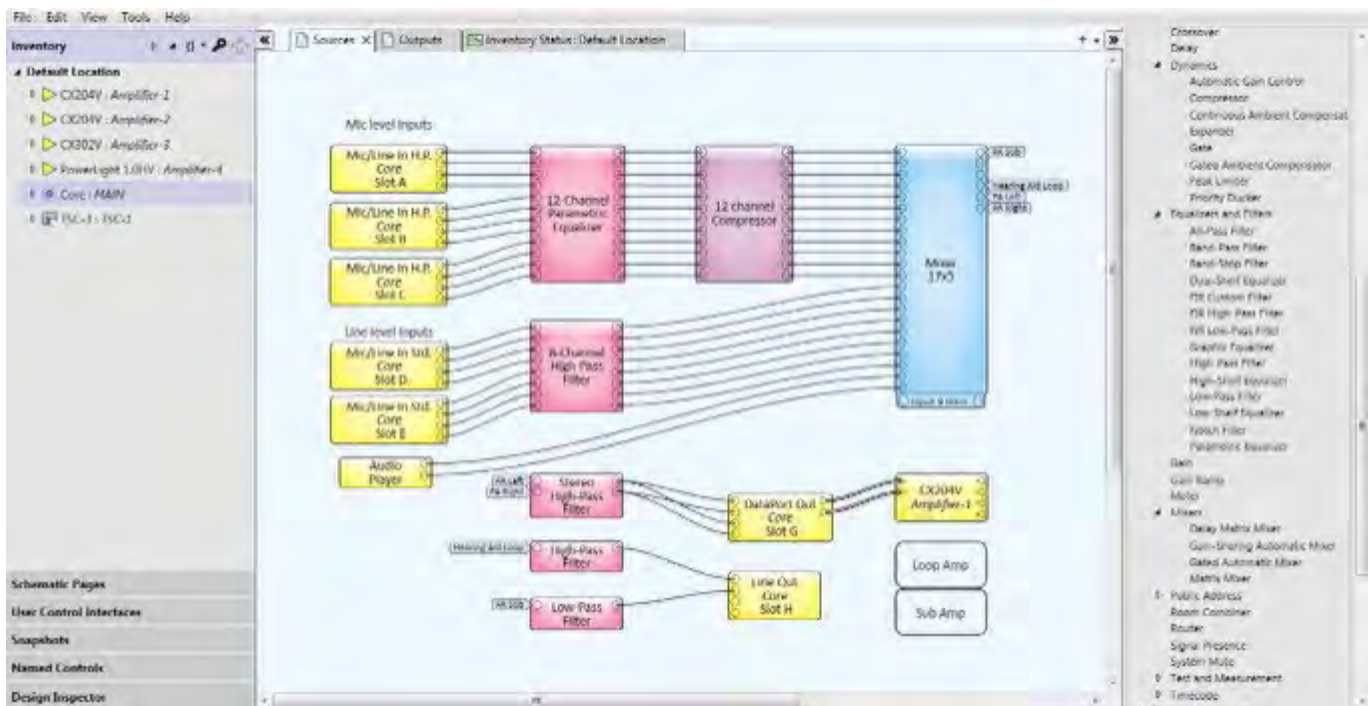
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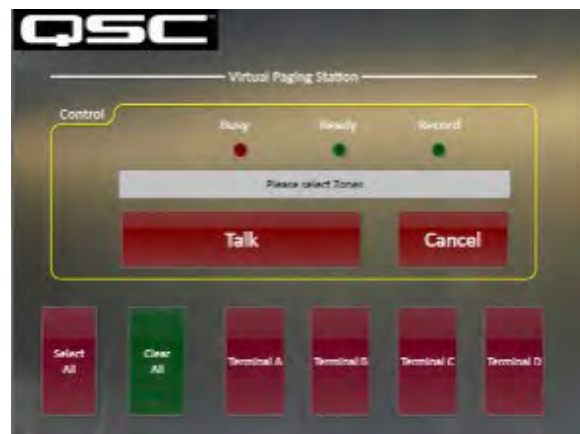


Note the wide selection of processing functions at right

want, then output resultant signals. Process choice is huge and varied – matrix mixers, parametric EQs, other filters, echo cancellation, compression, crossovers, delays. Think of it as a completely freely routable digital console with no faders but an array of other functions. You can route anything anywhere, and the system design software is quite straightforward to use. It's also efficient – if you want to drag 10 signals from 10 sources to 10 destinations on the same module you can do it all in one move. That's cool. There's another piece of software which allows an administrator to upload audio files to the Core – it can play these into any point on the network.

Equally cool are the custom UCI pages – user control interfaces. You can build pages which include only the controls you choose. This means that once the system is built, the computer can be removed and users left with only the controls they actually need. A huge step for overall reliability in environments where audio systems are used by untrained operators! All the graphics, labels and everything

associated with the UCI pages are stored on the Core – you build the system on a computer and upload it into the Core as a whole. This means you're not lost if the computer is



Sample UCI page - also accessible via iPad app



damaged – you can still pull down the entire content of the Core and work on it using a different machine.

Because of the IO flexibility and the completely configurable nature of the system there's not a lot you can't do on Q-Sys. Whether you want a matrix mixer with some EQ, a system crossover / limiter, a distributed audio system nerve centre, or a conferencing system, you can have it. The optional POE TSC-3 and TSC-8 touchscreens give further options for how much control is handed over to end users. Paging stations and IO boxes add further capability to the system. Q-LAN is good for 100m cable runs, more if you punctuate the run with a network switch.

There are only two annoyances I can find with the system; card installation and latency on the FIR filters. According to the manual, installing the cards in the Core 250i is something akin to making a sandwich that you screw together. Once the card stack is complete you connect them to the Core with ribbon cables. Painful for sure, but pending failures you'd only need to do it once. QSC give a three year warranty so failures also seem unlikely. The FIR filters include a "group latency" display – I put one filter

in the system at 100Hz and it showed the latency as about 46mS. Lowering the frequency this increased to 240mS – I bypassed the filter and could hear the delay disappear. I know FIR filters use a lot of processing power, but with this degree of latency it seems pointless to include them. That's the worst of it though. Some of the filters are slow, and so is the card installation. Everything else about the Q-Sys Core 250i is pretty darned awesome. I can think of a stack of applications for the unit – from bars to Church installs there are few installations which wouldn't benefit from a properly setup one of these things. It does the thinking, so end users don't have to.

BRAND: QSC
 MODEL: Q-SYS CORE 250I
 RRP: CORE 250I - \$6995. MIC/LINE INPUT CARD - \$895. LINE OUTPUT CARD - \$895. TSC-3 - \$995.
 PRODUCT INFO: WWW.QSC.COM
 DISTRIBUTOR: WWW.TAG.COM.AU

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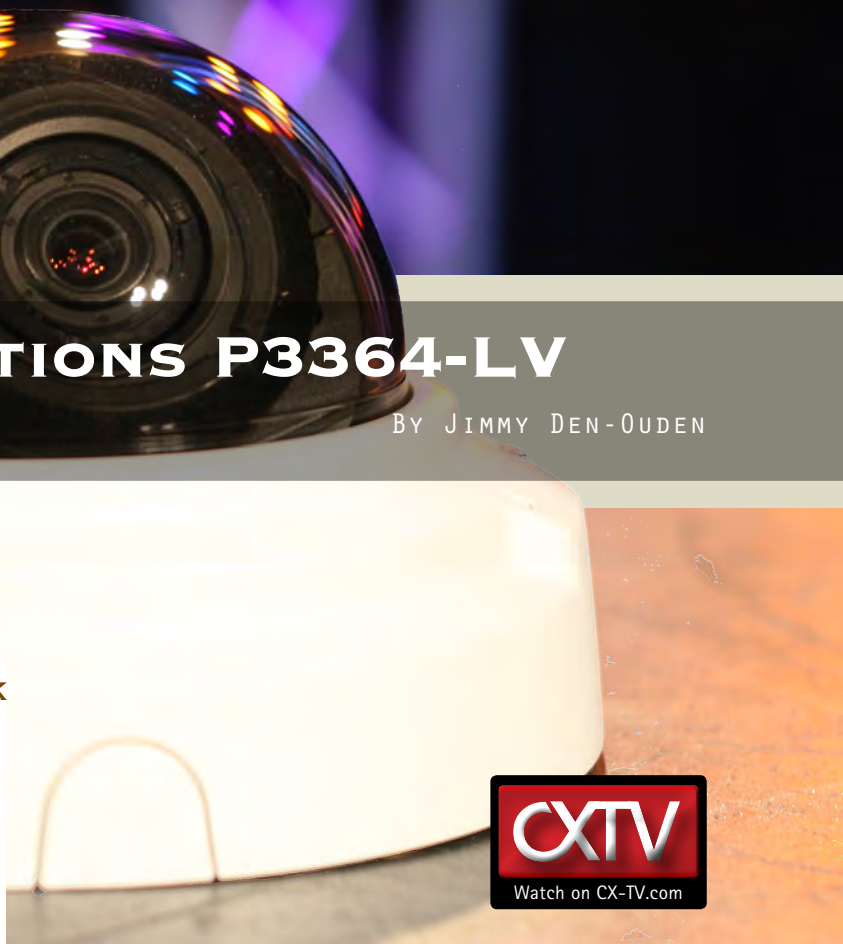
AXIS COMMUNICATIONS P3364-LV

