

+ InfoComm Report
Technologies
 Arrive and Depart: what is hot?



MONTHLY TECH NEWS

CX116 JUL 2016
 \$7.50 AU



Get Disrupted: **+**
 Prepare to change as winds of change blow

Wrong Way Fry **+**
 When town names look similar

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- LSC Mantra Lite
- QSC Core 110F
- JBL SRX 835P and 818 SP

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- Baby Animals
- New Order at Sydney Opera House

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- Simon Byrne: must have ABN
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- Listen Here



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"Radial DI's do exactly what they are supposed to do: deliver great audio."

~ Paul Boothroyd

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~ Paul 'Pab' Boothroyd
(Paul McCartney, AC/DC, Paul Simon, Faith Hill, Pink)

"With the PZ-DI, we were able to integrate multiple piezoelectric devices seamlessly and with glorious results. Radial has once again proven they are a cut above the rest."

~ Brad Madix
(Rush, Marilyn Manson, Shakira, Def Leppard)

"Radial direct boxes make everything I put through them warm, punchy and clear. They are great DI's"

~ Chick Corea
(Electric Band, Miles Davis, Return to Forever)

"The JDX gave me all the character and distortion without the worries of bleed and feedback. I was so surprised how close it sounded to the SMS7, I had to double check the patch."

~ Jim Warren
(Radiohead, Arcade Fire, Nine Inch Nails)

"We struggled for years on Zombie to get clean audio from the video servers...the JPC solved our battle. I finally get clean CD quality and do not cringe at the noise levels. The JPC is great!"

~ Joel Lonky
(Rob Zombie, Goo Goo Dolls, P. Diddy, Billy Idol)

"Radial DI's provide the flexibility I need to perfectly match any situation I come across. I specify Radial exclusively for every tour I mix."

~ Dave Natale
(Rolling Stones, Joe Cocker, Lionel Richie, Fleetwood Mac)

"The Radial JDX is almost too good to be true. The artists hear the sound they are playing and I'm not fighting mic coloration any more. I just plug it in & turn it up."

~ Jon Garber
(Rascal Flatts, Brad Paisley, The Band Perry, Chely Wright)

"On the Santana tour, we have Radial J48's on guitars and Radial JDI's on keyboards. Since January this year we have traveled all over and the Radial DI's have worked great!"

~ Rob Mailman
(FOH engineer - Santana)



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Las Vegas

We lead this month with an in-depth report from the InfoComm Trade Show in Las Vegas. This is where AV converged with IT a while back, to become ICT – Information Communication Technology.

Wikipedia: Information and communications technology (ICT) is an extended term for information technology (IT) which stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information. It's a real important part of our tech universe and as Jason says in his report, 'The Internet of Things (IoT) has produced questions that are only answered now'. You'd probably better read it.

Disruption

My Biz Talk page this month deals with disruption and the probable shift to pre-configured rigs in venues. After writing this I flew to the Gold Coast for Mick James' funeral and had a similar discussion with some production company guys at the wake.

Sure enough they reported that their

firm was in consolidation mode, and that the daily grind of preparing a system, installing it, doing a show, and then reversing the procedure seems incongruous. In short, their business is in slow decline, and they are riding it down.

Then came news Staging Connections have shut their Melbourne and Perth offices and warehouses, distributing the equipment amongst their in-house venues in those towns.

I grew up with prepare, install, perform, pull down, load out and returning gear to the shelves in hire firms. I ran several. I did touring production where the system was a package without prep. Now I clearly see: MOST models where we truck a pile of stuff into a venue are endangered.

Clever versatile design and installation are the main game now, as every venue attempts to make the house system fit the needs of the hirers.

Departure

Just after signing off this magazine I hit the road for my first three week holiday since 1989. This is my honeymoon, having married Kate on June 24. Hopefully as you read this we will be somewhere in Europe enjoying long summer evenings and trying to avoid business and media.

As soon as I get home I have just a week

in the office before our ENTECH NZ Roadshow, which excites me greatly because it is new. I am increasingly impressed at the 'can do' attitude of our Kiwi brothers and sisters. Nothing has been a problem.

They are more pro-active than us Australians. Where I am used to having to push sometimes to get the service level we need, over the ditch they are reaching out first and pre-empting things. It augers really well for the Roadshow, and we are confident it will be a resounding success. Like every Roadshow we have done. Now we have four.



Julius Grafton
CX Magazine

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George Chrysostomou (left),
David Bowron (centre),
Darren Russell (right).



STAGING RESHAPE MELBOURNE AND PERTH

OFFICES CLOSED IN FAVOR OF IN-HOUSE VENUES

Staging Connections have retrenched ten staff in Melbourne and four in Perth after closing state offices and hire warehouses.

“There are too many overheads”, CEO Tony Chamberlain told CX.

“We have moved equipment into the venues, stocking them better and giving venue crew more responsibility. It makes for better service with no waiting for truck deliveries”.

Staging Connections Group was recently acquired by USA events giant The Freeman Company. It has around 700 staff and crew in Australasia, and operates in around 75 in-house venues.

Canberra Merger

Elite Sound and Lighting merge with 4412



Two of Canberra’s most respected Audio Visual industry companies, 4412 and Elite Sound and Lighting, are merging and will trade as Elite Event Technology. The merging of the two companies will pool together the collective skills of company directors Darren Russell from Elite and George Chrysostomou and David Bowron from 4412.

David and George, both Canberra born, are looking forward to working closer to home and bringing with them a passion for excellence and experience earned working nationally and internationally on major corporate and entertainment events.

Originally from the South Coast of NSW, Darren moved to Canberra in 2000 and together with wife Keri has built a successful business in

the Sound, Lighting and Vision industry providing sales, installation, hire and full-scale production.

“The beauty of this merger” says Darren “is that we’ve been growing year on year and had reached the peak of what a family company could achieve and knew I needed partners to continue the growth; 4412 are a perfect fit”.

“We’ve worked as technical directors, production managers and site managers on a variety of events but don’t own a lot of equipment” says George “and we’ve worked closely with Elite previously because they do own state of the art equipment” adds David.

It became obvious to all three Directors that combining the businesses would result in a company greater than the sum of its parts and a true one-stop-shop. The new venture will be housed in the purpose built Elite warehouse at Hume ACT.

WWW.EETECHNOLOGY.COM.AU

Mick James RIP

Gold Coast identity dead at 61

He was synonymous with the world of nightclub glitz and sleaze, omnipresent on the entertainment scene and his funeral featured hundreds of industry types. Some of them on the run from creditors, ex wives and the tax office.

Mick James was the go-to guy for installations and repairs in the hundreds of bars and clubs scattered up and down the Gold Coast, a tourist mecca and Australia's version of Orlando-meets-Miami.

For many years he was the tech manager of The Playroom, a wonderful institution that saw every major and most minor rock bands playing three, four or five nights a week. Operated by the colourful Beryl Carnell, The Playroom was highly popular with bands and crews and Mick was in the middle of everything.

He went on to hire, install and sell equipment and like many Queenslanders he preferred local suppliers which is why Cuono Biviano from ULA and Harry Lloyd Williams from AT Professional were very sad to see him pass away from cancer in June.

"Tell him about the watch", Harry said as Cuono and I shared Mick stories. "Yes we bought him a Rolex a few years ago", said Cuono, "and took him out to dinner as a big thank you."

"I hand him the box, he opened it up and said 'A watch. I don't wear a watch'", continued Harry. "I showed him the insurance receipt, it was worth \$4,500", said Cuono. "He didn't really know what a Rolex was".

"The next week he was headed down to ENTECH, and I suggested he leave the watch at home since he owed most of the exhibitors money!" Harry said.

At that point in our discussion, Harry ran over to Mick's three daughters at the wake and suggested they find the Rolex.

His funeral was surreal, the celebrant was channeling some kind of 'rock chick', in an AC/DC T shirt and leather jacket. The daughters and the mates all drank shots of Bourbon from a bottle sitting on the cask.

Afterwards we were directed to line the driveway outside and clap along to 'It's a long way to the top' as the hearse drove off. It could have been



cringe-worthy, but it was The Gold Coast, and it was Mick's funeral. Presumably he would have approved.

Mick's mates recounted tales of a happy guy who loved a lot of Bourbon and a home cooked meal. They met every week to play - and cheat at - pool at RQ Tavern in Robina. A message from a felonious DJ who is now safety hiding offshore was read at the funeral. Glancing around I could see that a debt collector could have had a field day.

Mick is remembered for technical excellence and a strong passion for the industry. He is less remembered for paperwork and paying his bills on time, like many of his era he focused more on what he enjoyed and less on what he figured he could avoid.

He will be sorely missed.

- Julius Grafton





Matthew Packer of Biamp and Sean Tobin of Midwich with Jason Allen on ICTECH TV at Infocomm

Biamp Moves Midwich Appointed

Sean Tobin of Midwich and Matthew Packer of Biamp Systems announced on ICTECH TV during Infocomm that Midwich Australia would distribute Biamp from late July. Biamp were handled by Hills, which acquired the rights when it bought the Audio Products Group business two years ago.

“It’s a strong global brand, we’re investing heavily with extra head count”, Sean said.

“We’re delighted to have found Midwich, a company that everyone is happy to partner with”, Matthew Packer told ICTECH TV.

Midwich is part of Midwich Group, and came to Australia via acquisition of Image Design

Technology several years ago.

Biamp started forty years ago making pro audio mixers, amplifiers and electronics. It reinvented itself in recent years and has become one of the leading suppliers of ‘platform’ dsp audio.

Biamp’s Tesira delivers audio processing and distribution, interfacing with and moving audio between multiple protocols, from AVB/TSN to CobraNet to Dante. Biamp’s Vocia offers voice evacuation, zoned paging, networked paging, and more.

The Biamp business in Australia is growing, and is premised on extensive user training for integrators.

BIAMP TESIRA





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NEW AT INFOCOMM 2016!

A huge amount of product was released in Vegas this year, with a strong focus on 'complementary tech' that neatly solves problems in most installations. See our full show write-up for more info!

AMPHENOL AMPHE-DANTE ADAPTERS

The Amphe-Dante range of Dante digital to analogue audio adapters are engineered to simplify the connection of analogue equipment, including amplifiers and loudspeakers, to Dante networks. Their unique cable dongle housing design is a first for Dante-enabled products, allowing integrators to mount the adapter without the costs of rack space. Amphe-Dante adapters receive audio channels from a Dante network and provide low-latency audio via an XLR connector to analogue audio equipment. Any audio available on the Dante network can be routed via the XLR outputs to an amplifier, powered speaker, mixing console, dsp or device.



Australian Distributor: Amphenol Australia
www.amphenolaudio.com or (03) 8796 8888

BIAMP TESIRALUX

Biamp Systems TesiraLUX introduces low-latency, 4K networked video distribution to the Tesira platform, transporting both audio and video signals over a single network through AVB/TSN. TesiraLUX initially includes an AVB video encoder and an AVB video decoder. The encoder features one HDMI port, one DisplayPort port, and includes two mic/line level analog inputs. The decoder includes one HDMI port and two line level analogue outputs. TesiraLUX supports the latest video formats, including 4096x2160 at 60Hz, high dynamic range (HDR) and the Rec. 2020 colour space. It can accept video at up to 16-bit colour depth with 4:4:4 chroma subsampling. It also supports 8-channels of embedded PCM audio which can be broken out to be routed and processed independently.

NEW Australian Distributor: Midwich Australia
www.midwich.com.au or 1300 666 099



BLACKMAGIC DUPLICATOR 4K



Blackmagic Design have released the Blackmagic Duplicator 4K, which allows delivery of Ultra HD content to consumers by recording files onto inexpensive SD cards that can be distributed to customers the moment an event is finished. Featuring 25 built in SD card recorders, multi rate 12G-SDI connections with loop thru output, and RS-422 control, the Duplicator 4K encodes video

using H.265 and saves files in an open file format on to standard SD cards. The built in real-time H.265 hardware encoder gives customers Ultra HD video, even at high frame rates up to 2160p60. With H.265, Ultra HD content is not much larger in file size than a HD file would be in the older H.264 standard. Standard SD cards can be used.

Australian Distributor: Blackmagic Design
www.blackmagicdesign.com or (03) 9682 4770

BLACKMAGIC VIDEO ASSIST 4K

The Blackmagic Video Assist 4K is a portable all-in-one professional monitor and video recorder that can be used to add professional recording and monitoring to any SDI or HDMI camera. It has a bright, high res 7 inch monitor.



CRESTRON AVIA



05

Crestron's Avia range includes five Avia DSP models, a companion line of network-controlled and monitored amplifiers, as well as a convenient line of modular utility amplifiers that allow integrators to mix and match capabilities in less than 1U of rack space. Avia DSPs and amplifiers support audio over IP using Dante, and integrate natively with DigitalMedia, touch screens, and Crestron Fusion Cloud. The new DSP Tool provides a workspace that streamlines audio design and programming. The channel-strip architecture

simplifies configuration, allowing programmers to save, modify, and manage a library of custom strips. Built-in tools include a spectrum analyzer, virtual mixer, EQ editor, and Crestron speaker profile library. New controls and functions can be added on-the-fly so programmers no longer need to "re-wire and recompile" to make changes. The DSP Tool also enables programmers to drag and drop audio controls and VUs directly into VT Pro-e® software for touch screen UIs in one room or hundreds of rooms, in minutes.

Australian Distributor: Crestron Australia
www.crestron.com or 1800 555 040

HITACHI LED PHOSPHOR PROJECTORS

Hitachi has unveiled the two new models of its LED phosphor projector family, the LP-WU3500 and LP-WX3500. They feature an Ultra Solid engine with High Lumen Density technology targeting 3,500lm and superior colour space. Their true 20,000 hours system life virtually eliminates maintenance as the LED light source will never need to be replaced.

Australian Distributor:
Hitachi Australia
www.hitachi.com.au
or 1800 448 224

06



EPSON PRO L25000U

Epson have expanded into the rental and staging market with the Pro L25000U installation laser projector – the world's first 3LCD laser projector with 25,000 lumens of colour brightness and 25,000 lumens of white brightness. As part of the new Pro L-Series laser projector line, the Pro L25000U integrates a sealed optical engine with laser-light source with an inorganic phosphor wheel in combination with inorganic LCD panels for up to 20,000 hours of virtually maintenance-free operation, including 24/7 use for applications that require continuous projection.

