

CX

MONTHLY TECH NEWS
For Entertainment and Broadcast

CX 66, DECEMBER 2011 . \$5.50

ROCK ON THE ROAD:
Chisel dish up Nitro
Def Leppard do a Mirrorball

BROADCAST:
Big Camera talkfest

BAD MONEY EPIDEMIC:
Debt catches production firms



Pic by Bob King

ISSN 1320-5595



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REVIEWED:

Vari*lite VLX 3 wash / RTS digital
coms / Panasonic HMC-41E /
Honeycomb XO LED strip /
K-Array Blueline PA / iLive iPad,
no desk needed

NEWS AND VIEWS:

Entertainment Assist gig / CX
Dirty Money seminar / Grover
Notting rises / New Maizels
column / Wireless countdown /
Fry: Let's smoke the dog

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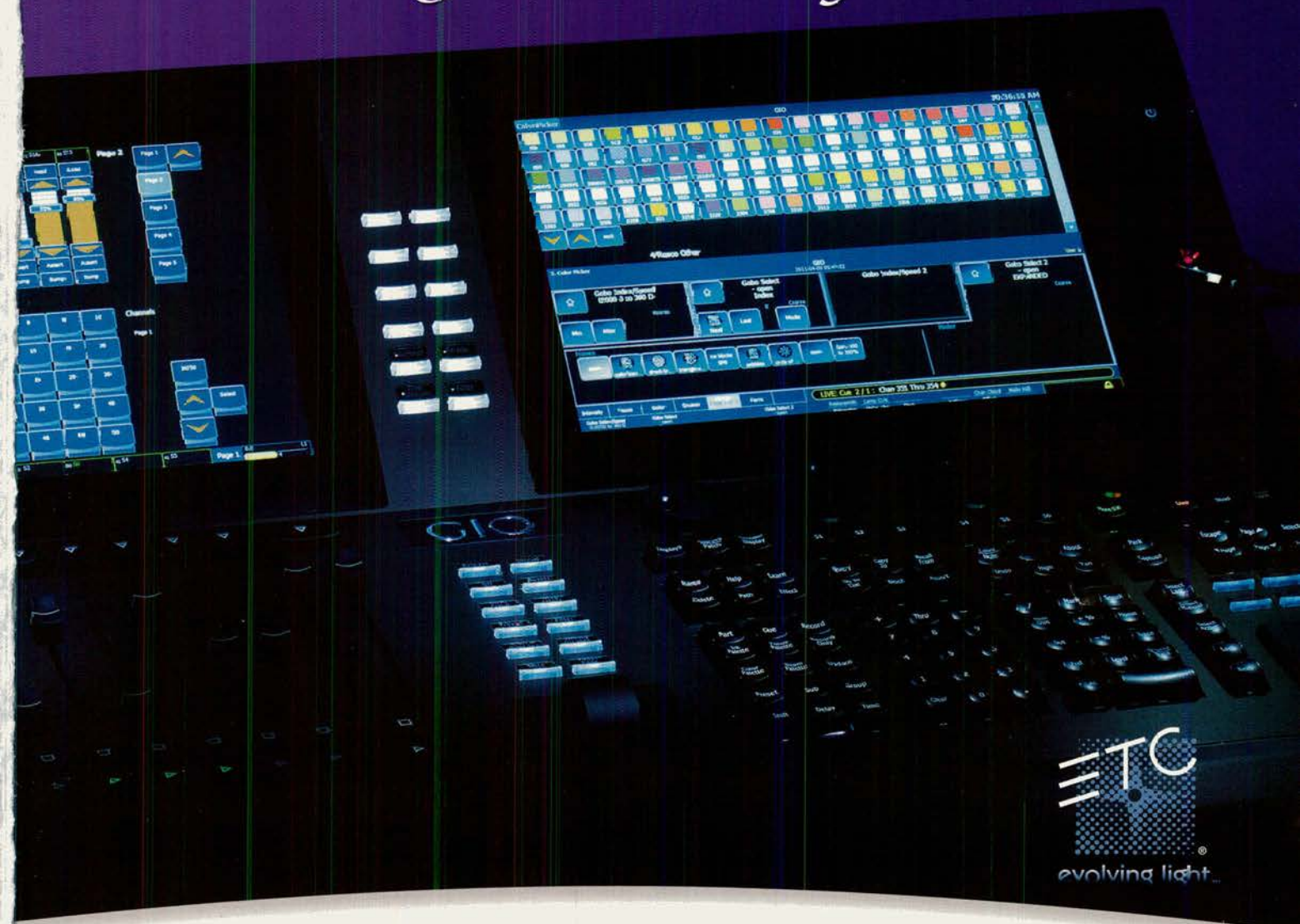
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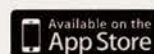