HD video over IP

BY JIMMY DEN-UDEN

ONLY RECENTLY I READ A FACEBOOK POST ABOUT A PRODUCTION COMPANY WHICH HAD BEEN ROBBED – A WHOLE PANTECH FULL OF GEAR WAS TAKEN. SUCH LOSSES ARE HARD TO RECOVER FROM AND OFTEN THE GEAR ISN'T RECOVERED FOR YEARS, IF AT ALL. GOOD SURVEILLANCE FOOTAGE CAN HELP THE POLICE IN SUCH MATTERS. BUT CAMERAS ARE GOOD FOR MORE THAN JUST THAT. WHETHER IT'S A BEAUTIFUL SHOT OF THE CITY TO RUN BEHIND THE NEWS OR A FOYER RELAY FEED OF A LIVE PRODUCTION, THE HUMBLE CAMERA IS MORE IMPORTANT NOW THAN EVER BEFORE. PART OF THIS HAS BEEN DRIVEN BY THE AVAILABILITY OF BETTER TECHNOLOGY. WE'VE EVEN HEARD OF AV HELP DESKS USING CAMERAS IN UNIVERSITIES TO HELP LECTURERS DIAGNOSE FAULTS WITH ROOM AV SYSTEMS.

The Axis P3364-LV is a fixed dome network camera with IR illumination. There are several great delights to networked cameras. First up the cabling is much simpler. Run a network cable to each camera. That's it – job done. The P3364-LV runs off a PoE (power over Ethernet) network switch, so it really is a one cable installation. In many cases network cameras can be run over existing data infrastructure. It's easier than messing about with power, video and control cabling, all of which require different terminations. Good networked video cameras can be

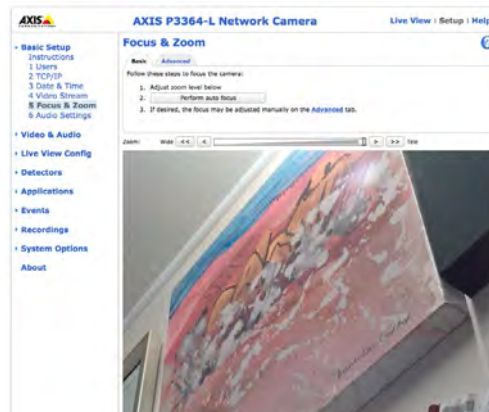


streamed to more than one device simultaneously. So you might want to record the output to a network attached storage (NAS) device for security purposes, stream it to a security control room for live monitoring, and even view it on a smart phone in case of an alarm notification. You can do all that stuff.

The P3364-LV isn't designed for remote pan or tilt, but you can remotely control zoom, focus and iris. This means there are little stepper motors inside to manage these functions. When the camera is first powered up, these all move to a home position so they can index (just like a moving light). This and the network start-up takes about a minute. Initial setup is best done via the Axis Camera Management PC tool, which finds all the cameras on the network and allows you to set fixed IP addresses, update firmware, and upload camera configurations. You can hit multiple cameras at once from the utility, so it's an efficient process.

Once you know the camera IP, viewing it is as simple as punching that IP into a computer on the same network.

You can stream from the camera in a number of formats including motion JPEG, and the more efficient H.264. H.264 has a high latency (several seconds) when viewed on a Mac due to Quicktime buffering, but on a PC the latency



from camera to viewer is about 150mS. Not quite lip-sync real-time, but more than adequate for any other application. Axis make a network video decoder too, so you can get the output as composite or DVI.

The amount of control you get over the P3364-LV is quite remarkable. Think of the features included in every security DVR and it does all those things. Add to this different levels of user access, remote zoom and focus, and auto-focus option that actually works really well, remote iris and over 60dB of picture gain. The web interface for the camera is excellent – it's clear that Axis has spent some serious time getting the software right. The camera supports e-mailing users with still images and event notifications. It's smart enough to tell when someone's tampered with it (paint or tape over the lens or similar), and you can even set it to record time prior to detected events. Full motion detection is supported, as is audio triggering. The audio trigger setup is very good, with a real-time graph showing what the camera can hear and where the detect threshold is set relative to that. There's scope to upload applications into the P3364-LV, so for instance it could perform number plate recognition and trigger external events based on the results. External trigger input and output terminals are provided to facilitate this.

An SD slot on the camera base provides the option to record video directly within the camera. Recording on motion detection, a decent sized SD card will hold several weeks or months of footage depending on how much activity the camera sees. The camera can also be set to record into a NAS device, which provides redundancy. Finding, viewing and downloading recorded footage is all done via the web interface, and again it's a really easy process to navigate. Just be aware that there are rules regarding where cameras can be installed in the workplace, and associated signage requirements.

The P3364-LV basically runs in almost total darkness and even holds colour at very low light levels. When there's no light, the in-built high power LED illuminators kick in. Again, this is controllable. There are actually three emitters – 1 narrow and 2 wide. As you zoom the camera, the levels between these is automatically balanced to yield visible images. The IR Emitter range is about 20m! The camera dome has a mild tint so if it gets scratched it won't reflect IR back into the lens and cause flares. The dome is also vandal resistant with anti-tamper screws. Switching between lots of light and no light, it takes a few seconds for the camera to adjust. This is to be expected, and gradual changes (such as sunset) are dealt with subtly.

Let's talk picture quality. It's 720p, it's great, and the zoom lens runs out to very wide. Things start to look a little fish-eyed at the big end of the range but that's to be expected



– the image is still sharp. While the camera has scope to apply lots of gain, you can manually set or just limit how much is applied to maintain noise-free images. Even with ridiculous amounts of gain applied, the pictures still look pretty good. A desktop application allows the streams from multiple cameras to be viewed simultaneously on a multi-view window, and you can choose what's in each box. All up the P3364-LV is a really cool piece of gear. It's got lots of flexibility, a great user interface and excellent picture quality.