Australian Distributor:
Epson Australia
www.epson.com.
au or 1300 361 054

07



MIDDLE ATLANTIC UNIVERSAL TECHBOX



Middle Atlantic Products have launched the UTB Series Universal TechBox, a low-profile, unique solution for discretely mounting AV equipment and small devices underneath a table surface within meeting spaces.

Australian Distributor:
Amber Technology
www.ambertech.com.au
or 1800 251 367

08

TVONE ONERACK

tvONE's ONERack is a universal, powered mounting system that improves rack installation of small devices. tvONE's design converts randomly sized, externally-powered devices from any manufacturer into slide-in modules that can be installed quickly and cleanly, and serviced easily. The ONERack allows high density mounting in three different chassis sizes.



Australian Distributor:
Corsair Solutions
www.corsairsolutions.com.
au or (03) 9005 9861

09

ETC COLORSOURCE CONSOLES



10

The ColorSource 20 and ColorSource 40 consoles provide hands-on lighting control designed for the latest technology. These affordable, portable desks specialise in streamlined, plug-and-play setup; when the console powers up, it uses RDM to recognize intelligent lights in the rig and auto-populates them in patch. Simply use the on-board touchscreen to drag each fixture into place on a customisable stage map, and you'll be programming in minutes.

The ColorSource 20 AV and ColorSource 40 AV consoles come equipped with HDMI and audio output, so that you can run sound cues, images, interactive Video Toy effects, sound-to-light effects and lighting cues from the same, compact device.

Australian Distributor: Jands
www.jands.com.au or (02) 9582 0909

EXTRON TOUCHLINK PRO

11

Extron have released three new TouchLink Pro touchpanel models, the 12" TLP Pro 1220TG, 10" TLP Pro 1022T, and the 5" TLC Pro 521M. All feature capacitive and vibrant glass touchscreens that provide more responsive control surfaces and greater viewing angles. The TLP Pro 1220TG features video preview inputs that support high resolution HDCP-compliant video from HDMI sources and Extron XTP devices. The TLC Pro 521M TouchLink Pro controller features a secure and powerful built-in control processor and supports Ethernet-controllable devices. All three customisable touchpanels feature faster processing and more memory. For ease of integration, these touchpanels receive power and communication over a single Ethernet cable.



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

ROBERT JULIAT
ROXIE



12

Ideal for small venues, the Roxie LED followspot has ultra-compact dimensions and low power consumption. Features include a long-life source, perfect beam shaping from 11° to 20°, removable fully closing iris, and an A-size glass and metal gobo holder. The Roxie is available in three colour temperatures; Warm, Neutral Day White, and Cool White.

Australian Distributor:
Show Technology
www.showtech.com.au
or (02) 9748-1122

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SENNHEISER TEAMCONNECT WIRELESS



Sennheiser's TeamConnect Wireless is the first go anywhere, portable wireless conferencing solution. The stylish portable solution is made up of four units – one master and three satellites that can accommodate 24 participants and are easily transported in a durable charging case. The units are wirelessly linked by a DECT connection and provide a flexible system that can be set up in virtually any room or table arrangement. Users can quickly connect their own Bluetooth smart device or computer wirelessly, with NFC making pairing with compatible devices simple. Wired connections are also possible via USB or 3.5mm jack cable.

Australian Distributor:
Sennheiser Australia
<http://en-au.sennheiser.com/> or (02) 9910 6700

SHOWPRO APOLLO LED UPLIGHT SYSTEM

The ShowPro Apollo LED Uplight System is a compact, high-power, outdoor-rated, cable-free, battery-powered LED uplight system. Features include on-board W-DMX, infrared remote, OLED menu, and road-worthy charging case.

Australian Distributor:
Show Technology
www.showtech.com.au
or (02) 9748 1122



TASCAM DR-10SG



The TASCAM DR-10SG combines both a purpose built shotgun microphone and a professional quality digital recorder in a single unit, addressing the need for better audio when shooting on DSLR. First and foremost, the DR-10SG features an extremely directional supercardioid microphone and an integrated shock-resistant mounting foot. The dual benefits of this design include the rejection of unwanted ambient sound during filming and the avoidance of physically transmitted noise from shutter or lens mechanisms. Australian RRP \$399 inc. GST.

Australian Distributor:
CMI Music and Audio
www.cmi.com.au or (03) 9315 2244



TRADESHOW REPORT

InfoComm 2016 – 38,833 Problems Solved

InfoComm's biennial Las Vegas shindig attracted **38,833 visitors** and **1,000 exhibitors**, making it the biggest AV tradeshow outside of Amsterdam's massive ISE. Attendance has grown almost 5% since the 2014 event, and I can attest that the show floor was busier and more frenetic than last time. Everyone was on a mission or in a meeting, including the **246 Australians** that were logged as attending the show. Most were there in search of technical solutions, which were happily in abundance; from connecting gear and analysing data, new projection and display technologies, to new ways to solve old practical problems common to every job.

Death of a Buzzword – RIP 'Convergence'

Happily, finally, we can all stop reading and using the hideously corporate marketing phrase that is 'Convergence'. We are now officially 'Converged'. At the Crestron booth tour on the Thursday morning of the show, **Jeff Singer, Crestron's Director of Global Marketing**, definitively stated that "Convergence has happened, we're past that. AV is IT and IT is AV." The integrated Crestron environment more than bears that out. The enterprise network switch is at the heart of what Crestron and every other AV vendor does. The philosophy is that the Ciscos and HPs of the world are really good at building this stuff and it's everywhere— why bother to make our own version? Talking about convergence or IP adoption being 'the way things seem to be going' is as quaintly anachronistic as wondering aloud if digital technology will catch on.



> Jeff Singer, Crestron's Director of Global Marketing.



Crestron's Avia DSP Tool interface

Death of Product – RIP Matrix Switchers

Nowhere is this change more apparent than in the sudden absence of an entire product category – the video matrix switcher. Quite simply, they have almost vanished, seemingly in the last few months. Every manufacturer worth their RJ45s is now making small endpoints, be they encoders, decoders, or both, and letting the enterprise network do the heavy lifting. With 10 Gigabit networks standard in most new roll-outs, why not?

Notable examples of this change include Harman's N1000 Minimal Compression Video Over IP family, which added the **AMX SVSI NMX-WP-N1512 Windowing Processor** – simply get up to four video streams to it over the network, and, with presets like quad, window-in-window, and 3+1 in the box, crop, scale, and position at will. Alternatively, make your own user-defined configuration. Aussie newcomer iMag Systems takes a similar path with their Lightning series of Video over IP products that adapts Aptovision's BlueRiver NT+ chipset and adds the homegrown Lightning Controller for control over IP. Biamp's new TesiraLUX implementation of AVB follows the same model, **with AVB now (finally!) supported by Cisco**. The only arguments in video land now are what resolution and bit depth is appropriate, and whether or not compression is bad or necessary.



AMX SVSI NMX-WP-N1512 Windowing Processor

What's Your Resolution?

Every video over IP manufacturer was running a compression test on their stand – here's two screens, one with native resolution (**usually 4K**) and one with our special proprietary compression/our excellent implementation of a compression standard like H.264 – pick which one is which! Bet you can't! And I didn't. In fact, I did worse than chance, which, if anything, shows that to mere mortals who aren't video experts, it apparently doesn't matter. But that didn't stop some manufacturers declaring that you were mad if you didn't make sure everything can run native.

Only Aptovision's test, which put you in charge of a computer running native 4K and then challenged you to operate it using three different streams that had been compressed three different ways, eloquently demonstrated why compression can be detrimental. Specifically, latency makes GUIs useless, and compression can make text indecipherable on a computer screen. But that's not really an issue if you're just trying to push visuals and digital signage around a building.

Resolutions and bit depth are something of a format war at the moment. While the differences between 4K and HD can be not that clear on some displays, the difference between 4K and 4KHDR is stark. The extra colour depth in High Dynamic Range video is obvious even to a visual neophyte like me. Meanwhile, over at the Planar/Leyard stand, a massive Leyard TWA1.2 LED video wall demonstrated that more is better, with an incredibly realistic 8K image of a beach that looked like you could walk into it. 8K's superiority is immediately obvious, but for the time being, may be restricted to enormous outdoor screens that need that level of resolution just to look acceptable.



Blackmagic's Bob Caniglia shows off the rear of the Duplicator 4K

The Internet of Things – why it's not really 'A Thing'

I've been scratching my head about all the empty column inches this industry has collectively devoted to the concept of the **'Internet of Things'**. Considering it was a term made-up to sell consumer technology to the general populace (your fridge will do your shopping for you!), it was always a surprise to me that we started to see such pondering over it in the AV press. As we all know, we AV people have been putting 'Things' (and by that we mean 'things that aren't computers or smartphones') on the internet for years now. So why did InfoComm have an entire lecture area at the rear of the Central Hall devoted to it?

It's all clear to me now – it's a sales pitch directed at clients looking to upgrade their equipment. We've all been monitoring the status, usage, lamp hours and so forth of our AV devices over enterprise networks for ages. The 'IoT' pitch is about using data for improving your bottom line. Take a large office building – if you analyse all the

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data that your devices spit out, you can determine which spaces are used most, who uses them, where people are at any given time, and which bits of equipment are most important. Using that data wisely, you can increase the efficiency of your space, reduce power and maintenance bills, make your workplace more productive, and, so the theory goes, make more money.

I caught a bit of a presentation at the IoT pavilion on 'New AV Best Practice', which dealt with the new AV reality of installing, configuring and getting the most out of Internet

connected devices. Ironically, one of the first pieces of advice was to disable the functionality of the device that automatically connects it to the Internet. As contradictory and ironic as this sounds, it's not bad advice – a perfunctory Google search for 'unsecured webcams' should provide you a cautionary tale. If you install an Internet capable device and let it connect without changing its default IP address or log-in details, you are asking for trouble. As IoT connectivity becomes standard in all AV equipment, just imagine the fun that bored 15 year olds will have messing around with your unsecured meeting rooms.



Big Lasers, little LEDs

A major intergalactic shootout is underway between the big guns of projection, and they've bought their....big guns. Both **Panasonic** and **Epson** released really, really powerful laser projectors. In the Panasonic corner, the PT-RQ32KU 3-Chip DLP Solid Shine Laser Projector. With a healthy output of 27,000 centre lumens, no-one is going to complain it isn't bright enough. In a secret room only accessible accompanied by Panasonic staff, we witnessed a shoot-out with a major, established competitor. It was a fair fight. The thing I liked most about the PT-RQ32KU was the thoughtfulness of covering it with i-bolt points – no more bulky and heavy cages. I believe that video techs will really appreciate being able to rig these units closer together and take up less weight allowance on the grid or truss.

In the Epson corner, the Pro **L25000U** installation laser projector. At 25,000 lumens (measured properly in accordance with ISO 21118), it goes head-to-head with the Panasonic. It has future-proof 4K-ready powered lenses with lens shift and lens memory, 360-degree installation flexibility, diverse connectivity options, and sealed optical engine design. A clear Perspex prototype on the Epson stand demonstrated that nothing is getting in or out of this unit where it shouldn't. The promise of both Panasonic and Epson is longer life, less maintenance and a better return on your investment.



It's probably not safe to stand here - in front of the Epson Pro L25000U



Up close and personal with the Panasonic PT-RQ32KU in the secret demo room



Panasonic shows off, edge blending four projectors to a curved screen

Hitachi were showing off a development at the other end of the scale – LED Phosphor source projectors. Initially in the lower power, higher volume part of the market, the LP-WU3500 and LP-WX3500 run at 3,500 lumens. Again, the focus is on low-or-no maintenance; with lamps gone and long-lasting light sources like LED in place, the last point of failure to eliminate will be the Phosphor wheel.

Hitachi are claiming the magic 20,000 hours life cycle for the LP series, which is attractive to the types of retail, corporate and institutional customers that they are aimed at.

Hitachi Led Phosphor projectors in action - perfect for retail





> Middle Atlantic's Megan Knedler with the Hub



> The Middle Atlantic UTB in both horizontal and vertical mounting modes

I love seeing a universally acknowledged irritation removed with creativity and careful design. There were a slew of unconventional technology solutions at InfoComm16 that had me slapping my forehead and wondering why no-one had thought of it before. These are the kinds of things that save real time and real money on almost every job, and, in some cases, actually open up new revenue streams. The clever folk at **Middle Atlantic** have responded to the rise of the Huddle Space with the UTB Series Universal TechBox. This clever bit of racking is, put basically, a metal box in two pieces with holes cut into the bottom. But what it actually IS, is brilliant. Huddle spaces and the ever-smaller collaboration tech that go with them don't give you anywhere to mount or hide equipment, and said tech is not a standard rack-mount size anymore. So where does an integrator put these things? Take the top of the UTB and

mount it under a table, or on its side. Mount your tech in the cut-out patterned base, which MD engineers tested to fit just about everything electronic on the market, and clip into the top. Done.

Middle Atlantic are also selling furniture designed for the huddle space in mind. Their Hub is a complete huddle space furniture and tech solution. It's a desk with a mount for a flat screen that also includes a built in rack, plus cable and power breakouts built-in to the desktop. Two x four outlet power strips are included, there's a 'technology pedestal' (rack) underneath, plus also another 4RU of space with room for additional cable retractors and power distribution. The tower to mount the screen is optional, and can also be used freestanding. Integrators – you are now in the furniture business.

tvONE's ONE rack is another product made in response to the prevalence of 'many small devices' in any given installation. It's a racking, mounting, powering and cooling solution for pretty much any kind of technology. Got a bunch of converters, small switches, encoders, decoders and widgets that all run off wall-warts and are wildly different sizes? Mount them in ONErack's blade system, connect them to 5v, 7.5v, 9v, 12v, 13.5v, 18v, & 24v power as required (up to 35 watts), add the fan fixture at the front and you're done. If something goes down, pull out the blade and replace with like. No messing about with cable ties, chasing power supplies, or ruining your beautiful cable management. Genius!