61
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TIME



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CX ANNUAL REPORT

Almost every print publication has suffered sales declines and of late the trend has accelerated. Readers prefer options: online (E-zines), APP and more 'channels' mean more costs for publishers. In 2011 I'm proud that CX has added CX-TV, CX-E and CX2 (APP) – all financed from our turnover. Instead of taking out profit, we've sowed it back in.

There was no Annual Report this time last year – if there were, it would have read like this: "We just shut our college, we have fifty bucks in the bank. The future looks crap. We lost \$1,500,000+. Our shareholder is eating worms."

We decided to build a new future and fast delivered all the parts you can now see. CX-TV is pulling very solid viewing. Some media types have been in touch about just how we did that. "CX-TV is not on YouTube, so how come you have some crazy 'viral' view counts?" (Like the Stage Safety report (64,172 views at presstime).

I am prepared to give our competition a clue to our success: CX-TV is part fuelled by Google AdWords. Yes, we pay per click sometimes. Another cost of doing business – you can't just put video online, even on YouTube, and just expect to get views. You have to promote the segment. You have to promote everything you do. Nothing is free, except love, trouble and oxygen.

The other really cool thing we've done is to move smoothly over into the broadcast market, fuelled by the big C word (convergence) and powered by the force of nature that is John P Maizels.

According to us, a magazine needs these things to succeed in 2012:

- Better content, reproduction and style
- A big commitment to the story

EDITORIAL

- Total passion for the trade covered
- A really good 'E' version with all the web links wired up
- Video packages that are professionally made
- TV channel, we have three of them at CX-TV
- World class APP version, we have CX2
- Strategies for social media and promotion
- Non intrusive email news, working to a formula

All the above needs to be delivered to the advertiser without additional cost, which is NOT what most media groups are doing – we keep hearing how they are 'bundling' new delivery strategies which is code for charging more, to try to recoup the extra costs.

If we can do all this from turnover, and not charge extra, then other media groups can do the same thing.

Finally, what is the driver for our APP version, 'CX2'? Quite simple – over time, we will replace newsagent sales with APP sales, print less copies, reduce our carbon footprint, and reach more readers in more places.

But one thing is a given. While there are subscribers (and we have heaps) there will always be a printed version of CX Magazine.

- Julius



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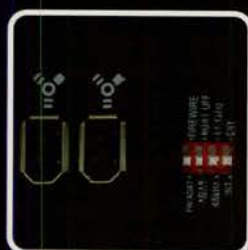
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National BROADCAST Technical Conference

The Conference Program:

(Identical in all 5 cities)

- 10am: Keynote with John Maizels
- 11am: The Problem with Loudness. (Moderated by John Maizels)
- 12 pm: Lunch & TRADE SHOW VISIT
- 1pm: Digital lighting, includes camera relationships
- 2.45pm: Live Broadcast risk management
- 3.30pm: Digital audio routing
- 5pm: SMPTE meeting (open to all)
- 5.30: Cocktails. Win an iPad 2

Conference cost \$197 including lunch, cocktails at 5.30pm and GST.