BRAND: AXIS COMMUNICATIONS
MODEL: P3364-LV
RRP: \$1130 INC GST RRP
PRODUCT INFO: WWW.AXIS.COM
DISTRIBUTOR: WWW.AXIS.COM



**MAY
2013**

ROAD SKILLS

PETE MURRAY

SPRINGSTEEN

PAUL KELLY

NEIL FINN

STONE ROSES

BY CAT STROM

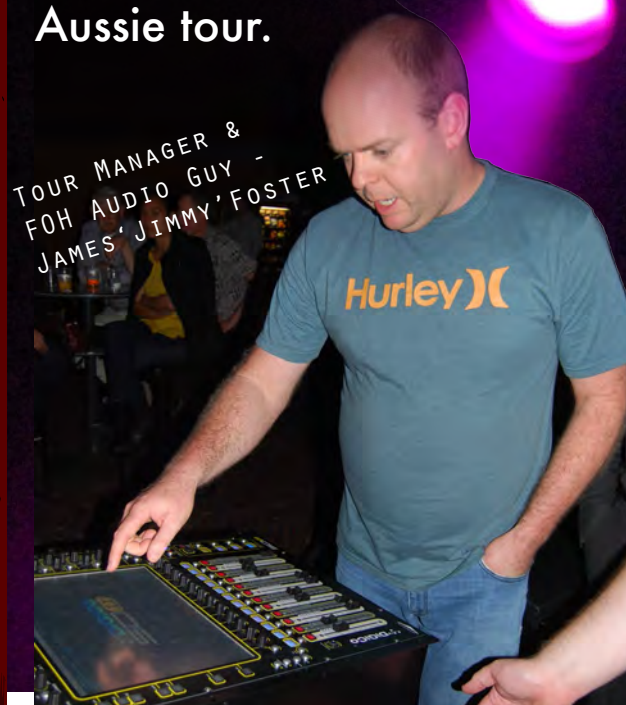
PETE MURRAY PHOTOGRAPHER - Cat Strom

SPRINGSTEEN PHOTOGRAPHER - Bob King

PAUL KELLY & NEIL FINN's PHOTOGRAPHER - Troy Constable

STONE ROSES PHOTOGRAPHER - Ashley Mar

A good example of a hard working, down to earth Aussie performer is Pete Murray who is currently touring just about every corner of the country with his 'The Byron Sessions' . In fact he is playing 44 dates, many back to back, taking in such places as Port Lincoln, Kalgoorlie, Esperance, and Castlemaine. The venues range from pubs, clubs, theatres, RSL's and Leagues Clubs throwing up all that is diverse on a regional Aussie tour.



Production has been stripped down to the bare necessities as Pete wanted to get back to basics, as if he is playing in your lounge room.

James 'Jimmy' Foster is on his fourth tour with Pete acting as both his FOH audio guy and tour manager. Jimmy, who learnt his trade at Frontline and JPJ Audio, recently decided to embark on a freelance career and now looks after acts such as Karise Eden, Lisa Mitchell and Thirsty Merc. He still contracts for JPJ Audio and Frontline.



PETE MURRAY

“We’re using mostly inhouse gear however Pete is fortunate enough to have a Shure Endorsement thanks to the guys at Jands, so we travel with a complement of Shure microphones including a KSM 9 for Pete’s Vocal which just sounds great,” said Jimmy. “The set up is a three-piece band and we’re using about 12 inputs in total. Normally Pete uses in ears but this time we’re using inhouse wedges so it’s very basic. Although it’s sometimes a challenge I am really enjoying it. Pete is very good at knowing the limitations of some places and we just play to it.”

And whilst Jimmy happily deals with whatever PA is offered at each venue he admits his ideal system would be an

L’Acoustics Kudo system of which he is a big fan. At Hornsby RSL where we met up, he had a DiGiCo SD11 console which Jimmy bought in especially for the gig as he likes it’s compact size, its ability to do everything he requires it to do and most importantly, because it sounds good.

“The sound quality that comes off that console is amazing for its size and cost,” he added. “I’m only using a few effects such as a vocal reverb, a guitar reverb and some delays on Pete’s vocals when we feel the need”.

SPRINGSTEEN

& The E Street Band

Hailed by many as the greatest musical performer of our time, Bruce Springsteen and the E Street Band returned to our shores for a ten date tour that generated over \$25 million in ticket sales, putting him at the top of American music magazine Billboard's global Hot Tours tally.

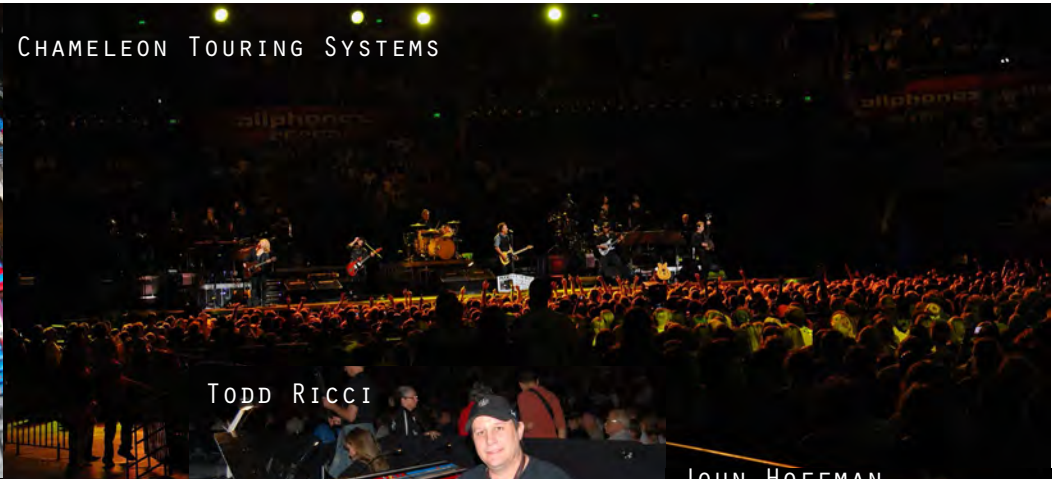
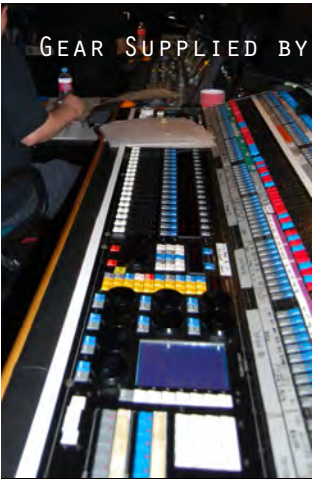
The tour, in support of new album "Wrecking Ball", was lit by Jeff Ravitz with FOH audio by John Cooper and whilst Jeff and his lighting operators Todd Ricci and John Hoffman were most accommodating, John will not do interviews for trade publications.

Jeff has been Bruce's LD for many years and together they have evolved. Whilst many elements have remained the same over the years - the band's stage positions and of course many songs - there are always new songs and there is always new lighting technology to be explored. Over the years there has been visual progression but not change for change's sake.

For Bruce's last tour Jeff went to town with tungsten sources for a film-inspired look but for this tour he has expanded his use of LED fixtures particularly the Ayrton Wildsun 500C, which Jeff says has changed the brilliance of all the base colour in the show.

Another interesting light fixture on the tour was the Morpheus CP7 IP LED Blinder custom made by Morpheus Lights. Morpheus modified and mounted 175 individual Chauvet COLORado units to build 25 CP7s—which mount six of the 17-degree beam angle heads surrounding a seventh fixed head in the centre. This configuration allows the combined beam of the 23-inch diameter cluster to be varied from 17 to 34 degrees, or "shaped" as required. At only 616 watts, the CP7 efficiently replaces traditional nine-lights with colour changers that drew close to 6,000 watts. With Bruce famous for his spontaneous and lengthy shows, Jeff has to ensure that the lighting system is optimized for maximum flexibility and maximum power. He has to design a rig that can give his operators as many options as possible. The rig included a mix of gear from Morpheus Lights, Ayrton, Clay Paky, Martin Professional, Philips Vari-Lite,

GEAR SUPPLIED BY CHAMELEON TOURING SYSTEMS



TODD RICCI

JOHN HOFFMAN



Chauvet, Philips Color Kinetics, ZAP Technology, Robert Juliat, and ETC.

It includes some rather elderly fixtures in the shape of the Panabeam XR2, the BriteBurst 2000E, and even the old tungsten FaderBeam.

Fifteen Philips Vari-Lite VL1000 tungsten spots with shutters were used to keylight the band whilst VL3000s are used to texture the stage and players. Each band member also had a VL2500 as a dedicated backlight that could change colour and intensity, with or without a gobo. ETC Source Four PARs and MAC Auras are used as uplights for the band whilst Springsteen himself had four Clay Paky Sharpys. The riser and runway fascias are lit with various Philips Color Kinetics LEDs and Morpheus Panabeam XR2+.



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PAUL KELLY & NEIL FINN

Paul Kelly and Neil Finn, Australia's greatest pop poet and New Zealand's most celebrated songwriter and performer, joined forces touring the country showcasing their iconic songs. Finn and Kelly shared the stage throughout as members of the one band, singing and playing together a selection from their rich and varied songbooks.

When the two acts decided to tour together there was a merging of crew with Kelly's long time sound engineer / tour manager Greg Weaver and Finn's lighting designer Dave Harding joining creative forces.