< The tvONE ONErack in action

With Dante having taken over the known universe, it's amazing this product hasn't existed before - Amphenol's Amphenol adapters take Dante audio into their PoE enabled Dante port and output it from either one (the RJD1112) or two XLRs (the RJD1212-0500). Now you can get Dante audio into practically any pro audio device that doesn't carry Dante natively. Both BSS and QSC have added USB functionality to their processing environments with the Soundweb London BLU-USB and the Q-SYS I/O-USB Bridge respectively. The BSS BLU-USB is a DI-like device that can send and receive eight channels of audio, and connects to the Harman environment via Blu Link. The Q-SYS I/O-USB Bridge goes one better and emulates a webcam video driver, AEC speakerphone audio driver, and multi-channel soundcard driver over single USB connection, adapting to Q-LAN over its PoE port.



> The BSS BLU-USB front panel



The BSS BLU-USB rear panel



The tvONE ONErack in action

There was more, **but we're only human**

InfoComm 2016 is the first tradeshow I've ever attended that I wished was longer, though I know the hardworking souls on the booths wouldn't want that. There were many, many **more interesting product releases**, notable new technologies (some of them doomed to fail), opinions and approaches than we can outline here. Get online and check out our **ICTech TV** coverage on YouTube. There's coverage there that we deemed we wouldn't duplicate in print; if you can't find the solution to your particular technical conundrum, then it probably doesn't exist.

AVB/TSN – the Big Comeback

Surprising news out of InfoComm 2016

–rumours of AVB/TSN's death turn out to be greatly exaggerated. Many AV professionals, including this author, were calling AVB a technical dead-end that was suffering from a lack of development and support, not to mention crucial products and infrastructure. Cisco and Biamp looked to have changed all that in one fell swoop, with Cisco finally announcing eight switch models across three of their popular platforms that will support the standard, while audio DSP giant Biamp announced **TesiraLUX**; AVB encoders and decoders that can move 4K video with audio, with two frames of network latency, effectively turning them from an audio to a multimedia company.

Cisco had been talking about supporting AVB across their range for years, with the oft-repeated rumour circling the AV industry that they had already enabled it in the firmware, but were waiting for reasons unknown to make the capability official. They have now silenced the

naysayers with AVB support available from July in their C3850 MultiGigabit (one model, multiple transport options, multiple bandwidths) and C3850 10G SFP+ (five models, 12 to 48 ports, multiple uplink options) platforms. The C3650mini platform (two models, 24 or 48 ports, multiple uplink options) will be available with AVB support from October 2016.

TesiraLux OH-1 rear panel



Gamechanger - TesiraLUX



The Alliance Awakens



Cisco's Junmei Zhang

we've managed to bring it forward. We now have several categories of switches that support AVB. They are all enterprise grade, specific models. For example, we've already had the **C3850** models in the market for a year, and the newer edition of the hardware and software that supports AVB will come in July. The new version of the C3650mini that supports AVB will come in October."

"Cisco was a founding member of the AVnu Alliance," said **Junmei Zhang, Technical Marketing Engineer at Cisco**. "We've been talking about supporting AVB features for years, and now we've finally delivered. We were originally scheduled to roll out this capability at the end of 2016, but



An AVB-enabled Cisco C3850 sits atop its Biamp Tesira buddies

"We looked at the current AV market, and AVB is the only standards-based solution," she continued. "Cisco want to enable standards-based infrastructure to support interoperability between different AVB vendor endpoints. Our target market is the enterprise customer; we have a huge enterprise customer base. Before we supported AVB, they had to have a separate AV network with different switches, which the IT departments weren't happy about because it was hard to standardise. Now with Cisco entering the market, it's easier to accelerate the deployment of AVB endpoints."

The Heart of the Solution

With such a massive player providing the most important part of any AVB network, its competitors are sure to follow. **Biamp** may have the lion's share of the corporate AV market to itself for a short amount of time, but other manufacturers will follow. "We've talked with a lot of AV consultants and integrators," illustrated Junmei. "Currently they have to use **Dante** to run audio and find another way to run video. Video requires lots of bandwidth, but audio only needs one Gigabit. Our switches can provide up to 40 Gigabits of bandwidth."

Cisco's new set of AVB capabilities and features will be introduced to their customers and technicians through ongoing education programmes and their Cisco Live events. "We have Cisco Live sessions every year across four major geographical areas," explained Junmei. "This is where we demonstrate our new products and features to Cisco customers. The next is here in Vegas from July 10 to 14 at the Mandalay Bay. They also include technical education sessions for IT staff in how to enable and deploy new features."



The good news at the Biamp booth



Crown Power Amps - AVB or Dante, take your pick

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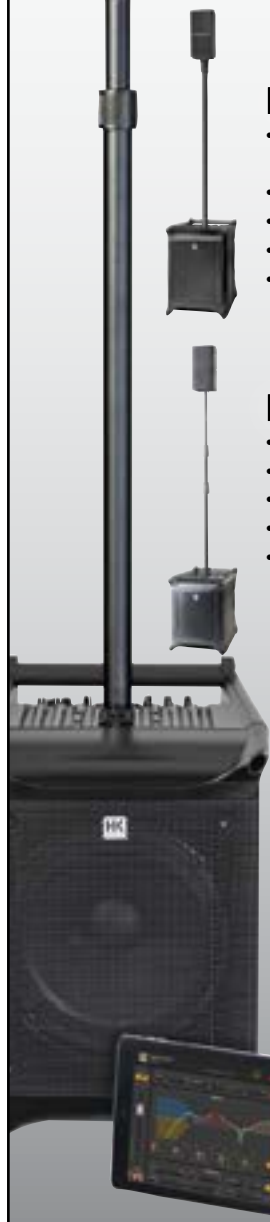
- 460 Watts
- Eight-channel digital mixer with professional features
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NANO 600

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- 460-watt power amp
- 130dB max. SPL
- Huge bass delivers down to 43Hz

NANO 300

- 2 x 3.5" satellite and 8" woofer
- 230-watt power amp
- 120dB max. SPL
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Multi-cell transformer, using Advanced Wave Transformer technology



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THE GERMAN AUDIO STANDARD

What's New?

Other AVB products were popping up across the show. **Audix** came out of nowhere with an AVB enabled version of their M3 Tri-Element Ceiling Microphone, three of which can be daisy-chained to carry 9 channels of audio over one AVB connection on Cat cabling. The product was so new that the staff on the stand told me that the day it was couriered to the show was the first time they'd seen it. Interestingly, their pitch on the stand for the product directly referenced interoperability with Biamp.



> A deconstructed Audix M3-AVB



Meyer Sound Galileo Galaxy rear panel

Meanwhile, longtime AVB advocate Meyer Sound released the **Galileo Galaxy**, a new loudspeaker processor designed to be fully networkable, with multiple units sharing 24-bit/96 kHz multi-channel audio via AVB. Over at the Harman stand, BSS, dbx and Crown, who have had AVB ports available on multiple models for a while now, were starting to feel less lonely. I predict we'll see an avalanche of new video product in particular before the year is out.

InfoComm 2016 Aussies on the Showfloor

With record breaking attendance in 2016, it was also a big year for Australian AV pros to make the trip to Vegas. 280 Australians were listed as registered at the show, and we caught just a few of them on camera.



PAVT's David Di Muzio with ClearOne CEO Zee Hakimoglu



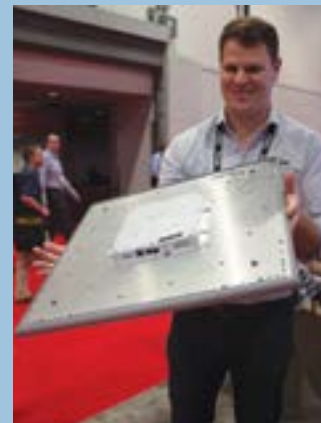
Amphenol's Stephen Richards with Amphe-Dante Dante-to-Analogue adapters



Corsair's Mark Hall with a Lumens VC-A202P



Danley Sound Australia's Steve Anderson



Jands' Scott Harrison with a Shure Microflex Advance ceiling microphone array



Madison Technologies' Les Jones with a HuddleCamHD HuddlePod Air



Peter Swanson, late of avt, in his new role as Head of Audio Visual Practice for LendLease



Hitachi's Michael O'Connor and Matt Hanna



Chris D'Bais of Meyer Sound Australia with the new Galileo Galaxy



iMag System's Gerry Raffaut with the iMag Lightning Controller



Sennheiser Australia's Jason Grbevski



Telstra's Max Davies

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InfoComm 2016 Pictorial

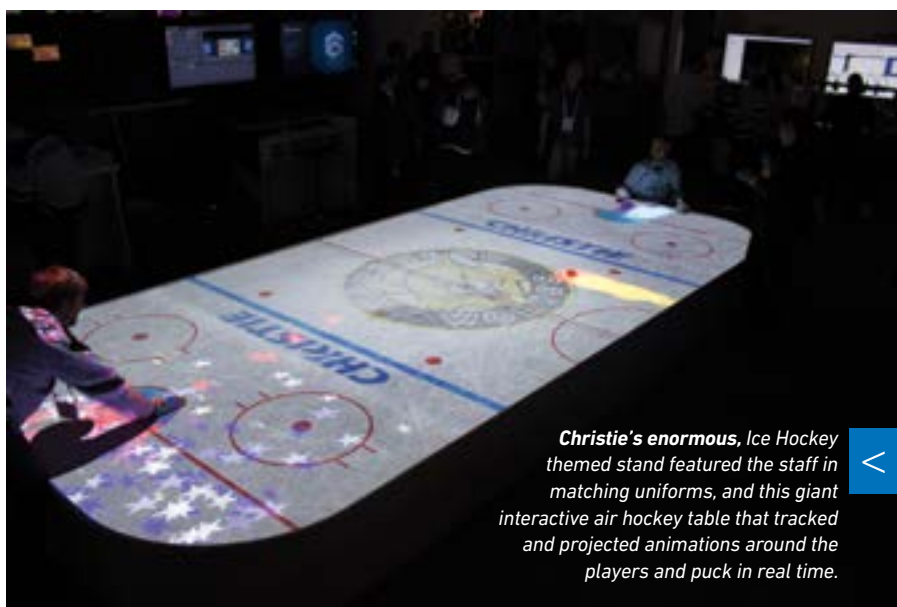
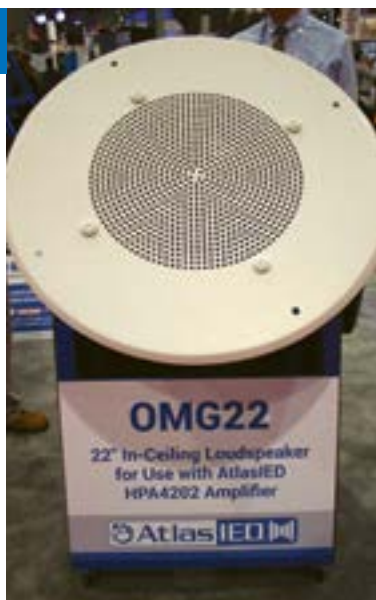


Cisco's huge footprint at the show underlined that the products they make are now at the heart of every enterprise AV system.

Need a safe place where you can test fly drones without the danger of maiming your fellow InfoComm attendees? The Drone Zone at the rear of the Central Hall had you covered.



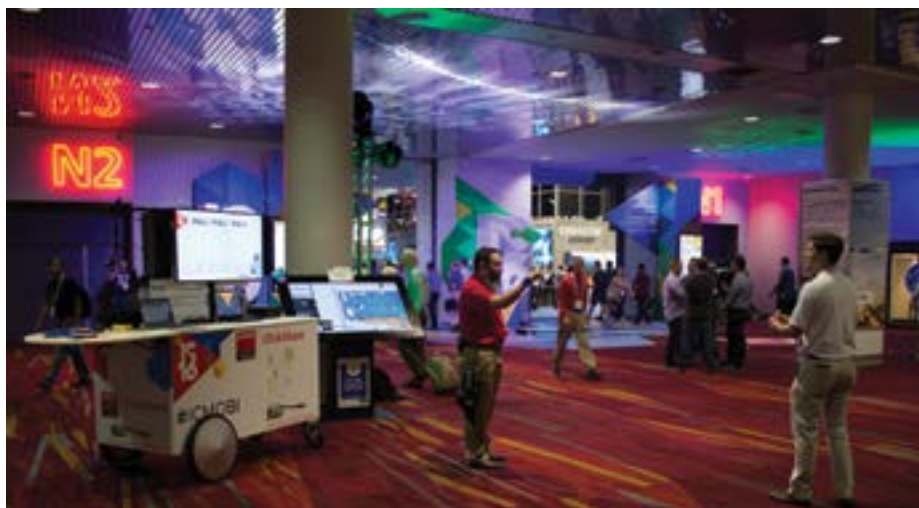
Our favourite gag of the show – the AtlasIED OMG22 22" ceiling speaker. Specs include 'Frequency Response - 1Hz to 150ish', 'Coverage – Everywhere', 'Max Input Ratings – 10,000 Megawatts Continuous' and 'Grille Material – Himalayan Powder Coat'. Release date, April 1st.



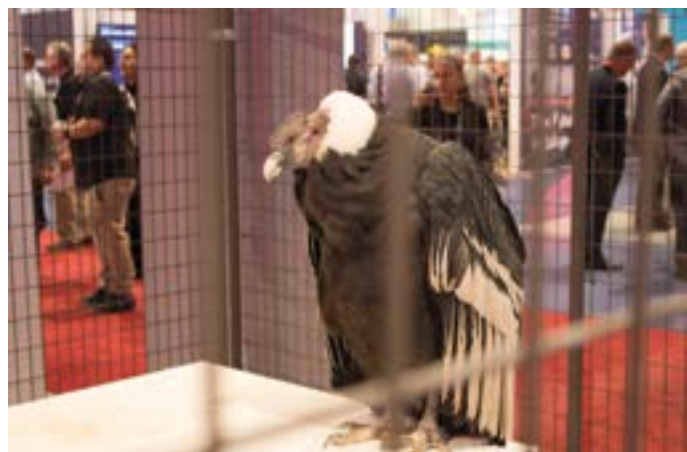
Christie's enormous, Ice Hockey themed stand featured the staff in matching uniforms, and this giant interactive air hockey table that tracked and projected animations around the players and puck in real time.



LG's dual-view curved tiling OLED. The flexible OLED market is tipped to grow to \$16bn this year and be worth around \$57bn by 2026.



> **Guess that Tension!** InfoComm staff nerd out with a carnival game for AV integrators – Guess the Tension on the Pulled Cable! For the record, the volunteer in this photo guessed almost perfectly to the pounds per inch.