REGISTER ONLINE at cx-tv.com

TIMETABLE, ALL CITIES

- 9.30am: Jands Seminar Room open
- 9.30am: Syntec Seminar room open
- 9.30am: CMI Seminar Room open
- 9.30am: Production Audio Services Seminar room open
- 9.30am: Seminar, CX Black Money
- 10am: Broadcast Technical Conference opens
- 11am: Seminar, Outdoor Event Safety
- 12md: TRADE SHOW OPENS, FREE ENTRY
- 1pm: Seminar, Digital Lighting
- 2.30pm: Show Technology M1 training
- 3pm: Seminar, Digital Audio Routing
- 5pm: SMPTE meeting
- 5.30: Happy hour, free drinks!
- 6.00: iPad2 giveaway
- 7pm: Event concludes, load truck



Register here for the CX SUMMER ROADSHOW and win an iPad2

5 iPad2's GIVEN AWAY

BRISBANE

Monday Feb 20
12 midday - 7pm
Brisbane
Exhibition Centre
Exhibition room M4

SYDNEY

Wed Feb 22
12 midday - 7pm
SMC Convention
Centre, Goulburn &
Castlereigh streets

MELBOURNE

Monday Feb 27
12 midday - 7pm
Melbourne
Exhibition Centre
Room 219/220

ADELAIDE

Wed Feb 29
12 midday - 7pm
Adelaide
Exhibition Centre
Exhibition Hall K

PERTH

Tues March 6
12 midday - 7pm
Hyatt Regency
Convention Centre
Terrace Ballroom



CX Roadshow comes to you from CX Network. Summer Roadshow every Feb/March. East Coast Roadshow every September/October. Call 02 9638-5955 or email juliusmedia@me.com for info

SUMMER ROADSHOW

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FREE ENTRY TO YOU! 1 DAY, 5 CITIES

Seminar 1

The CX Black Money Seminar

9.30am – 10.45am. *(Identical in all 5 cities)*

Julius details how businesses restructure and make legal arrangements to avoid paying YOU. This is a journey into the secret dark side of (legal) company law. Learn the tricks of Administration, Receivership, Liquidation and Bankruptcy. This seminar could save you a lot of money - avoid the shonks! It could even save your house and marriage. Get the insider info from an expert who has been on thin ice himself. Everything is legal...

Session cost \$43 inc GST. **Book online at cx-tv.com**

Seminar 2

Outdoor Events. The Safety Seminar

11am - 12.15pm. *(All 5 cities)*

(Arrive at 10.45 for morning tea and networking)

An industry briefing on how to run a safer event outdoors. After recent disasters overseas, local safety specialists and production managers have had extensive dialogue with CX. This seminar details the laws, legislation and the practical steps necessary to minimize risk. How exposed are you? Session suitable for event managers, venue managers, production suppliers and anyone associated with an outdoor event of any size. Hosted by Julius Grafton. Session cost \$46 inc GST. **Book online at: cx-tv.com**

Seminar 3

Digital lighting: the revolution, explained.

1pm - 2.30pm *(All 5 cities)*

Thanks to the light emitting diode, the future has arrived with theatre and studio luminaires that run cool and dramatically effect economics. With five years or more of service life, lamp replacement is a thing of the past. This session will bring you right up to date with the players and the products in the market now; and a cost matrix, including running cost and acquisition costs and savings. With Jimmy Den Ouden. Session cost \$35 inc GST. **Book online at cx-tv.com**

Seminar 4

Digital Audio Snakes & Comms

3.30pm - 5pm *(Identical in all 5 cities)*

There's a bit more happening here than just replacing a 20 pair multicore with some Cat 5 cable! Now you can route audio where it is needed, and quickly patch complex systems. But there are a myriad of standards at work here. Which manufacturer uses what, why, and how can this benefit you? This session is in plain English with a minimum of acronyms. Hosted by Jimmy Den Ouden, this session is for audio techs and managers everywhere. Session cost \$35 inc GST. **Book online at cx-tv.com**

FREE ENTRY TO TRADE SHOW, VISIT THESE LEADING DISTRIBUTORS:





INDUSTRY NEWS



Christmas of Confusion

Production Firms restructure

Three east coast production firms have undergone structural changes that may affect some creditors, joining Sydney's Videoplus that has effectively re-emerged as Newlight Pty Ltd after it acquired some of the business interests of Videoplus and Showcorp. The sole Director of Newlight is Robert Dewstow – a former Director of Videoplus.

Earlier in 2011 Total Concept Projects (TCP) was revived in name when the name and website were purchased from the TCP liquidator by entities associated with founder, Tony Musico. Barring the small bump where the firm collapsed owing millions, clubs and installation clients could be excused for not knowing the 'new' TCP is not the 'same' as the old one.