Greg doesn't have a particular preference when it comes to using a brand of PA, he rates all modern line array systems as viable, and so he didn't specify one brand over another. However he did specify a Digidesign Profile console as he is familiar with it and saw this tour as an opportunity to experiment further with plugins.

"Much of my time on tours is spent tour managing and I don't have the opportunity to experiment with the console," Greg said. "This tour was a great opportunity for me as a sound guy and Ben Shapiro, our monitor guy, recommended several. At the start of the tour I was using heaps of plugins but as the tour progressed, I used less and less. By the end of the tour I was only using two: the Waves V-EQ4 (a plugin that emulates the EQ section of a Neve console) on all the drum and vocal channels and the Waves C6 Multiband Compressor to do dynamic selective compression of certain frequency bands. I found that having too many plugins complicated my thought flow. I ended up using the onboard compressors which I found easy to use and gave me the result I needed."

Dealing with such two different vocalists was made easier by the fact that most of the time they stuck to their own microphones and Greg could set up an EQ he thought suitable for each vocalist and it stayed that way.

"They do have very different vocal styles," added Greg. "Paul sings relatively quietly and off-mic compared to Neil. However their styles complimented each other."

Most microphones were Shure except for the Earthworks piano microphone system for the grand piano as recommended by Ben Shapiro. For monitors Ben preferred L'Acoustics Arcs and L'Acoustics dV-subs for side fills and L'Acoustics 1.15XT HiQ wedges as well as a Digidesign Profile.

Having a history with Crowded House, Dave Harding was released from his regular PRG job as Senior Lighting Technician for Moving Lights to rejoin Neil Finn on tour. Dave is left to his own devices when designing for Neil so his main consideration on this tour was the spectacular backdrop designed by Noel and Sally Crombie.

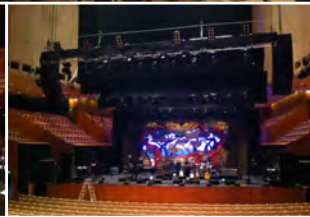
"It was immediately evident that the backdrop would be the main visual piece of the show and I would have to work around that," commented Dave. "The curtain is handmade and has many different fabrics, it's incredibly textured and quite gorgeous. Neil likes the old school look with real curtains and an old theatre style and the lights were designed around that."

Dave approached his lighting by pulling out band members with tungsten key light - there are no follow spots - with a stage wash, away from the act, as background and floor colour.

"Basically I'm pulling the people onstage out of the backdrop



GREG WEAVER
AT FOH CONSOLE



which is quite busy," he added. "Neither Paul nor Neil like to be blasted by a follow spot preferring something more soft and being a subtle theatre environment I do like to ride the intensity faders on the key light. With no video to compete with it wasn't an overly bright show, in fact I could run it very subtly."

Dave used three straight trusses with the front truss housing six VL3500 washes for basic cover, four VL3000 spots for backdrop work only and four VL1000 tungsten fixtures for key light of the downstage row, and audience blinders that were more 'warmers'. The mid truss held six VL3000 spots, four VL3500 washes and two VL1000 for key lighting upstage bass and drums. The back truss had the same configuration. On the floor were two VL3500 washes either side of stage with two VL3000 alongside of them.

Behind the backdrop were nineteen iPix BB4 LED lights to act as cyc lighting; the drape contained semi-transparent inserts through which you could see the light colour a white cyc positioned a metre behind.

Redhead photo floods were on the floor too with one at the foot of each microphone stand and six on two-metre stands around the back.

"The Redheads on the floor were great at highlighting the beautiful guitars the guys had as well as their handwork," said Dave. "The Redheads on the stands were generally used for interlude lighting between songs." For control Dave opted for a Jands Vista S1 and two M1 wings - not surprising as he was one of the original developers of it!

"I'm obviously very familiar and comfortable with the Vista!" he laughed. "It's incredibly easy to use. I generally like to have a lot of faders as none of my shows are ever written cue for cue. I don't build a cue structure for a particular song or piece - I'll build a look for the song and then I'll break up the Vista into groups of faders. So I run the whole show off faders, hence the two wings that give me ten more faders."

Audio: JPJ Audio (AAA in Perth) Lighting: PRG

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The Stone Roses have made a triumphant return from nowhere playing a string of dates that will lead up to the headline slot at Coachella in the USA. One of the most critically acclaimed acts of all time, the classic band line-up of Ian Brown, John Squire, Mani (aka Gary Mounfield) and Reni (aka Alan Wren) played at the Future Music Festival as well as a few sideshows.



STONE ROSES

The UK band, whose eponymous 1989 debut album is widely considered to be one of the greatest albums of all time, appeared at Sydney's Hordern Pavilion where my visit was arranged by local Tour Manager Aaron Chugg. Who would have dreamt that a few days later Aaron would pass away due to complications from a stroke. Just goes to show that life isn't a given and you should live it to the full.

Like most people in the industry Glen Johnson, lighting director for the band, struck up an instant rapport with Aaron and he had these words to say about him, "Aaron was very amusing and always had a funny story to tell. Whatever life threw at him, he just got on with it personally and professionally and it was just sorted. He will be sadly missed by myself and the rest of the Stone Roses crew. Our thoughts go to his family and friends".

Glen was looking after Paul Normandale's lighting design which at the Hordern was considerably cut down - just as well seeing as the UK stage incorporated a 180 metre wide LED screen and 470 moving lights!

"This is what we like to call the 60ft version," quipped Glen. "We haven't got the Martin MAC Vipers that we specified as there are only so many in the country and so many shows on at the moment. The supplier said we could have MAC700's instead and that's fine. Australia is always a compromise, every time I've toured here I have had to change something. We also couldn't get the four Novaflowers or Svodoba 2250 which is a shame."

The lighting was supplied by Novatech who delivered the rest of the spec as requested: Clay Paky Sharpy, Thomas PAR 36 4 Lite, MAC TW1 washes, 18" Mole PARs, Sunstrips, MAC101's, MAC250's, Vari-lite VL3500, Hungario strobes and Martin Atomics. Glen comments that the Novatech crew have been fine.

The band tour their own FOH control MA2 Lites, MA2 NPUs, Catalyst Mac Pro + Dongles, Folsom Image Pros, a DVI Matrix, Luminex Network Switches and a WYSIWYG System. Glen uses both MA2 lights; one set up for video and one for lights.

"They're on the same show file, in the same session and I use an MA new feature called 'surfaces'," he explained. "I

can set one console to be 1 - 15 faders and the other 16 - 30 faders, so two MA lights become a full size. It's a great feature."

There are two Catalyst systems, one tracking backup, and Glen takes a HD-SDI feed into Catalyst from the local video director and then he does his magic to it for the show. Unusually, the show is run as a 'busk' with a template for lights and a template for video so it is similar night after night.

"The busk format means I'm not just hitting go all the time, it's up to me to decided what I want to do at any given moment," Glen said. "It gives an extra feel to the show although it's very busy when there's just one of you."

The show is unashamedly about the video and content and never once has the band asked for any particular lighting. Their only comment on the lighting so far has been 'great'.

Although Glen likes to think of the lighting for The Stone Roses as low key, many people tell him it is not! But the lighting isn't waving around, there are no cue stacks - it's more about fading in and out banks and keeping the focus on the content and footage of the band. After all they have been away for twenty years and people want to see what they look like now.

"The show is definitely 70% about the video and 30% the lighting," commented Glen. "The amount of screen real estate is humungous on our full scale shows."

Being extremely experienced, Glen doesn't make a fuss over what gear he can get and will calmly 'make do' with what is delivered. However he has noticed on some trips - including Australia - that maybe he isn't getting the real deal.

"Sometimes I'm not allowed too close to the actual rig," he elaborated. "You walk past a fixture and think 'hmm, that's not quite right'! The classic is the Chinese copy of the Martin MAC101, as you fade them the actual colour fades too."

Glen was actually given MAC101 copies on a tour in Australia a while back and although he is happy to compromise in Australia, counterfeit products are not welcomed.



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BIZ TALK

CASHFLOW –V– PROFIT

By Julius Grafton



Like many enterprises, CX Network works with a cashflow forecast. Ours is cash based, which means it represents actual outlays and gross receipts. If we bank \$49 for a subscription, there is some GST embedded in there. When we pay our BAS (the Business Activity Statement) amount in the next quarter, we are remitting that GST, less any 'inputs' or GST expended along the way.