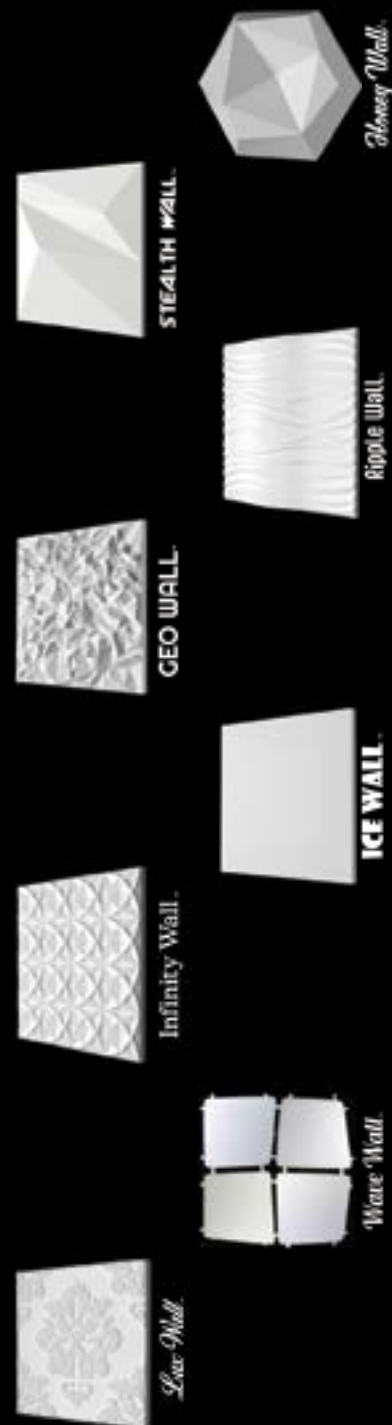
Phoenix Audio were releasing a new microphone array for conferencing called the Condor. So they had a live Condor on the stand, of course.



∨ **This vast Leyard TWA1.2 LED video wall** was running content in 8K UltraHD. The photo does not do it justice – it looked so real that you could walk into it, which they had prevented with a safety barrier, just in case.



Epson stripped back their new Pro L25000U 25,000 lumen laser projector so we could see what was under the hood.



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DISRUPT ME BABY

MEDIA HAS BEEN ROGERED. YOU'RE NEXT!

Biz Talk
July 2016



By Julius Grafton

You're reading a magazine. One in three of you has the print copy, the rest read this online. **We now have 26 years of editions almost all of which will be online.** If only our lazy gimp could actually transfer and index them more quickly – they are all scanned. But once they are at www.cxnetwork.com.au then they will be there forever.

This is a story about technology disrupting the natural order of things by rearranging buyer preferences. I'm all for it – Airbnb. Uber. Airtasker. Freelancer. I use them all; some on both sides, as a supplier and as a user.

In our media world we work harder for less, because of Google, Facebook, LinkedIn, YouTube and every other digital distributor that show news. Media firms were once distribution channels. Connections Magazine (as we were called from 1992 until 2002) ran up to eight pages of classifieds.

But it isn't distribution of news that has changed, it is distribution of advertising revenue as marketers sift through an expanding universe of 'pathways to market'. In other words, how do you promote your business to your target market, and spend the least to do so? We face that question every working day.

In our boutique niche world of 'entertainment tech' and 'information communication technology meets audio visual' (ICTMAV), we have a role and a place for our market offerings. I feel insulated from the worst of the media maelstrom, evident every day in the advertising voids of the big city newspapers. Plus we have a growing events business that underwrites everything.

If you work in our core readership then you can expect some changes starting with standardization. The people who pay the bills do not understand why we specify all this different stuff, all the time, to make shows and to install sites. They demand more generic designs that are more adaptable to use. You better get cracking on making these, or someone else will.

It is illogical to have a venue into which different production is placed daily for different looking shows. The top hotel chains complain about this every day as they see their ballrooms clogged up with lifters and roadcases. It is easy to see that permanent installations can be better specified for more generic uses. LED screens can now be big enough to cover what was a cyc, and also do the borders and legs.

Within 5 years autonomous trucks are set to smash trip times and drop prices so that our schedules will get more cost effective. We will shave a whole day off the East to West coast run. Autonomous trucks don't need rest breaks, consume less fuel, less maintenance, and don't have accidents that they cause.

Soon nanowire battery technology is set to smash recharging time to the point where we will have cordless, wireless everything that we just roll into place. Imagine a gig with almost no cables. The auto industry will have cars that run 500km and only need 5 minutes to recharge.

This isn't science fiction, this is science fact, people.

All the above says to me that only the brightest, most adaptable workers will survive since many less people will be needed. Who are you?



THE RECEIVER REVOLUTION

When Listen Technologies first started developing our new receivers we had one goal: to improve the entire assistive listening experience – not just the experience for venues or the experience for end users – the entire experience.

Our revolutionary IR and 150MHz receivers are focused on improving assistive listening for everyone. Join the RECEIVER REVOLUTION or get left behind!

LISTEN
TECHNOLOGIES



BM8 8-Channel Strip Mixer/Pre-Amplifier

The inDESIGN BM8 is a high quality mixer for commercial and industrial audio applications.

The BM8 features 8 mic/line inputs plus 2 stereo inputs. Microphone input 1 features a mute so that a microphone on this channel will mute all other inputs, useful for paging announcements. The BM8 provides a mono output. There are 4 alarm triggers; CHIME; ALERT; BELL; and EVAC; connected via external mounted screw terminals.

The mixer is part of inDESIGN's Install Series, which also includes mixer amplifiers and power amplifiers, ceiling, surface mount and horn speakers, attenuators, loudhailers and other cost-effective quality distributed audio solutions.

These units provide excellent features and value.

inDESIGN
INSTALL SERIES

THE MILL REPORT

By Andy Stewart

CONSOLE YOURSELF



They came and went. Now they're being re-constructed all over again one Lego block at a time *without most people even being aware of it...*

don't know how people do it, I really don't – live without a console, I mean.

Recording consoles have been the central component of every studio I've ever worked in over the last few decades. Without one, studio setups just don't feel right, but more importantly, they don't function well either.

It's been one of the greatest scams ever pulled over the eyes of the industry – the idea that a console is outdated technology irrelevant to modern studios and recording techniques.

What rubbish. They're as relevant to the recording process today as they have ever been. And there's anecdotal evidence to prove it everywhere you look.

THE PATCHWORK CONSOLE

What tends to happen to people who run a studio setup for any length of time without a console is they start compiling all the facilities a console typically provides one component at a time.

They start with some outboard gear, preamps mainly and perhaps a few compressors. Next they decide to add some EQ strips to the setup, and a patchbay soon after that to connect everything together. Recording chains inevitably vary from day to day (as we all know), so this element quickly becomes vital to the versatility of any decent studio setup...

Next they purchase a monitor controller, a vital organ in any studio system. Without it, you have almost no physical control over monitoring, talkback or switching between sources. Often this single purchase can run into thousands of dollars for a decent one (the potentiometer in

one of these units alone can be worth hundreds). At this point the equipment list has started looking quite extensive, and expensive.

Then the concept of analogue 'summing' starts creeping into the thought processes of these poor unfortunate console-less studio owners. The idea that computer software, for all its advancement and versatility, isn't that crash hot at mixing 100 channels of audio down into a stereo file starts to eat away at them. They feel like something's missing from the mixes they're producing – arguably because something is – so eventually they purchase an analogue 'summing' unit to help 'glue their mixes together'.

Whether the unit they ultimately buy ever really provides much adhesion is debatable, but they purchase one anyway. Again, these devices can run into thousands of dollars for a decent one, even though they typically have virtually no controls on them.

So now things are starting to take shape. There's some potentially tasty outboard gear that can be patched every which way, a good speaker monitoring system and some analogue summing to go with whichever DAW these studio owners have chosen. But at this point things are often starting to look a little messy. All this stuff needs to be given some order – a piece of studio furniture perhaps with a desktop for the monitor controller, mouse and keyboard, computer screen and sundry items. It might additionally have some small outboard racks to carry the 19-inch patchbays, external preamps, compressors, EQs, and AD-DA converters etc.

Hmmm... this is all starting to look very familiar.

IS IT A CONSOLE YET?

At this point what people have essentially done is build a console, albeit a basic one.

However, what these studio owners typically overlook when they start down this road are the other important (though less obvious) aspects of the recording process that good analogue recording consoles neatly provide: comprehensive routing and bussing, headphone mixes that don't suffer from latency issues, sophisticated metering and calibration, and a stylish place for all your extra bits and pieces – pens, notepads, capos and feet... but not the coffee cup thanks.

Arguably – and this really is about personal preference in many respects – the indirect path to owning a quasi analogue console one component at a time is, in some respects, money down the drain.

Now while I'm the first to admit it's none of my business how other people spend their money, I feel compelled to point out two things here: that an analogue console generally does more for less, providing far more sophisticated routing, monitoring, metering, recording and mixing options than a cobbled together system ever can, and in a far more efficient, ergonomic layout. Moreover, you get more enjoyment out of sitting in front of a bona fide console every day than a piece of studio furniture that's trying very hard to look like a console.

BUY ONE, BUT BEWARE

If, in your heart of hearts, you really want an analogue recording console, do yourself a favour and get one! They're a quick route to lots of facilities, depending

on which one you purchase of course, and in many ways they're also the cheaper option.

But a word of warning here: they're also potentially a money pit, particularly if you buy something like an old Neve or SSL – I know, I've owned both – which can be expensive to repair and maintain. New, these consoles cost the equivalent of a house on Sydney Harbour. Though you may pick up something cheap as you search high and low for that dream board, if the one you purchase then needs hundreds of new components and constant maintenance, the bill will grow so large you'll eventually look like a pelican.

There are thousands of consoles out there, of wildly varying qualities and values, and each one has its pros and cons. I could write a book about which ones are best to purchase, and most people know the more famous brand names like Neve, SSL and API, but there are literally dozens of others.

In the end it all depends on your budget, the size of your space, even the width of your door-jam.

If you do decide to purchase a console, especially if you're looking on the second-hand market at an older 'classic', try and think relatively modestly about your budget, and I must reiterate the need for restraint and a sober head if you do eventually find a big console that seems too cheap to be true. It may be just that. (I've actually seen people hand over money on the net for an implausibly cheap console, only to discover it was a scam where the money ended up in the hands of some Russian gang member. It happens, believe me.)

Consoles for sale on the open market often require significant sums of money thrown at them before they come up to spec –

and in some cases no amount of money can restore some of the older, more clapped out models.

Often what's most important about any second-hand console you buy is knowing who you're purchasing it off, what its maintenance record is (or whether there is any proof of one), and whether the console has the facilities you require – don't just buy it because it's big!

To me some of the key aspects of a good console are that its master section is comprehensive and well made, its preamps sound solid, the board has good VU and phase metering, and a comprehensive patchbay that's intact and working well. It's not so important that the console be 72-channels wide, or filled with gates and compression on every strip. You don't necessarily want something so enormous that it's a nightmare to install either, or has the knock-on effect of requiring a new air-con system in your house, new premises altogether or a divorce!

In short, don't over-react to your need for a console and wind up with a giant lemon that no-one can use or fix. Buy the right console however – one that suits your budget, lifestyle and room size (not your ego) – and you may save significant sums of money while at the same time being able to run your sessions efficiently and with a far greater sense of enjoyment and satisfaction!

Good luck.

Andy Stewart owns and operates The Mill in the hills of Bass Coast. He's happy to respond to any pleas for recording or mixing help... contact him at: andy@themillstudio.com.au



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MIXER OR PRODUCER? WHICH ONE ARE YOU?

By Andy
Stewart

Mixing

When someone asks you to mix a song, what do they mean exactly? Do they want you to dutifully mix all their masterfully crafted performances together without the slightest tampering, or do they want you to 'improve' on their performances? Maybe they want you to record half their parts again, who knows...

These days the term 'mixing' can basically mean anything. Some use the expression to describe the 'traditional' process, whereby the mix engineer is employed to sensitively represent only what's there either on tape or in a session file. This role specifically does not include making musical judgement calls about what's right or wrong with the various performances on a recording. Nor does it include adding parts to an arrangement that might subjectively 'improve' a song or performance.

This form of mixing rarely takes place nowadays... if ever. Next there's the neo-traditional mix. This version of mixing is all about 'representing' what's been handed to the mix engineer with the expectation by the client (inferred or otherwise) that the engineer will do whatever he or she determines is required to improve the musical outcome of the piece.

Immediately we're into grey territory here. As soon as the original recorded elements of a piece are subjectively open to scrutiny with respect to things like intonation, timing,

arrangement or performance, the engineer's 'scope of works' suddenly becomes far broader and musically open-ended.

And as we all know, one man's pitchy vocal is another man's 'vocal style'; one woman's errant timing another's 'musicality'.

So how do you define which is which?

Fundamentally, by having everyone present and communicating well at these mix sessions. More on this in a moment...

Next there's the role of mix engineer as quasi producer. This role often involves employing a mix engineer to potentially make wholesale changes to everything from song structure to musical arrangement. In this role the mix engineer might be specifically asked or encouraged to add or remove parts as they see fit, or shift a song across genres, which immediately makes them a producer as well as a mix engineer.

This is where things can get really messy. If there are no clear guidelines established around what is (or is not) expected of the engineer, or even how each person's role will later be defined on the credits, conflict and confusion can erupt unexpectedly around almost anything – the loss of a client's 'favourite part', the addition of instrumentation that's not to the client's liking etc. It may even discourage someone from voicing an opinion that might well save the day – a disastrous outcome for all concerned.

SO WHO ARE YOU?

21st Century mixing is therefore as much a discussion about the engineer's 'scope of works' as it is about the sounds themselves.

But let's make one thing abundantly clear here. The more an engineer is employed as a do-it-all, know-it-all, record-everything-else-that's-required type of craftsman, the more they need to be credited as a producer, not just an engineer.

When a mix engineer records extra parts (that he or she may have even played themselves) they're producing.

When a mix engineer has to re-envisage a song: turning the arrangement on its head, re-editing half the vocals or even changing lyrics, they're producing.

Even if they're now only one of several producers involved in the piece since the production began, they should either be later credited as having been a co-producer, or having performed 'additional production'. It's not valid to say that because a producer's role existed beforehand, there is no scope for adding these additional credits. This is essentially the conscious misappropriation of another person's work.