What this means is that we focus on the cashflow itself, less so than on the actual profit and loss inside the firm.

Many small business owners think they are making 'profit' only when there is spare cash in the bank. Wrong!

Very typically in the equipment biz, you will tend to spend money on new kit. When you do, consider where the money you spend comes from. If it's from earnings, ie: in the bank, then it is most likely 'retained profits'. Ten grand spent on gear is probably ten grand you've recently 'earned', so you'll need to pay tax on these earnings. This means you can only afford to buy 7 grand worth of gear, not 10!

Things come to a head when the quarterly (or worse still, annual) tax accounting is done. Often this is done late, because you don't care or don't remember. Then the problem is magnified as the accountant advises you owe \$43,500 right now to the tax office. You don't have the money.

Consider a business that adds some clients. Your natural instinct is to service extra work. If you then have to invoice the client, and wait 60 days for payment, you have in effect 'funded' growth. If the source of the 'funding' is cashflow, then it is again likely that your profit has been diverted. Into growing the business.

Wherever there is profit, there is tax. And as an industry we are bad at dealing with tax.

I personally know a reasonable number of freelancers who have not paid tax for a very long time. I also know an even greater number of musicians in that same boat. Typically they are not registered for GST. They do have an Australian Business Number, but they do not 'add on' GST on their invoices. Because they do not wish to interact with the tax office.

Tax investigators don't need to go far to reel you in. Once they have you in their sights, they can and will freeze your bank accounts without warning. I know people who've had their account frozen in error, because they share a generic name with a tax suspect! It can take some time to reverse.

My general advice to anyone in any form of business is have a second bank account, preferably loaded with some funds. To avoid catastrophe, and to allow you to trade if you are locked up or locked out.

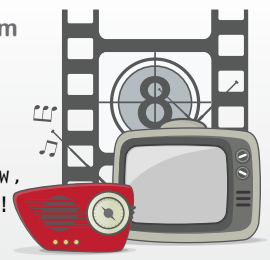
Avoiding tax is like smoking, drinking and playing with gunpowder. Eventually it will all catch up and you'll require hospital attention.



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Normally our approach to these regular CX articles is to provide a themed story each month.



Australian Commercial & Entertainment Technologies Association

However, this month with another membership year just completed and the Annual General Meeting just days away (as I'm writing this) it might be worth taking stock on some of the activities undertaken by ACETA over the past year on behalf of members and the industry more broadly.

Australian Entertainment Technology Week

This initiative has certainly proved resonant with the industry though it has taken some time and an awful lot of energy. Working, in particular, with ETF and the Entech Show ACETA is working to build additional value for all industry stakeholders – including the event organiser and exhibitors and delegates. The Hall of Australian Manufacturers is proving a good idea, including a turnkey affordable exhibitor package, and a commitment by ETF to generate media in the Middle East and Asia, and bring in overseas buyers. ACETA will also be hosting a manufacturers forum where Australian manufacturing companies will share their 'how to' knowledge. And of course there will be an AWAG briefing, which will be very timely in light of the deadline set on the Minister by a Parliamentary committee. He has to make a decision by mid year so let's hope it's a sensible one. More info below.

Industry guidelines

We wrote about these industry guidelines in the last issue of **CX**. Since then they have been finalised and will be presented to the ACETA AGM. In the coming weeks we will distribute the ACETA logo and quality mark for the use of members. The application of these guidelines across the industry will assist with our dealings with Government, with contractors, in tender processes and in developing greater export opportunities for Australian design and made products.

AWAG - Wireless audio

This is also a subject that consumes huge amounts of time and effort. Recently, we were able to force the Government and the ACMA into having to face the looming crises of users of radio mics. Through objecting to some of the recent communications amendments proposed by Minister Conroy

the Parliament demanded that the ACMA produce a wireless audio transition plan by June 30th 2013. This can still go one of two ways: the ACMA can come up with a real plan that will resolve most of the issues (yes, AWAG produced that for the Department of Communications and the ACMA nearly two years ago) or they can just offer up a few superficial activities so they can tick a box and say they have done it. Whatever the plan is, it will be a year or more later than it should have been and rest assured we will continue on their backs until we get a fair go.

In the meantime there have been a couple of small wins :

- The Government will release a small but useful block of spectrum for our use between 1790 and 1800MHZ. This coincides with some European spectrum so product is available for use in that space.
- The ACMA also approved the use of digitally modulated devices.

*More on this in the next **CX** and the next ACETA newsletter!*

RCM labelling

At one point in 2012 this was an important activity for ACETA. But since about mid year 2012 we have heard very little about the subject and the consolidation of C-Tick and A-Tick to this one mark. At this point we expect the issue to return in the second part of 2013

A Manufacturers Manifesto, careers resources and industry statistics

These are three programs that are in various stages of development but work on them has been continuing throughout the past year. We expect to see each these programs 'going public' over the next couple of months.

Manufacturers Manifesto

The document will establish a clear focus for the manufacturing sector of the Australian entertainment technology industry, and be a blueprint to institute programs and increase resources.

Historically under-resourced in keys areas such as R&D and export assistance, many feel the Australian entertainment technology manufacturing sector would benefit from a more singular and focused approach . There is no doubt that the Australian industry possesses the creative and engineering skills to significantly increase its capability as a source of supply, particularly in high performance technology.

Now that the industry has a peak body in ACETA a plan or, manifesto as we will call it, that develops and shares mutual resources is now a reality that can bring about positive change, particularly in increased international commercial activity and employment.

Careers resources

The basic materials are now complete and we will launch these resources at the Australian Entertainment Technology Week as part of Entech in July

Industry statistics

Again this has been a long term project but one that will soon see the light of day. Work is now almost complete on the statistical framework, such as what data do we want to collect, what data is important and so on. What we can say at this stage is that it will be comprehensive and timely. Our objective is to collect data in each of the major categories of audio, lighting and staging. Within each of the categories are a series of segments and sub segments that will provide sufficient detail for any industry participant to be able to plot the performance of the segments they participate in. In keeping with our Manufacturers Manifesto it will include the ability to report export sales. The reporting will be timely and simple to interpret. We are just finalising details of the collection mechanism prior to releasing a draft version for industry comment.

Welcome our new 2013/14 ACETA Board

As there is no need for an election, we can announce the new ACETA Board for the 2013/4 year and they are:

- Mark Allen** - Roland Corporation
- Frank Andrewartha** - Quest Engineering
- Shane Bailey** - NAS
- Pascal Bonnet** - Acoustic Technologies
- Stephen Devine** - Meyer Sound Australia
- Tony Hambling** - Murray Tregonning and Associates
- Leon Hart** - Amber Technology
- Frank Hinton** - ATT Audio Controls
- Peter McKenzie** - Philips Selecon
- Paul Mulholland** - Jands
- James Waldron** - Syntec International

A special welcome to our new Board members: Peter McKenzie and Pascal Bonnet, and a thanks to all our previous Board members who stood again.



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How is First Aid organised in your workplace? And how about when you are out on a job?

Did you know that there is a Code of Practice for First Aid in the Workplace? Don't get too depressed if you didn't, a recent study by St. Johns Ambulance showed that 65% of Australian employers had no idea it existed. In fact only 13% of businesses are aware of how to keep their employees safe. That is a bit scary.

Why is a solid First Aid policy so important? Well, administering First Aid in the first five minutes in a life threatening incident can significantly change the outcome. And that could be you needing it.

For many events and in general for concerts there will be a trained First Aider on site for the event or concert. But what about the actual high risk times – bump-in and bump-out? Who is looking after First Aid then? And equally important, how many of you check about First Aid when you arrive on site? Many people may assume that there is a First Aid person somewhere on-site. But you know what they say about ASS U ME?

And First Aid is more than having a \$12.50 First Aid Kit from Woollies somewhere in the office or the truck. It is a bit like a lighting desk or an audio console. All well and good to have one but if you don't know how to use it, it's not going to deliver what the brochure said. Peter LeCornu, St John's Ambulance CEO, said: "Every employer should be striving for best practice when it comes to first aid and St. John recommends conducting an initial first aid risk assessment evaluation to proactively ensure your workplace is compliant".

Just a few findings from the report: Estimated less than half of Aussie workplaces have appropriate workplace first-aid

Lesson #1 When there is blood everywhere is not the time to find out how to contact First Aid. Or to find out there is none.

resources (first-aid kits and signage). Approximately less than half (48%) of Australian workplaces offer accredited first-aid training to their employees. Only 24% of employees have participated in first-aid drills. Education was the best performing industry (still only 21.5%) and only 10% of hospitality businesses are first aid ready.

What does the legislation expect in a workplace?

The WHS Regulations place specific obligations on a person conducting a business or undertaking (PCBU) in relation to first aid, including requirements to:

- provide first aid equipment and ensure each worker at the workplace has access to the equipment
- ensure access to facilities for the administration of first aid
- ensure that an adequate number of workers are trained to administer first

Download a copy of the Code: <http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/first-aid-in-the-workplace>

aid at the workplace or that workers have access to an adequate number of other people who have been trained to administer first aid.

A person conducting a business or undertaking may not need to provide first aid equipment or facilities if these are already provided by another duty holder at the workplace and they are adequate and easily accessible at the times that the workers carry out work.

So what can you do to make sure there is First Aid when you need it? If you are working for a large organisation and don't know what the First Aid arrangements are, you could suggest that they get St Johns or a similar organisation in to do a detailed First Aid Risk Assessment on the business. But if you are a typical small business with a couple of workers and working on different sites everyday, that may just be a bit too expensive. So how do we fix that? We do the best we can.

- Step 1** – Start with an inventory of what you have in terms of First Aid kits and who has a current First Aid training.
- Step 2** – A risk assessment on the work you normally do and the type of injuries or illness these activities could cause.
- Step 3** – Match the findings of step 1 with step 2 to make sure everything is covered.
- Step 4** – Fill in the gaps, make sure everyone is aware of what is where and how to use it.
- Step 5** – Review regularly, including checking the contents of the kits, and adjust where needed.

Please note that this is a very, very simplified version of the guidelines, but it is better than nothing. There is no 'one size fits all' solution for this, you have to look at your work, your workplace, the size of the workplace, response time of emergency services, etc. to do this properly.

Do download the Code of Practice and follow their more detailed instructions. That will provide you with much more information than we can squeeze into these articles.

Lesson #2 You cannot be sued or penalised if you provide First Aid to the best of your knowledge and with good intent. It is covered in the Civil Liability Act 2002, Part 8 – Good Samaritans.<http://www.legislation.nsw.gov.au/fragview/inforce/act+22+2002+pt.8+0+N>

It is a very helpful document that contains a lot of useful information on how to assess your workplace. And involve everyone in the company in the process. That way everyone takes some ownership of the First Aid policy and it will be much easier to make sure things stay as they should be.

Consulting, co-operating and co-ordinating activities with other duty holders

What? What does all that mean? It means that if you are working on-site somewhere with a whole bunch of other suppliers (PCBU's) you may be able to share some of that First Aid duty with them. For instance if site management provides First Aid for the whole site at all times there are workers on-site and you have confirmed that the level of First Aid provided suits your workers, you can stop stressing out about who the trained First Aider on your crew is. But you have to make sure that you discuss your requirements (see Step 2 above) with them so that they know what to expect.

But it doesn't need to be site management. If you are preparing to go on a tour, it would be perfectly sensible for

Section 46: A person conducting a business or undertaking must consult, co-operate and co-ordinate activities with all other persons who have a work health or safety duty in relation to the same matter, so far as is reasonably practicable.

the audio, lighting, video and even staging company to agree who looks after First Aid for the combined workers during the tour. It would be silly to tour 4 First Aid kits and have 4 trained First Aiders on a small tour. But remember that when you book 10 loaders in each city, you have the same responsibility for them as you have for your own crew.

And make it very clear to the promoter that the First Aid provided is only suitable for the crew and does not mean that this person “can look after the XX thousand punters too”.

Types of first aid training

Now that you have worked out what you need in your workplace, you have to make sure that you have a few trained First Aiders to go with it. First aiders should hold nationally recognised Statement/s of Attainment issued by a Registered Training Organisation (RTO) for the nationally endorsed first aid unit/s of competency.

Applied First Aid training provides competencies required to recognise and respond to common life-threatening injuries or illnesses, including life-support using cardiopulmonary resuscitation (CPR), and to manage the casualty and incident until the arrival of medical or other assistance.

In most of the workplaces in the entertainment industry, first aiders are sufficiently trained if they can perform CPR

and treat minor illnesses and injuries. But some additional training may be required depending on your workplace risk assessment.

First aiders should attend training on a regular basis to refresh their first aid knowledge and skills and to confirm their competence to provide first aid. Refresher training in CPR should be undertaken annually and first aid qualifications should be renewed every three years. First aiders may also need to undertake additional first aid training to respond to specific situations at their workplace. For example, where workers have severe allergies, first aiders should be trained to respond to anaphylaxis if this topic has not been covered in previous first aid training. How many of these laddies do you need? The following ratios are recommended:

- low risk workplaces – one first aider for every 50 workers
 - high risk workplaces – one first aider for every 25 workers.
- The number and type of trained first aiders can be further refined by following the five-step guide in the Code of Practice. The Code of Practice will also provide details about suitable First Aid kits.

The challenge

Can the Australian entertainment industry overtake Education as the industry with the best performing First Aid culture? I think so, let’s go do it!

Disclaimer: Event Safety Alliance Australia has no connections whatsoever with St John’s Ambulance. But their research and report were important enough to give them a plug.

References: The Work Safety Hub blog posted by Robert O’Neill on Thursday, 21 March 2013 “Ignorance of Aussie First Aid, How Many More?” Safe Work Australia – First Aid in the Workplace Code of Practice.

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Community Services Database
Online database of geographical community services
W: www.crisissupport.org.au/jigsaw

National Aged Care Info Line ☎
(8.30am-5pm Mon-Fri excl. National public holidays)
T: 1800 500 853
W: www.health.gov.au

Salvo Care Line ☎
T: 1300 36 36 22 (24/7)
W: www.salvos.org.au

Seniors Portal
W: www.seniors.gov.au

Entertainment Assist provides crisis support, preventative assistance & education programs for Australian entertainers & back stage people. Tax deductible donations to Entertainment Assist allow us to continue providing critical services to entertainment industry people. Discover ways you can donate to Entertainment Assist by visiting:
www.entertainmentassist.org.au

CRISIS SUPPORT

Emergency *
Police Fire and Ambulance
T: 000 (24/7)

Kids Helpline *
T: 1800 55 1800 (24/7)
W: www.kidshelp.com.au

Lifeline *
T: 13 11 14 (24/7)
W: www.lifeline.org.au

MensLine Australia *
T: 1300 78 99 78 (24/7)
W: www.mensline.org.au

Salvo Crisis Line *
T: 1300 36 36 22 (24/7)

Suicide Call Back Service *
T: 1300 659 467 (24/7)
W: www.suicidecallbackservice.org.au

ENTERTAINMENT ASSIST
www.entertainmentassist.org.au

ENTERTAINMENT ASSIST



16-25 Year OIGS

NATIONAL SUPPORT SERVICES DIRECTORY

Before times get tough, talk to someone or ask for help

HEALTH SERVICES

Headspace National ☎
W: www.headspace.org.au

Reach Out ☎
W: www.reachout.com.au

Beyond Blue ☎
The National Depression Initiative
W: www.beyondblue.org.au

Carers Australia ☎
Carer Advisory & Counselling Service
T: 1800 242 636 (8.30am-4.30pm)
W: www.carersaustralia.org.au

Counselling Online ☎☎
Alcohol & Drug related concerns
T: 1800 886 236 (24/7)
W: www.counsellingonline.org.au

Life Circle Australia ☎
People diagnosed with serious illness & their carers
T: 1300 364 673 (24/7)

Sane Helpline ☎
T: 1800 18 SANE (7263) (8am-5pm Mon-Fri)
W: www.sane.org

LEGAL & FINANCIAL

National Children's & Youth Law Centre ☎
W: www.lawstuff.org.au/lawstuff

Centrelink ☎ (8am-5pm)
Employment Services T: 13 2850
Youth & Student Services T: 13 24 90
W: www.centrelink.gov.au