While this may all seem like a trivial discussion around semantics, or indeed irrelevant to the musical process, it's neither. How a person's role is defined at the outset of a production, or at least before they become involved, adds clarity of purpose to their role and helps keep things moving along amicably between protagonists. Nothing in the studio causes conflict faster than confusion around who's in charge or who's playing what role. Even the most seemingly relaxed, chilled-out individuals can turn into power-tripping loons when their role or power base is threatened.

NO MUD IN THE MIX, OR THE DEFINED ROLES

When you take on the job of mix engineer for a client you should make sure the breadth of your role is discussed fully before work begins.

This may even involve writing up a 'scope of works' list with the client that might help define your role from the outset. This doesn't have to be a legally binding document or anything so onerous. It's mainly there as a way of clarifying - in everyone's mind - what your role should (or shouldn't) be.

If you're a mix engineer by trade, it might be worth setting aside some time one day to draw up a comprehensive list of the things you do in the role of mix engineer for every conceivable working scenario.

That way you can bring this extensive list to any meeting you have in future (with clients new or old), and simply cross off things from the list you all agree are outside the remit of this specific task. It's also far quicker to do this than write something from scratch each and every time. It also reduces the chances of you leaving something important off the list.

Once this is established you're free to get cracking, everyone feels confident in their role, and no confusion can develop around who's doing what... (he says hopefully).

"in my experience
**the role
of the mix
engineer
changes almost
everytime..."**

ONE MAN'S PERSPECTIVE

In my experience, the role of mix engineer changes almost every time I take on a new single or album. There's no definition around the role I can superimpose on every situation, which means I have to make a concerted effort to clarify who I am each and every time, to each and every client. This is no big deal really; it's all part of the job, and all inextricably linked to ascertaining what a client wants their musical outcome to be.

But I always do it. I never leave the role open-ended or to chance. Sure, things may change in the natural course of events, but only after a discussion has been had about what's changing and why.

If you walk into a job without even a cursory discussion with the client about the role you're expected to play, or the outcome you're expected to achieve, you're asking for trouble. Not only are you setting yourself up for potential conflict with others involved in the production, by neglecting one of its most crucial aspects - the needs and expectations of your client - you're not doing your job properly. By that I mean, you're not planning a happy pathway towards great musical outcomes, which is presumably what every one hopes for.

There are two ways to arrive at a successful mix destination: via the direct route or the black stump. Whichever path you choose to take (or stumble down), you should eventually find yourself at only one destination - the place where you and your client(s) agree is a sonically fantastic place to be.

If you don't get to this place no-one will be satisfied. And then what happens? Do you work for free until they are because there's no more money left? Does your client walk out on you and go elsewhere? Do you abandon your clients out of frustration because they can't see the mix your way?

Better not to find out really.

Get clarity on your role each and every time you take on a mix project, and you're halfway down the road to a successful outcome!

Andy Stewart owns and operates The Mill in the hills of Bass Coast in Victoria. He's happy to respond to any pleas for recording or mixing help... contact him at: andy@themillstudio.com.au

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TOOLBOX REVIEW

By Andy
Stewart

MOJAVE MA-200 VACUUM TUBE CONDENSER MICROPHONE

Almost a decade has passed since the Mojave (pronounced Mo-harvey) MA-200 tube condenser was released – in a golden period of pro audio where new esoteric gear was hitting the market faster than bugs on an outback windscreen.

During that time it was sometimes hard to tell what was being designed and manufactured by genuinely committed, knowledgeable individuals, and what was being cooked up by circling sharks. Some of it was clearly smoke and mirrors or familiar in brand name only, but some of this gear has stood the test of time well.

The MA-200 is one such stalwart, having been designed by two highly regarded names in the audio industry: David Royer and John Jennings (from Royer).

I've used the MA-200 tube condenser extensively over the many years since its release, and repeatedly been impressed – often excited – by the tone of the recordings it has captured.

Beautifully built, with a look of understated modesty, this cardioid-pattern mic sports a three-micron thin, gold-sputtered capsule, a Jensen output transformer and a military-grade JAN 5840 vacuum tube. The mic itself ships in a small case that's housed neatly alongside its external power supply, shock-mount and mic cable, inside a sturdy outer briefcase.

Sonically this mic is both sweet and bright. When I first used it years ago I remember being struck by the clarity of its top-end, that yet somehow defied physics by simultaneously being slightly compressed sounding and smooth on the 'esses'. It was as if recorded vocals had been mixed already – superbly balanced sounding yet clearly extended in the genuine top-end register.

From a singer's perspective the MA-200 looks great, and is fabulously responsive sounding in headphones, making it a real pleasure to sing into.

Very recently I've used this mic again on vocals, acoustic guitars (six and 12-string), banjos and tablas, with classy (not glassy) results every single time. So good has this mic sounded that I've felt compelled to write about it all these years later.

What I love about this mic is that it fills me with confidence every time I wind its shock-mount to a stand. I know it's going to work for me, rather than against me, and it always seems to add panache to recordings that most mics simply don't deliver, though many promise it.

Unlike countless other mid-priced tube condensers, the MA-200 sounds glamorous and sophisticated, with a sonic personality it makes no effort to disguise. On the contrary, it offers colour without sounding in any way contrived or confused. The tone is more akin to overdrive rather than collapsed so-called 'warmth' – a term I despise. The picture through the Mojave is clear yet somehow halfway down the road to a final mixed outcome, even when the recording chain is nothing more than: source → mic → preamp → recorder.

I can't count how many times I've called up a song in preparation for mixdown, got to a vocal channel that was tracked using the MA-200, and been struck anew by its class, personality and sweet, sweet texture.

Very few mics take you to places you never thought to go; fewer still repeatedly exceed your expectations. Most fail to live up to their own ultimately hollow marketing rhetoric, leaving all of us feeling just that little ripped off. This is no such pretender.

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Spot that goes

MARTIN RUSH MH7 HYBRID to wash

By Julius Grafton

Martin make some excellent devices that occupy the top end of the market. The Rush line are more intended to sit in the middle, and come from a factory in China – like a lot of others.

Hybrid means all-in-one, with tight spot (2 degree) to a 45 degree wash. The MH7 is a profile moving head with 4 and 8 facet prisms, 8 rotating/indexing gobos and 12 static gobos.

This could be amongst the last discharge lamp devices but the moving light manufacturers tell us that there is still a performance and cost benefit outside what a LED engine can deliver. At 250 watts from a

Philips Platinum 11R lamp, the output of the MH7 is more than sufficient. Philips say the lamp is rated to 2000 hours use.

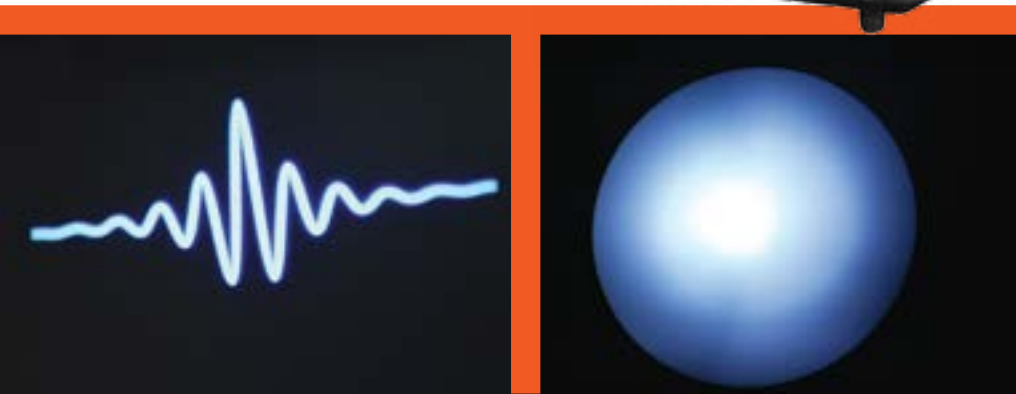
The pan and tilt are very fast, but the fan is rather noisy which probably limits the MH7 to use in a music club.

The frost function is not linear, it is simply on or off. It's the way they stretch the beam angle in wash mode. On this we didn't understand the distinction between what Martin call Beam Mode, and Spot Mode. The specifications say the minimum 2.2 degree angle is available in Beam Mode, while the Spot mode only allows 2.5 degrees. We doubt anyone could pick the difference.

It can be
a beam,
a profile and
a fresnel



Manufacturer:
 Martin Professional
Product: MH7 Hybrid
Web: www.martin.com
Distributor: Show Technology
Price: \$6,635 plus GST



We liked the gobo wheel with some cool new patterns but when we added prism it threw the focus out a titch. It wasn't possible to have a nice sharp focus across the gobo in prism mode. Colours derive from a 13 colour wheel, with nice saturation. The beam has a hotspot, which we are told is an unavoidable by-product of the compromise of the wash/spot hybrid. Aside from that, this is a versatile hybrid in a world where less is more - less types of fixtures, doing more work. Come to think of it, anything that can be a beam, a profile, and then almost a Fresnel - who would have thought of that?

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LSC MANTRA LITE

SUPER EASY LIGHTING CONTROL



By Jimmy **Den-Ouden**



Let's face it, whether it's audio or lighting the market for large format consoles is somewhat more limited than it is for smaller boards. Mantra Lite is the latest release for LSC, and I reckon it's well set to become bread and butter for them simply because it's so wonderfully effective and easy to use.

Mantra Lite is designed for smaller applications such as schools, worship centres, small venues, and even outdoor stages. It will control up to 24 fixtures including colour LED and moving heads. The console is populated with two rows of faders, various buttons, and an 18cm touch screen. The upper row of 24 faders control intensity for fixtures, while the lower row of faders are reserved for playback duties. When on the "rig view" (the upper section of the home screen), the flash keys are used for that exact function, however in other screens they also work to select or de-select fixtures.

Once the console is set up, turning lights on is as easy as pushing up faders. Functions such as color, position and animation are selected from the "apps" screen. Tap the rig view to get to this, then choose your desired app (for instance colour), then push up some faders to select fixture. Then choose a colour from the picker. The selected colour is applied to the fixtures, and added to a swatch at the right of the screen. Pushing up different faders de-selects the first fixtures and chooses the new ones. It's so logical you don't even have to think about it. Want to fan

colour? Just select some fixtures, choose a colour, then press the fan button beneath the screen and drag your finger across the palette.

Scene recording is just as easy – set up a look, press record, and press a flash button beneath a playback fader. Tapping the memory on the home screen edits the fade times, it's very easy.

As with colour, movement and animation of fixture parameters is achieved again via the app screen. Tap the rig view, tap animate, and choose some fixtures then press create. You can animate by intensity, colour or pan & tilt, and animation timing can also be easily adjusted. For more advanced movement effects, use the "shapes" function to generate specific patterns. Again, recording looks with animations or chases is achieved by pressing record then selecting a playback fader flash button. Repeatedly recording to the same button allows a cue list to be created – just choose add rather than overwrite when prompted.

The thing about LSC build quality is that it's very good. Mantra Lite is crafted from a metal sheet that folds at the front to form a carry handle. The push buttons are tactile and robust. The concept of breaking the desk would elude all but the most enthusiastic/careless/abusive operators, and even then I suspect it wouldn't go down without a fight. I'm literally in love with how well this console is put together.

Here's a smart idea: how about putting a mini UPS inside the console so when it loses power, it can perform a controlled save and then shut down safely? That's exactly what LSC has done with Mantra Lite. We tried yanking the power out, and upon re-application it booted up

(pretty quickly I might add) to exactly where we'd left it before. Most excellent, as is the Undo function which gives you a list of the last things you did so you can go back and figure out which one you want to undo.

All up the Mantra Lite is a very powerful little board, it's easy to use, well priced, and made in Australia. What's not to like about that? I reckon it's brilliant.

Brand: LSC
Model: Mantra Lite
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QSC Q-SYS CORE 110F

SMALLER BETTER
FASTER STRONGER

By Jimmy
Den-Ouden



We first looked at the Q-Sys platform a few years ago around the time the Core 250 and Core 500 units were released. A few things distinguished Q-Sys from other products on the market – internal multitrack players, nice touch screen interfaces, and the product was easy to program. For anyone unfamiliar with the platform, Q-Sys is an open architecture DSP system. Send signals in at one end, process them with any of the available audio functions, and get processed signals out the other end.

The Core 250 and Core 500 units used card based IO, with eight slots each capable of transporting four channels of analogue audio (or more in digital formats) into or out of the core. The big difference with the Core 110f is that it has a fixed IO count. Well, sort of a fixed IO count. Eight phoenix connectors provide mic/line input connectivity, eight more provide line

outputs, and yet another bank of eight connectors are “flex channels” which can act as either inputs or outputs. In addition to the analogue IO, there is Q-LAN connectivity allowing the Core 110f to interface with other compatible QSC devices.

The elephant in the room which can't be ignored is that the Core 110f has no Dante connectivity. I can't make sense of the decision not to include this, since it's available on the bigger frames as an IO card. In a time when we're seeing more convergence, it seems a divergent choice. On the flip side, VOIP and POTS connectivity is on-board and ready to go out of the box. There's also a 16x16 channel USB interface. If you use Q-Lan enabled amplifiers then interconnects between these and the core is as simple as connecting them to a common network switch. Even without Dante, the Core 110f provides excellent IO per dollar value. QSC claims it's the best in the market, and they might be right.

Core 110f
provides
excellent IO per
dollar value



Brand: QSC
Model: Core 110f
RRP: \$5,999
Product Info: www.qsc.com
Distributor: www.tag.com.au



If the IO count isn't enough to persuade you the Core 110f is a good thing, maybe the compact form factor will help. At 1RU it won't use much space in your rack, and the brushed front panel with gorgeous inset

blue display really looks super tidy.

It strikes me that other than sheer processing power stats, there's not really any way to say how much stuff an open architecture DSP can do. Presumably each manufacturer has their own algorithms, and different calculations require different amounts of DSP to carry out. In other words, it's really hard to compare open architecture DSP units other than by IO.

Suffice it to say that some of the application diagrams on the QSC site show fairly involved designs, and thus far I've never yet run out of DSP on a Q-SYS box. I think it has plenty of processing power.

It's worth pointing out that in addition to the standard dynamic, frequency and mixing processors, the Core 110f includes some pretty cool modules such as a gating automatic mic mixer, as well as a new and greatly improved AEC module.