Centrelink ☎ (8am-5pm)
Disability, Sickness & Carers T: 13 2717
Employment Services T: 13 2850
Family Assistance Office T: 13 6150 (8am-5pm)
Seniors T: 13 2300
W: www.centrelink.gov.au

National Gambling Helpline ☎☎
T: 1800 858 858 (24/7)
W: www.gamblinghelplineonline.org.au

National Legal Aid ☎
W: www.nla.aust.net.au

LEGEND
☎ Crisis Support & Suicide Prevention
☎ Telephone Counselling
☎ Information & Referral service
☎ Online Counselling
☎ Face to Face Counselling

RELATIONSHIPS

Kids Helpline *
T: 1800 55 1800 (24/7)
W: www.kidshelp.com.au

The Line ☎
T: 1800 200 526 (24/7)
W: www.theline.gov.au

1800 RESPECT ☎
Sexual assault, domestic & family violence
T: 1800 RESPECT (1800 737 732) (24/7)
W: www.1800respect.org.au

Al-Anon Family Groups Aust ☎
Hope & help for families & friends of alcoholics
W: www.al-anon.alteon.org/australia

Alcoholics Anonymous ☎
W: www.aa.org.au

Relationships Australia ☎☎
T: 1300 364 277 (8am-5pm)
W: www.relationships.com.au

Family Relationships Advice Line ☎
T: 1800 050 321
8am-8pm Mon-Fri, 10am-4pm Sat except Public Holidays
W: www.familyrelationships.gov.au

KEEP ON TRUCKIN' TRUCK LESSONS LEARNED FROM LIFE

IF, AS THEY SAY, EXPERIENCE IS THE BEST TEACHER, THEN EVERYTHING THAT'S HAPPENED TO ME WITH TRUCKS TO AND FROM GIGS HAS IN SOME WAY TAUGHT ME A LESSON. AND THAT IS - NEVER TO DO IT AGAIN!

For example – changing a flat tyre on the way back from Mt Gambier, before I was knowledgeable enough to know that truck wheel nuts have a Left Hand Thread on the passenger side wheels. Oh, what fun we had trying to loosen the bloody things, even pulling a lighting bar from the back of the truck and slipping it over the wheelbrace to give it some extra leverage!

All that did, of course, was snap the wheelbrace in half, leaving us 'f---ed and far from home', as Shakespeare so aptly put it. Luckily after 20 minutes of staring vacantly into space, a very helpful farmer stopped, took it back to his farm and welded it back together so well that you couldn't even see where it had broken.

"Jeez, thanks mate," I said, a little lost for words. "Here, I'll give you a hand," he said kneeling down in the dirt. "Course, you know that left hand truck wheels have left hand threads, don't you," he continued as he slipped the wheelbrace over the first nut. With a single left hand twist it spun off. Ditto for the other four!

We stood there open mouthed. Left hand threads! Who would have thought it? Only a Chrysler owner, that's for sure. If only I'd bought a Valiant sooner! In less than no time we had the spare wheel on, thanked our benefactor profusely, and were on our way back home.

Then there was the time the crew rang me on the way to the good old Astradome in Traralgon, saying that the water pump had just fallen off the engine. Luckily it was mid-afternoon, so there was time for me to whizz off to the local Toyota dealer and grab a replacement pump and meet the guys by the side of the road with a spare truck. While they loaded the gear from one truck into another, I replaced the pump. Just as they started to drive off, I realised we needed some water to refill the radiator, so I waved them to a stop.

Jim leaned out.

"What's the matter?" he asked.

"I'll need water for the engine." I replied

"But we don't have any." he said

"What about the emergency container of water behind the driver's seat?"

"Er...we used that last week." He and Chris looked sheepish

"What, and you didn't refill it?" I yelled.

They looked at each other. "Er...no I didn't. Did you Chris... er no..er"

Their mumbles drifted off into silence

"Well you know what we'll have to do, don't you?" I asked.

"No, what?"

I walked over to the truck, found the empty container, brought it back and made an unzipping gesture.

"What - have a leak in it?" gasped Jim

"That's right" I said, "If I don't put something in the engine will seize."

"But I don't need to go yet," said Chris.

"Too bad," I said, "We'll all have to try!"

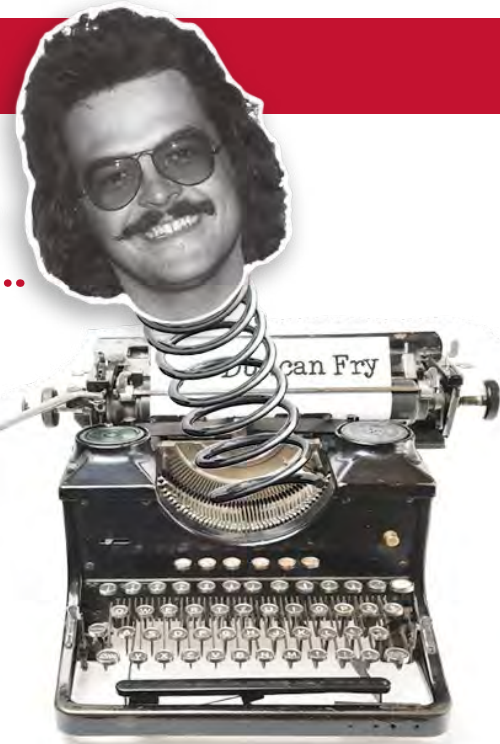
So one by one we took the container into the bushes, and between the three of us managed to get a couple of litres of organic coolant.

I started to pour the contents into the radiator, careful not to splash it on myself. It smelled as though we'd all been on a steady diet of asparagus and antibiotics for the past week.

It didn't come close to filling the radiator, but I figured that with an empty truck and a very light touch on the accelerator, the engine would stay under boiling point until I got to a service station.

And amazingly it did. Ten minutes later I coasted into the nearest Bee Pee and topped the water up. Of course, once the emergency was past I promptly forgot all about it, but a week later I got some gigs at the snow, so I dropped the truck off at the mechanics on the corner and told him to give it a bit of a check over.

"I don't want anything to go wrong up at the snow," I told him.



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**PREMIUM
TIRE SERVICE**

Of course something did go wrong, but it had nothing to do with the radiator!
Halfway to the first snow gig, we were cruising steadily along when suddenly a semi-trailer rocketed past us from the other direction.

“BANG!” - a rock leapt up from the road and shattered our windscreen. One minute we were doing fine, the next we were cocooned in a white fog.

We both yelled out “Sh-i-i-i-i-t!”, stood on the brakes and we pushed the glass pieces out with our hands so we could see where we were going. The truck came to a standstill and I jumped out.

We pushed the remainder of the glass out of the windscreen hole, swept it off the road, and got back on our way. Now, I don’t know how many of you have driven any distance without a windscreen, but boy is it COLD! And windy, and wet.

By the time we reached the gig we were frozen, our teeth literally chattering with the cold. It was half an hour after arriving before I managed to get my fingers to move.

The first night was just a one gig warmup for the band, so the next day we drove to a service station to fill up, and managed to buy a plastic windscreen, made of thin polycarbonate, totally clear, very strong, but brittle. We stretched it across the windscreen frame and liberally applied gaffer tape around the edges to hold it on. And it worked. It flapped a bit in the breeze, but it was a damn sight warmer in the truck with it than without it.

The only problem was, that every 25 k or so, the constant flapping would fatigue the brittle polycarbonate, making it even more brittle, and it would suddenly crack. So we’d have to stop and put some more gaffer tape over the crack.

After 2 weeks of touring around the snowfields, we had more gaffer tape than windscreen! Driving was like peering through a chunky spider’s web. And when it rained - crikey, don’t ask. The wipers would scrape their way over the high points of the screen, get stuck in pieces of tape and peel it off. You had to hang on to the wheel, find a clear space that was being wiped, jam your face up against it and peer out at the wet road. Really conducive to safe driving!

At the first gig we had picked up the band’s stage roadie, a guy called John who thought that he was somehow better than us. We soon put him straight. All he did was whinge. About anything, but mainly about the noise the windscreen made as it flapped away in the breeze. It didn’t really bother Chris and I as we both had our headphones on.

“Hey, can’t you stop it making that noise?”