Ultimately at the end of the day, the Core 110f is designed to cover applications up to a certain size. It will happily handle audio functions for conference rooms, educational facilities, worship centres and other public spaces. In addition to this, the RS-232 interface and LUA code capability allow the Core 110f to control devices outside the realm of just its own existence.

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MORE FOR LESS

By Julius
Grafton

You have to wonder how the science and marketing come together these days at a big global audio manufacturer.

'We can put more features and less weight into a system for less money', the guru says. 'So what does that do to our more expensive stuff?' the sales guy says. I have no idea what they say, I'm just imagining it like I think it, because this SRX 835P and its companion subwoofer represent great value when you consider what they do.

Starting with the SRX 835P top box, you get a 3 way amplified system loaded with a 15", a 5" mid, and a 3" compression driver on a 60 x 40 horn flair. Out back is 2,000 watts of Crown amp and all the DSP you can imagine.

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years ago and if you told me this was coming 20 years ago I would have set fire to my Australian Monitor AM 1600 amplifiers, one of which weighed almost the same as this whole device!

The 835P has M10 mounting points everywhere, and a really useable set of handles which seems like a given, but we are often appalled at handle design. These ones are very good.

The interface panel has simple controls, along with an Ethernet port for connection of HiQnet and resulting control from an external device.

Down below we tested the SRX 818SP sub, loaded with an 18" driver and a 1,000 watt Crown power plant. It also weighs a shade under 40kg. The top box and bottom box combo are not tall enough for a floor stack, but there is a pole option to separate them. There is also a dual 18" sub in the SRX range which would more than make a monstrous floor stack PA.

The top box has enough of everything to do the job alone, when married to the sub it allows that satisfying excess of low end that modern music demands. The combo can be voiced in various ways by the onboard DSP, which these days allows almost anything to sound like almost anything else.

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SYDNEY SYMPHONY ORCHESTRA

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TRIBUTE TO DAVID BOWIE

BY CAT STROM

PHOTOS BY ROBERT CATTO

the Sydney Symphony Orchestra, led by conductor Benjamin Northey, paid a musical tribute to David Bowie with four sold-out shows held at the Sydney Opera House's Concert Hall. The performance included vocalists iOTA, Tim Rogers, Steve Kilbey, Deborah Conway, Adalita and Jack Ladder.

Named after Bowie's last greatest hits collection *Nothing Has Changed*, the show covered his biggest hits *Changes*, *China Girl*, *Life On Mars*, *Under Pressure*, *Let's Dance*, *Starman* and more.

Production manager Laura Daniel recommended to Creative Director Amanda Pelman that Ross Graham design the lighting. Ross works mainly in lighting theatre and musicals although he did light bands in the US before moving to Australia a few years ago.



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**“The guys
at the Opera
House
were brilliant.”**

“Originally there was going to be a massive video component to the show but Laura, Amanda and I decided to make it more theatrical and more impressionistic of the galaxy of David Bowie,” explained Ross. “Hence all the star curtain and the Aladdin Sane floating lightning bolt right in the middle. We made it more about the music than a multimedia experience. At the same time we wanted to do an awesome concert that looked like nothing ever done in the Concert Hall before.”

The massive star curtain was created by The Look and originally it was going to be even bigger, extending around the sides to create a large black box of star curtain. However the show sold so well, the side seats were opened up for sale and the star curtain had to recede back.

“There was talk of having RGB stars but we wanted to keep it simple and magical,” added Ross. “The curtain first turns on for Starman with just a gentle glow. It’s one of the songs where there is the star curtain and a beautiful silhouette of the lightning bolt.”

“ We made it more about the music than a multimedia experience. ”



Ross explained that the lighting rig was designed around the lightning bolt, knowing that he was going to use haze he didn't want the lighting to obscure the central piece of the lighting design. Consequently there were fifteen metres booms either side of the stage full of moving lights rather than a back truss full of lights concealing the lightning bolt. These side trusses held a mix of Martin MAC Viper Profiles, MAC Viper Performers and MAC Quantum Washes. "The MAC Quantum Washes really kick ass," commented Ross. "Mostly they were lighting the orchestra and a bit of downstage because they are so bright. Most of the downstage wash was done by the Vipers. I also had a mid-stage truss with MAC Quantum Profiles for back light. The truss was really high, trimmed at 15 metres so we could get colour but again, not obscure the lightning bolt."

Although Ross admits that he usually specifies Vari-lite product, the MAC Viper Performer is the first alternative moving light that has excited him for theatre use.

"Now if I had to choose between a VL3500 and a Viper, I'd choose the Viper," he said. "I also used

a bunch of MAC101 CTs to light the five-piece rock band, I was only using cool and warm which looked really nice. I find the RGB's in the MAC101's to be a bit hard to get a good colour out of sometimes."

Ross' favourite look was at the beginning of Space Odyssey with a single MAC Quantum Profile beam shining from fifteen metres height and twelve metres upstage.

"It was very dramatic and theatrical," he remarked. "There was iOTA downstage centre with the spot really tight on his face and a single shaft of lighting coming from far away, maybe even space. Really with all the looks I was following the warmth of the music and words, trying to respect what I thought David Bowie's lighting designer would do. Five Years was also a favourite look because it was all just warm wash with all the singers in blue spotlights so they popped out from everything."

The lightning bolt, which was 6.5 metres high and 3.5 metres wide, comprised of 456 LED nodes of Philips Color Kinetics iColor Flex.

"Its great stuff," commented Ross. "Thomas Creative who built the lightning bolt had connections with

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"Each singer was quite different in their sound and approach."

Xenian who had the product left over from a massive install. Originally the lightning bolt was going to be just warm 12 volt festoon bulbs but that would have been quite expensive to wire up. However Xenian do get to keep the lightning bolt!"

Ross ran the show from an ETC EOS console which he chose because it had virtual pixel-mapping inside of it meaning he wouldn't have to hire in any media servers to control the lightning bolt.

"Unfortunately that bit me in the butt because we ended up not being able to control the lightning bolt through the system anyway," he revealed. "We ended up having a completely different system for the lightning bolt. We had a little eight button controller so we only had eight looks and had to choose sparingly. Color Kinetics have their own proprietary network called KiNET and grandMA speaks KiNET so we came up with this great way to break into the KiNET protocol and then run the pixels out of the EOS. However this new product only takes KiNET 2 which grandMA doesn't speak - so we were going EOS to MA NPU that spit out KiNET and then we were putting DMX in to the NPU and controlling the channels. All I can say is that the guys at the Opera House were brilliant."

FOH engineer Tod Deeley has previously worked on various projects with the Orchestra but said this project was different as the audience's expectations and emotions were more heightened than other gigs. "I knew from the start that it was going to be a tough

job pleasing everyone as although it was a concert of David Bowie songs with a rock band and eight charismatic lead singers, it was also a Sydney Symphony concert, so I had to make sure they were a big part of the sound too," he said.

As well as using the in-house d&b PA system, Tod was using the in-house Midas XL8 console which happens to be his preferred console anyway.

"I love the Midas, although it is a digital console it feels very analogue," he said. "When you make a change you can hear it which is always very good and is obviously helped by the d&b PA which is very precise."

Tod's biggest challenge was integrating the orchestra with the original band arrangements. He studiously listened to all of the album tracks for a couple of months beforehand but did not know what the orchestra were going to do until the first rehearsal the day before the show.

"I received all of the scores about ten minutes before the first rehearsal which didn't leave much time to study them to find out what was going on prior to hearing them," he remarked. "It was quite a learning curve seeing what they were playing and where that fit in, in such a short time.

"As the orchestra parts were being written for this show, we did not know what the makeup of the orchestra would be until a week out from the show. We eventually received a stage layout and from there you can build input lists and try work out what mics you need to cover everything" The resulting set up on stage was twenty-one strings,



four woodwind, three saxophones, three trumpets, three trombones, two French horns and three percussionists. Added to that was the five piece rock band, three of whom also did some backing vocals, two backing vocalists and eight lead vocalists.

"I had 62 inputs all up on the console," said Tod. "It's a lot to cover but during rehearsal and sound check I try to put it into a shape where you're essentially working off half a dozen faders for the band and orchestra."

All of the woodwind, brass and strings had a microphone per instrument, as of course did the band. Tod used DPA 4099's on the strings, Sennheiser 8040's on the woodwinds, Sennheiser 441's on the trumpets, Sennheiser 421's on the trombones, Neumann TLM170's on the french horns and Sennheiser MKH40's on the percussion with AKG414's on the timpani. All of the vocalists used Shure wireless microphones with KSM9 capsules.

"When you're doing an amplified gig like this with a rock band on stage, there's quite a lot of stage noise so you try to isolate the instruments as much as you can to get a cleaner sound out front," explained Tod. "You do a lot more close mic'ing than you would for a normal symphony concert. I worked with monitor engineer Hayley Forward to get the singers and most of the band on in-ears to reduce the level onstage. They all still wanted foldback wedges for safety and confidence, but Hayley was able to run them mostly at half level."

Each singer was quite different in their sound and approach which was great for what the concert was about.

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Tod Deeley



“With effects, I was guided by the albums.”

“None of them had used IEM’s before so it was great that they were brilliant in accommodating my request to help achieve a quieter stage” Tod said. As they got more comfortable with the songs they were singing and the IEM monitoring, their sound and overall approach would evolve.

“With effects, I was guided by the albums. Some of the songs had tight reverbs and various delays and I would follow along with that. I was using the built-in effects like phasers on the XL8 plus the external Waves SoundGrid system for delays and extra effects like the tremolo sound on the backing vocals for ‘Diamond Dogs’, plus de-essing and treatment on the vocals. I used the external Bricasti M7 reverbs for the strings and other orchestral instruments because even though the Concert Hall is quite reverberant, once you fill it with 2000 people and add all of the carpet and draping it does reduce the amount of reverb in there. You need to

enhance it slightly just to make it feel comfortable and natural and the Bricasti is perfect for that.”

Tod’s mix had to evolve the whole time; often with orchestras rehearsing and learning their arrangement or sound checking on the day of the show, they may want to save their energy for the concert and are not quite as intense.

“They can often sound quite different, which is often great but trying to guess how much that difference is going to be, can be quite difficult and every performance is different from the last, that’s part of the beauty of live performance” said Tod.

Tod remarked that the show was a very intricate mix with a lot of variables but the main thing was that the audience enjoyed it.

“We had people dancing in the aisles, and standing ovations at every show so I think that it worked,” he concluded.

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The Baby Animals marked the 25th anniversary since the release of their self-titled debut album with two special shows – one at Melbourne’s Forum Theatre and another at Sydney’s Enmore Theatre. The original line-up put their well-documented differences aside to reform.

Each night saw the band perform two sets; the first being a celebration of the group’s entire catalogue performed by the current line-up, while the second featured the original members performing the debut record in full.

BY CAT STROM

PHOTOS BY BOB KING



BABY ANIMALS



“I would use the **Heritage 3000** on all of my shows if someone would **carry it** for me!”

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**"Suzie's
voice
is better
than ever."**

FOH was David 'Hendo' Henderson, who has mixed for the new line up Baby Animals the past six years, and he was in his element with a solid hard rock band and lots of analogue gear!

"The old line up is much more full-on but the new line up is more dynamic," he said. "The old line up has a much bigger drum kit and bigger bass sound. There's more anxiety with the old band as it's been so long since they played together, but they channel this nervous energy to lift the show."

Hendo loves playing the Enmore Theatre saying it's a great sounding room especially when it is full, and that he has never had a bad gig there. For this gig he used nearly all in-house gear including a Midas Heritage 3000 analogue console.



DAVID 'HENDO' HENDERSON

"I would use the Heritage 3000 on all of my shows if someone would carry it for me!" Hendo joked. "It gives a warm tone that you just can't get out of a digital console. Digital consoles are getting better and better all the time and I love the DiGiCo and Soundcraft models, but when I step onto an analogue console like this one it's so much sweeter to the ears. It's very soothing and I much prefer it."

Outboard effects were a couple of Yamaha SPX990 processors, a Lexicon PCM reverb, a TC Electronics D-Two delay, Drawmer gates, and dbx compressors.

"Suzie's voice is better than ever and so powerful you really don't need to do much at all, just a little compression," added Hendo.

"During soundcheck I was running her vocal at pretty much flat, adding a high pass filter and that was it. The other boys you have to work on their voices a bit."

Hendo describes mixing The Baby Animals as fairly easy although they are very loud onstage. At the Enmore he added Perspex in front of Dave's guitar cabinets as he is exceptionally loud.

In true old rock style the stage is fronted by wedges with only Suzie using one in-ear monitor for her voice, with a wedge for the band mix. The simple monitor set up was looked after by the Enmore's inhouse monitor engineer Mark Nicholls on a Yamaha PM5D.

"If I had to use a digital console I

would use a DiGiCo SD7 which is the most incredible console ever built but very expensive so you don't get to use it very often," Hendo revealed. "I've been using the Soundcraft Vi series lately and they're great too."

Hendo describes the Enmores Nexo PA system as old but it does the job.

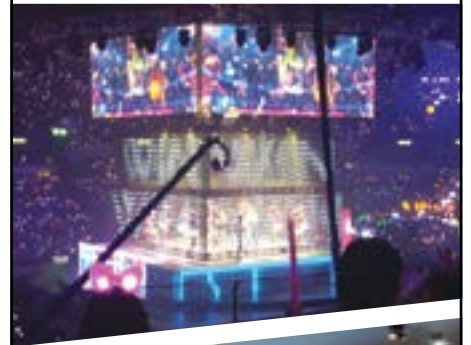
"It's a fairly old line array now and doesn't really compare to the new L'Acoustics stuff but it's very workable," he said. "It's a good rock PA and there's plenty of it which is great."

Microphones were mostly Sennheiser with 905's for vocals, 906's on guitars and 914's for overheads. David uses a lot of overhead in his mix, with a lot of his drum sound coming from them.

"I don't even roll them off very far, it's like 120 Hz whereas most people bring them up to about 400Hz and just use them as cymbal mics," he explained. "I like the whole kit in my overheads and I find the Sennheisers really good for that.

We carry some microphones such as the toms, overheads and vocals but everything else is inhouse. I find most venues supply Shure so I carry a few Sennheiser models to change things up a little - especially on guitars where Dave has two cabinets but I'm running three mics - two Shure 57's and a Sennheiser 906. When putting multiple microphones on amplifiers I find it's good to have a different one in there."