“No”

“That noise is driving me crazy; can’t you get a new windscreen?”

“No”

“I can’t hear myself think with all that noise the windscreen’s making. Isn’t there anything you can do to fix it?”

“No”. On and on he went in this mode, until my well of tolerance ran bone dry. I turned to him and grabbed his arm. “Look”, I said through gritted teeth, “It may be a little noisy in here, but it’s a whole lot better than having no windscreen. It’s bloody cold out there, so stop your whingeing and just be grateful that we’ve got a windscreen at all. OK?”

He nodded, and quietened down for a few minutes. Then he started up again.

“There must be something you can do about the noi...!” My hand clamped around his throat.

“Stop the truck” I yelled. “We’ll teach this little shit a lesson”. I opened my door, and dragged him out, climbed back in and closed the door.

“You want to see how cold it is without a windscreen?” I asked. He stood there open mouthed, for once not saying a word. “You can travel out there for a while. Then maybe you’ll appreciate it being warm and noisy in here”.

Chris put the truck in gear and we slowly pulled away.

“Hey wait guys - I was just kidding - wait, wait.” He ran alongside and jumped on to the running board, hanging on to the big West Coaster rear vision mirror.

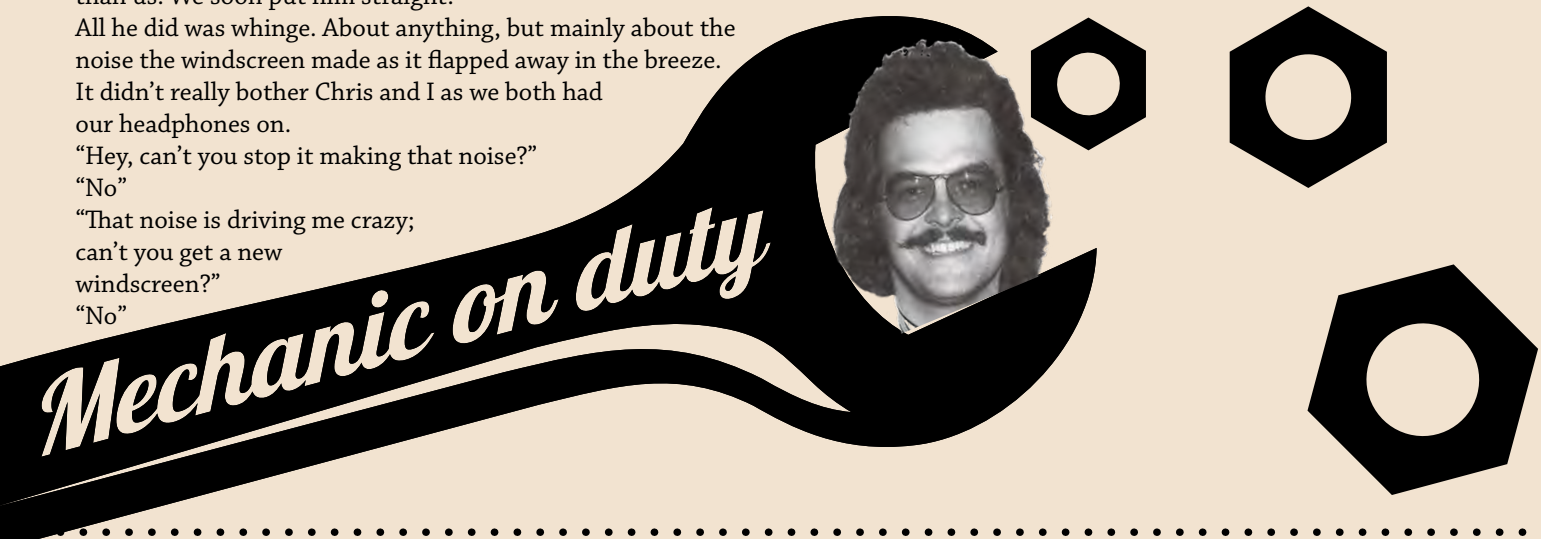
“Wait, stop, I’m sorry guys, please, wait...shit it’s cold out here...wait, please let me in...I’m getting really cold, guys...I won’t complain any more...please” He begged and pleaded in this manner for several kilometres, until I could see his face and hands starting to turn blue.

“What do you reckon, Chris? Let him in now?” I asked.

“Suppose we’d better before he freezes out there and we have to do his work as well,” he replied.

So, we stopped and let him back in. He didn’t say much at all, just sat huddled in the middle rubbing his hands together and muttering to himself!

The next day he asked to travel with the band, and pissed them off so badly that they sent him home after the gig, happy to pay us extra to do his work as well!



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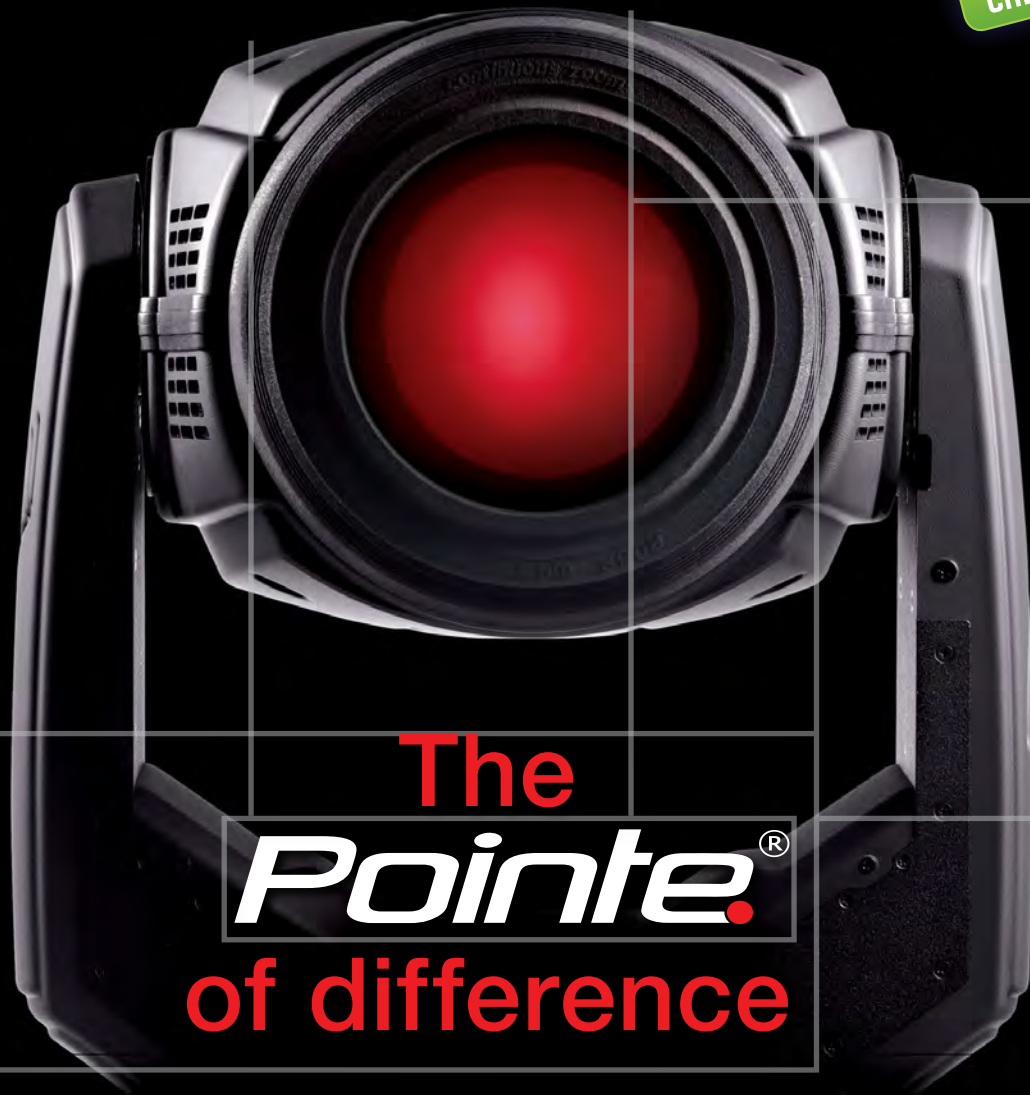


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