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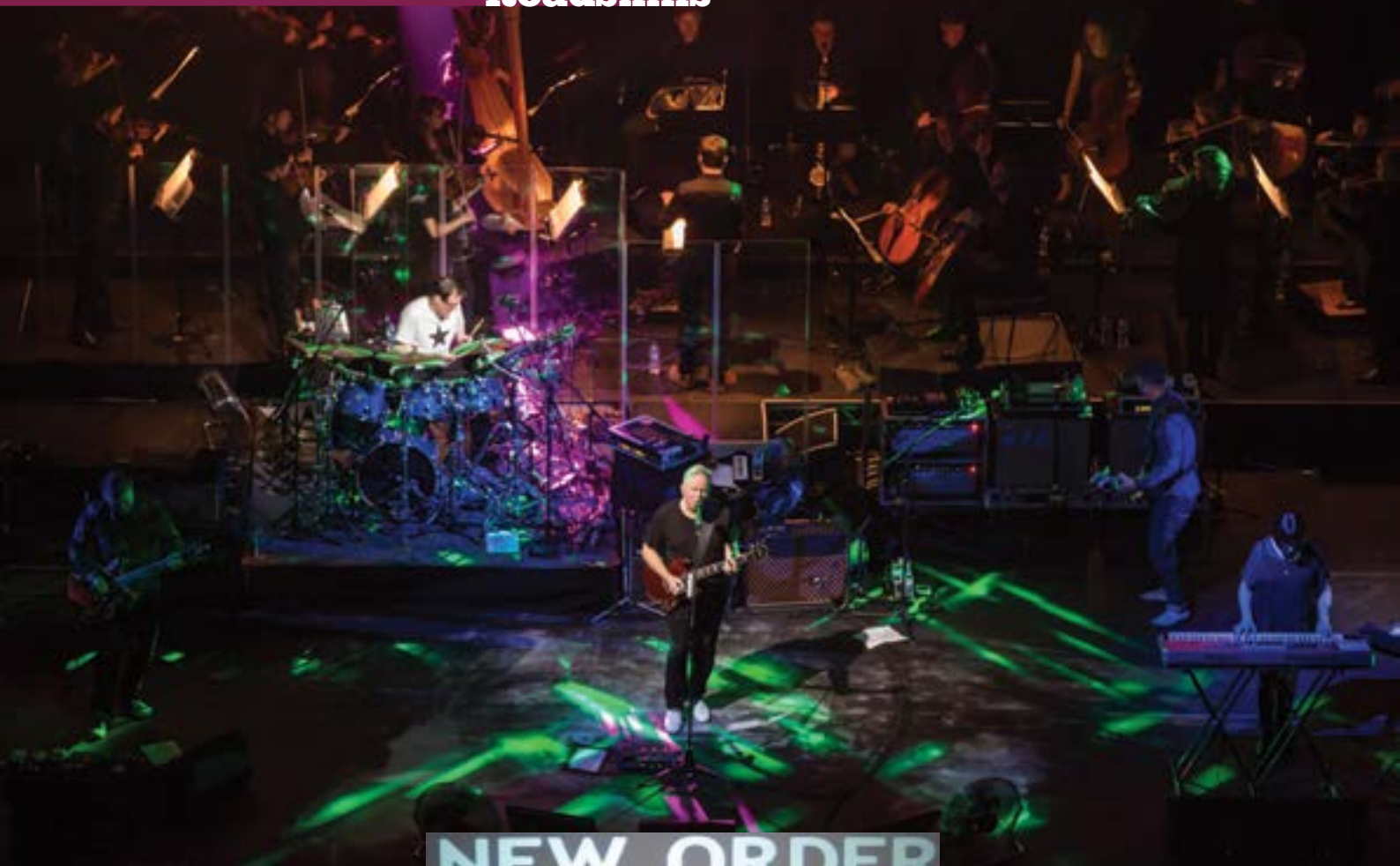
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NEW ORDER

IN THE SYDNEY OPERA HOUSE

thirty years ago I interviewed lighting designer Andy Liddle about his work for Mancunian band New Order. The venue was the Royal Albert Hall in London and the brief from the band was for blue light, broken white light and subtle cues. Gear included 'quite a few 240 volt lamps (CP60s) and some raylights, plenty of profiles with gobos and quite a few lamps that you wouldn't normally see on a touring lighting system'.

Fast forward thirty years and we met again, this time at another iconic venue; the Sydney Opera House. Appearing as part of Vivid Live, the band performed two classic band shows and two evenings with the Australian Chamber Orchestra. The Vivid Live show was very much the show that will continue through to the summer festivals in the northern hemisphere.

"This was only the second time we did the show with this array of screens and lighting design," began Andy. "I cannot stress strongly enough how amazing everyone at the Sydney Opera House has been - Andrew Mackonis, Paul Collison, Angie Sullivan - they have been incredible. Our four nights at the SOH have

BY CAT STROM
PHOTOS BY DANIEL BOUND

stood us in good stead for the summer festival season."

Andy has lit the band since 1981 so not surprisingly the band and management

trust him to get on with it! This time Andy wanted to encompass elements of his 1983, 1986 and 1989 lighting designs especially as the band's new album has echoes of those periods in time.

"In 1983 we used a lot of side lighting stolen from dance and theatre, today we still do it with ETC Source Fours rather than Altman Lekos," said Andy. "Over the years the band have become really good at finding the light and at some points in the set we turn off all the moving lights and technology and just use the Source Fours tightly shuttered from the side just to pick up the fret of Bernard's guitar."

The design of the screens is reminiscent of the 1986 tour when there were grey cloth banners, a white cyc and black gauze, today the video screens replace those grey banners. The 1989 element is the introduction of moving lights with Andy stating that he is actually going backwards to when he had just sixteen VL2 moving lights over the stage. In this case those are sixteen Robe BMFLs although he does also have quite



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**Andy
has lit
the band
since
1981**

are brighter and did more up in the rig.”

The video content is designed by Stephen Morris the band’s drummer and Andy works closely with him to create synergy between the lighting and video. The whole show still runs fairly manually in the way that things are triggered and run with Stephen starting the videos onstage. The set list never arrives earlier than half an hour before the band take to the stage.

“Colour choice is taken from either the lyrics or what’s happening on the video screens,” Andy said. “Mr Collison was mocking my use of CTO and CTB as an actual effect rather than as an exercise in balancing light for the camera. However it works well and contrasts well with deep saturated blues.”

Thirty years ago Andy told me that he didn’t find the then brief of mainly blue lighting restricting because there are more shades of blue than any other colour. He told me that he once had a system of 27 shades of blue ranging from steel to dark urban blue – remember this was long before

LED fixtures and their zillions of colours.

Twelve Clay Paky Sharpys are flown in the air to separate the screens with a further twelve located on the stage floor. Sixteen Clay Paky Stormys placed behind the video screens added effective sparkle.

For control Andy was running an Avolites Arena console having resisted earlier Avolites Titan consoles because the soft buttons and text were too small for him to read. Once the Tiger Touch, with Titan v3, was released with text and buttons that could go two sizes bigger, he made the switch!

“You could also make the layout of the screen smaller which I loved because I like to be able to topographically lay out the rig so I can see where things are on the screen,” explained Andy. “You can see very quickly what you’re doing so that’s all great when your eyes aren’t getting any younger.

“Compared to the Tiger Touch, the Arena has greater hardware inside it in terms of networking and it has 20 more mastered playbacks. Also, again from the less abled side, it allows me to attach a small MIDI keyboard which is very easy to MIDI-map onto cues, chases or anything you want to run. I use the keyboard with my left hand because I have arthritis and it’s much easier to get the ‘large sausages’ onto a MIDI keyboard.”

a few Clay Paky Sharpys representing this century with the introduction of the beam light.

“With the BMFL’s it was a deliberate move to try get wash lights off and away from over the top of the stage so you get a clear, uncluttered look of the video screens,” added Andy. “I really like the BMFL, it’s a true multifunctional light. With sixteen of them spread over three trusses they give enough space to see the video and at the same time, are able to cut and register against it. They get the light onto the back of the performer’s head where you want it to be, and are bright enough to do a nice beam effect into the audience with the video behind. It was about getting less lights that

Greetings! This is the first of what will be a monthly column providing an outlet for those who engage in the lighting industry. My name is Rohan Thornton and I am the current

President of the Australasian Lighting Industry Association (ALIA).

ALIA has been around for a number of years and is made up by a number of paying members which include corporate sponsors, education institutions, lighting professionals, students and many individuals who have an interest and passion for all things lighting.

ALIA has many functions, ranging from being a source of information, providing industry representation on a number of standards issues right down to being a place where ideas are presented and exchanged. It gives our corporate sponsors an opportunity to show their products and new innovations to the entertainment community.

We at ALIA see our primary role to inform and represent our industry. This is primarily done through our website www.alia.com.au.

In the many years ALIA has been in existence, we have seen a massive shift in the skills required to participate in our industry. We have become IP specialists; we have had to become familiar with networking and data distribution. The

drive to provide us all with a safe work place has driven our need to understand more about electrical and structural engineering. The advent of Media Servers and the accessibility of various display devices has heightened our understanding of video and content management. This has added a level of complexity and diversity to the skill we all need to maintain.

On the other hand it is an increasingly exciting time to be a part of this interesting industry.

Moving forward, ALIA has many plans to improve our involvement in lighting.

We are going to develop a Member Benefits Program. We intend to have representation from all states and territories and to hold 'Industry Nights' were our members can view new products and simply get together for a drink and a chat. We will also continue with our popular Backstage Tours, just too name a few. In short, we intend to provide both our corporate and individual members with better 'bang for buck'.

I would like to take this opportunity to talk about a subject very dear to my heart. We are seeing the first generation of our industry reach retirement age and as a consequence suffer the effects of ill health. Add to this the fact that the employment

conditions we experience today only really have come to existence in recent years.

Let's face it, although we love what we do, it's not exactly conducive to a healthy and stress free existence.

Many of our industry pioneers have been doing it tough and we have been to far too many funerals of late. I myself received a significant health scare that can be traced back to our 'industry lifestyle'. Long hours and less than ideal conditions don't exactly help.

Organisations such as Entertainment Assist and the Australian Road Crew Association are doing great work to assist our pioneers who have fallen on hard times over the years.

All I ask is to look out for each other and share the work around. Our industry is relatively young and while we certainly need to invest in our future, we do need to acknowledge and respect our past.

What we at ALIA also value is your feedback. As an organisation, we are only as strong as our members. We welcome your feedback and suggestion. We can be reached via our Facebook Page and directly by cat@alia.com.au

Until next month, safe travels.

Rohan Thornton

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“MUST HAVE OWN ABN”

By Simon Byrne



Our industry relies on a large and thriving casual workforce.



With the advent of social media, it has never been easier to quickly find good crew. Indeed Facebook has a couple of great groups for finding workers. A common feature of the ads in these groups is “Must have own ABN”. What does that mean in the production industry?

Usually, it means that a contractor wants to engage the person as a subcontractor thereby avoiding the costs and obligations that come with employing casual workers. That is, PAYG withholding tax, superannuation and potentially, workers compensation insurance. Just because a worker has an ABN, this does not automatically mean the worker is a contractor. So in many cases, none of the employer obligations are avoided.

Unfortunately it is not a simple choice. There are scenarios where a worker can be legitimately treated as a contractor, and a lot of situations where they cannot.

Is the worker paid by the hour? Does the worker have the right to pay another person to do the work? Does the worker provide any equipment, tools of trade or vehicles to perform the work? Does the worker have a company or trust structure? These are just some of the questions that the ATO uses to establish whether a worker is an employee or legitimate contractor.

It is complicated and if an employer gets it wrong, they are potentially exposed on several fronts and things aren't that great for the worker either. To be clear, it is the employer's responsibility for getting it right and there are penalties.

So what happens if an employer gets it wrong and incorrectly treats employees as contractors?

PAYG & Superannuation - Over a long period of time, PAYG and superannuation obligations could really add up. If the ATO came calling and found a history of sham contract arrangements, they are likely to impose the PAYG and Superannuation on top of whatever has already been paid. This bill combined with audit costs, interest and penalties could get ugly. There are quite a few cases where

the ATO has pursued builders, especially in relation to unpaid superannuation.

Workers Compensation Insurance - In addition to the fact that it is law, employers have a real moral responsibility to their workers. Seriously guys, if a worker is injured on one of your jobs, at the very least, you want the worker to be properly covered for health care and rehabilitation and you want to sleep well at night.

Workers Compensation laws vary from state to state. But typically, subcontractors are treated as workers under the Work Cover Act. The employer must cover them for workers compensation and declare any payments made by them to their employees as wages on their workers compensation insurance policy.

If you find that you have a genuine contractor/subcontractor arrangement, workers compensation insurance policies usually allow you to elect to cover subcontractors and a premium adjustment is made after 12 months. At the very least, the main contractor is required to ensure that all their subcontractors have workers compensation cover in place.

For workers in sham contract arrangements, they can find themselves assuming all the responsibility for PAYG tax compliance, their own superannuation and potentially not covered by any workers compensation insurance. It is an unfortunate reality that some of the older guys in our industry are doing it tough. This

is because when the industry was in it's infancy, proper workers compensation and superannuation for casual workers was non-existent. We as an industry need to learn from the mistakes of the past and look after our young workers.

The ATO has an online tool which helps you establish whether a worker is an employee or contractor (link at the end of this article). Importantly, if you answer the questions truthfully, you can save and rely on that decision.

Later this year, the tax office will be increasing their compliance activities (whatever that means).

The information in this article is of a general nature only and does not take into account individual circumstances. Professional advice should be sought.

<https://www.ato.gov.au/Calculators-and-tools/Employee-or-contractor/>

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Its Nature and Membership Qualification & Categories

But first - a report on the 2016 AGM



An exciting AGM is like “interesting times”; generally the less exciting the better. What the ACETA AGM held on the 30th May lacked in excitement, it made up for in progress and was indeed a positive, productive, well attended event with a number of members flying in from interstate.

The Australian Communication and Media Authority provided guest speaker

Patrick Emery, manager Technical Regulation Development Section, who shared insights into how ACETA and ACMA can work together for the benefit of members, associate members and the industry in general. Ten program initiatives scheduled for the year ahead were presented and supported by the meeting (these programs were defined in last month’s edition of CX). A valuable suggestion from the floor, supported by the meeting, concerned an addition to our skills shortage program. Filling positions with the right candidate is often as hard, as finding a job in the industry. It was proposed that an ACETA member/associate member organisation in the process of filling an employment position, forward the applications from unsuccessful candidates to ACETA’s central data base (with permission) for categorising and filing. This data base would be available to member or associate member organisations when they need to fill a position. This initiative represents a free, industry specific employment agency for the ACETA membership and would run alongside the ‘aptitude test’ program, helping to connect job seekers with employers, in the most efficient and cost-effective manner. The meeting installed a new board of management which in turn elected its office

The **level of interest** in ACETA and member enquiry has elevated significantly

bearers who will also perform the role of Executive Officer for the coming year. This AGM signalled the close of ACETA’s establishment phase and the dawn of a new development era, where numerous and relevant programs are operational, providing members and associate members with bountiful benefits and an enhanced industry landscape.

THE ACETA NATURE - IN BRIEF

The level of interest in ACETA and member inquiry has elevated significantly, and many have no experience of an industry peak body; therefore we feel it timely to address the nature of the organisation along with membership qualification and categories. ACETA is the only ‘peak body’ representing commercial entertainment technology in Australia and is recognised as such by the federal government. It is based on the traditional industry association model where a qualifying organisation make up the membership; this does not include individuals, who are usually served by societies, guilds and unions. ACETA is a not for profit organisation whose founding and guiding document is its Constitution which includes the Industry Guidelines. There are two levels of membership in ACETA, member and associate member. Member is an organisation who creates and/or manufactures entertainment technology or is a representative of such an organisation, therefore being accountable for product liability, compliance, warranty and various other legal and ethical responsibilities.

Associate member is a re-seller, service provider, hirer or educator of entertainment technology. All membership and associate membership is subject to compliance with the Constitution and the Industry Guideline. Following is the member and associate member categories:

MEMBERSHIP IS AVAILABLE TO:

CODE	DESCRIPTION
MM1	A qualifying organisation engaged in the research & development and/or manufacture of equipment and technology, applied in the production, storage, control and transmission of entertainment, leisure, corporate and educational programmes.
MR2	A qualifying organisation who represents manufacturers of equipment and technology applied in the production, storage, control and transmission of entertainment, leisure, corporate and educational programmes. Those in this category are commonly and historically referred to as an agent, distributor or wholesaler.

ASSOCIATE MEMBERSHIP IS AVAILABLE TO:

AMD10	A qualifying organisation that re-sells (retailers, dealers) sound reinforcement, staging, automation, lighting and other vision systems for mobile and installed live sound.
AMD11	A qualifying organisation that re-sells (retailers, dealers) audio production systems and devices for studio including music capture, mixing, mastering and post/pre-production for television programs, advertisements and motion picture.

AMD12	A qualifying organisation that re-sells (retailers, dealers) audio broadcast systems and devices for television, radio and on-line application.
AMD13	A qualifying organisation that re-sells (retailers, dealers) vision systems, that capture images for the production of entertainment and educational program.
AMD14	A qualifying organisation that re-sells (retailers, dealers) commercial integrated audio visual systems and devices.
AMD15	A qualifying organisation that maintains (service) the above described technologies detailed in Code AMD10 – AMD14.
AMI16	A qualifying organisation that provide system design, integration, installation and training of the above described technologies detailed in Code AMD10 – AMD14
AMR17	A qualifying organisation that offers for hire/rent the above described technologies detailed in code AMD10 – AMD14
AMA18	Allied industry associations
AME19	Entertainment technology education institutions, including schools, colleges and universities
AMM20	Entertainment technology media and trade events organisation

Member and associate member participation is most welcome. If you are interested in becoming a member or associate member please make contact with ACETA HQ by phone (03) 9254 1033 or by e-mail info@aceta.org.au.

Until next month
All the best
Frank Hinton /President - ACETA

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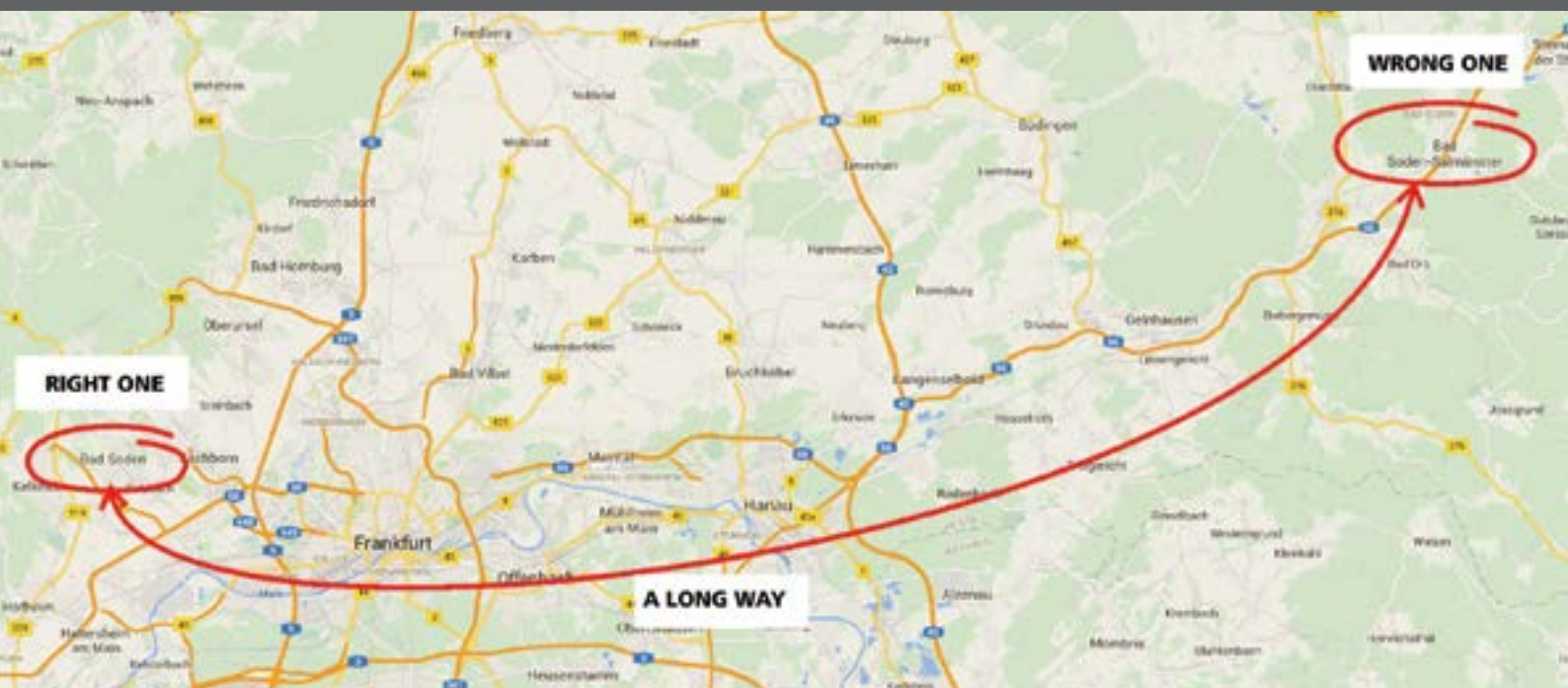
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LOST IN FRANKFURT

Twin towns or Twilight Zone?



When we stay in Frankfurt for the annual Pro Light & Sound exhibition, we don't stay in the city. Hotel prices are horrendous, the whole town is jammed with people, restaurants are always full, and like most cities the traffic is endless.

So, for quite a few years now my ARX partner-in-crime Col and I have stayed outside Frankfurt, in a little village called Bad Soden. It was originally a spa town in the hills (trans. Turf Baths according to Mr Google), but now a dormitory suburb for the City stockbrokers and their families, full of little boutiques, shops and restaurants where we are treated like family.

Perhaps best of all, it's at the end of one of the suburban train lines. So, after we've had dinner with clients in the city after the show closes for the day, we can just climb aboard the train, and if we're a bit tired and emotional (hic), we can go to sleep knowing that we won't miss our stop!

Our hotel is also right next to the train station, so in the morning we can have a leisurely breakfast while watching for our train to pull into the station, and be on it a minute or so later. Then it's a 20 minute relaxing ride into the Messe, and we arrive refreshed and ready for the day's "running of the bullshit!"

I mention all this because the train is by far the easiest way to get into the show. The only time we travel in a car, it's in a taxi from and back to the airport.

This year however, we organised to meet a German friend of ours after the show - let's call him Bobo - who would be driving down from Marburg, a town a couple of hours away. Instead of catching the train back to Bad Soden, Bobo offered to drive us there in his luxurious new Chevy Urban Assault Vehicle and then we could all eat at the local Italian restaurant with a couple of friends from the UK who were also staying at the hotel.



It sounded like a good plan, which only goes to show just how wrong it's possible to be!

The show finished at 7pm, and we packed up then followed Bobo up to the rooftop parking. His car had plenty of room for us - him, Col, me and Robert, our man from Singapore, all had room to spare, and we sprawled out in the lap of 'looxury'.

Not being a particularly good passenger, Col sat in the front.

"Do you know the way to go, Bobo?" he asked. "Not really," Bobo replied, "but we can use the satnav and follow the instructions. We'll be there in no time."

Col is not much of a 'satnavvy' type of person, believing (as do I) that getting totally and utterly lost is part of the fun of driving overseas!

However he will admit that they are useful if you need to get somewhere the shortest way and quickly. So Bobo started to type in 'B.A.D.S.O...' and then as Bad Soden flashed up on the screen Bobo yelled "Zat's it," jabbed OK and floored the accelerator.

A message flashed up as we were on our way out of Frankfurt, saying that our autobahn was partly closed for road works so it would direct us via a detour.

The line of traffic on the detour slowly crawled along, and what with the warm temperature inside the car I started to feel a bit drowsy.

"I'll just have a bit of a snooze," I announced to no-one in particular, and promptly fell asleep and started snoring!

I woke up about an hour later as we were whizzing along an autobahn at breakneck speed.

"Are we there yet?" I asked.

"Not far now," replied Bobo, "Zat detour took us the long way round, but now we are back on track."

"Yeah, we must be coming in the back way," grunted Col. "I don't think I've ever been this way before."

"Only a couple more minutes," said Bobo, and true enough, after we turned off the autobahn, a sign said Bad Soden. We slowly drove through the town, and nothing seemed remotely familiar. Even though we were coming in the back way, the whole layout of the streets and the buildings seemed out of place.

Bobo stopped the car as we looked around.

"This is bizarre," we all said, "it says Bad Soden, but from here it looks like a totally different place. It just doesn't look right." And indeed it didn't. Our town had a long straight road running downhill through the shops in the middle of it, then continued up another hill. This town was flat and the main road meandered through farms and fields.

All at once the truth hit us.

"This is a different town." I yelled. "I bet this is another Bad Soden. I mean, there are so many Baths and Spas in the area there might be more than one called Bad Soden, mightn't there?"

And then a thought flashed into my head. "Our one's full name is 'Bad Soden (am Taunus)', isn't it? This one doesn't say that! Type the full name into the satnav, Bobo, and see what it has to say."

Bobo typed it in, and sat there looking gloomily at the screen, his shoulders sagging.

"Uh oh, you are right. I have brought you to ze wrong town. I am so sorry!"

He stared at the screen, willing it to be wrong, but in his heart of hearts knowing it to be right.

"How far away are we?" Col asked him.

"About 85 kilometres in the opposite direction. This one is to the east of Frankfurt; the one we need is to the west, at least another hour away!"

"Looks like it's going to be a late dinner" said Col. "We'd better get moving."

As we raced our way west across the wilds of Frankfurt, at speeds Aussie drivers can only dream of, Bobo's luxurious softly sprung car swayed and dipped and swerved. Col started to turn a whiter shade of green as the G forces alternately pushed and pulled us from one side of the car to the other.

Although Bobo kept the hammer down all the way, it was getting dark when we eventually pulled into the hotel car park of the correct Bad Soden.

"No dinner for me," said Col as he disappeared off to the room, not to be seen again till the morning.

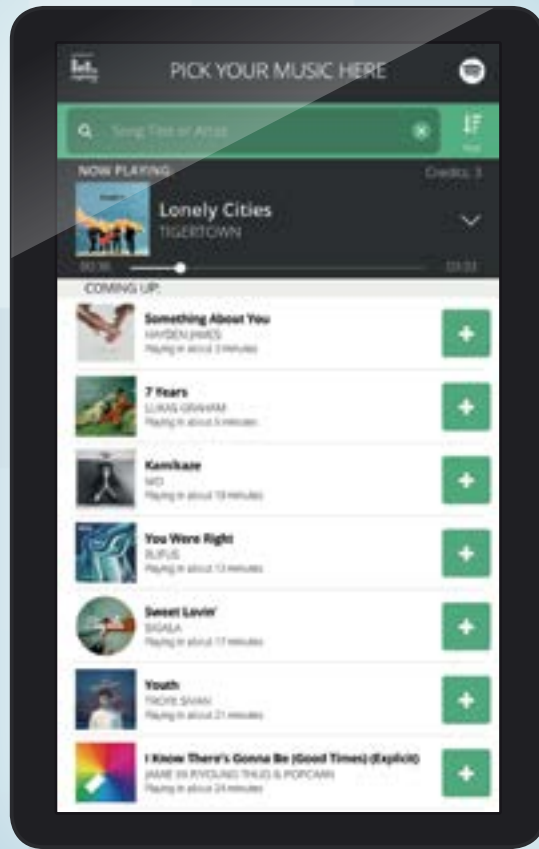
Our other friend Gary and his wife who we were to have dinner with had long since given up waiting for us, and gone off to eat before everything closed. The rest of us wandered the back streets looking for food and found a little Italian-ish bar that was still serving food, so we had some pizza, schnitzel and a cheeky little vino tinto.

As I leant back in my chair after the meal, Bobo was still apologising. I put up my hand to stop him, and said, "Look, stop worrying - this is one of those things we'll laugh about later!"

A burst of laughter came from the other end of the table. "See, we're laughing about it now." I leaned closer to him. "I tell you what though; I'm sorry to have to say this, Bobo, but you've just failed your Uber driver's exam! Better stick to pro audio!"

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