At presstime an unusual entry occurred on the Australian Securities and Investments Commission company register when Phaseshift Productions Pty Ltd in Melbourne effectively re-incorporated itself. The existing (old) Phaseshift Productions Pty Ltd changed name to Faz Harrys Productions Pty Ltd, while a 'new' Phaseshift Productions Pty Ltd appeared on the register. Phaseshift is a significant supplier of touring lighting systems. 'Old' Phaseshift has

extensive finance company 'interests' on its register, while 'new' Phaseshift doesn't.

In Sydney a company known as ATT Unique Event Technical Solutions was liquidated earlier this year by creditors owed in excess of \$130,000. CX understands that this company may owe industry suppliers considerably more. Its controlling entity, Josh ('Mini') Moffat has since re-emerged as the sole shareholder (but not a director) of a new company, All Things Technical Pty Ltd.

Also in the emerald city, Lightfoot Sound Pty Ltd was placed in liquidation recently

following court action launched by a company from which they acquired another production firm. The Lightfoot Sound collapse did not halt works in progress as founder Noel Lightfoot also traces via another entity, which in turn owns most of the inventory.

CX WILL HOST A SEMINAR called "The CX Dirty Money Seminar": Production Profitability, debt laws, bankruptcy, collection of outstanding money (and how to avoid a crash) during the CX Summer Roadshow in February. Visit cx-tv.com for more.



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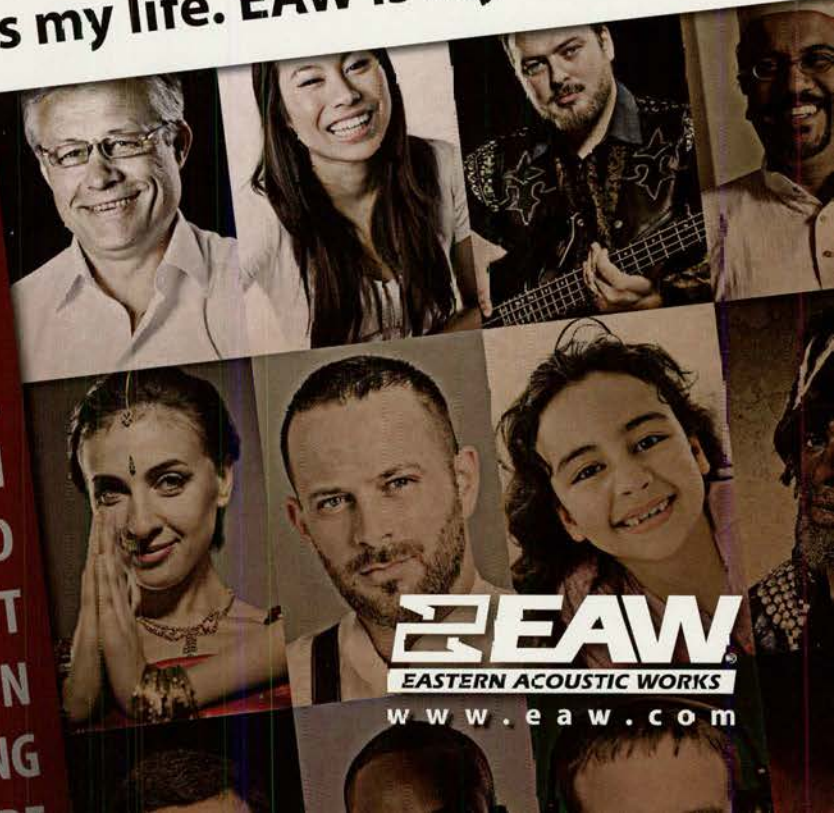
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Billy Miller's band finished the night

Gotta Have Heart

Entertainment Assist Launched in Style

Entertainment Assist's first fundraising event filled the Grand Ballroom of Melbourne's Sofitel on Collins last month. CX had a table, and can report it was a great event.

EA Director Larry Ponting kicked the event off by bastardizing a Hunter S. Thomson quote: "The entertainment business is a cruel and shallow money trench, a long plastic hallway where thieves and pimps run free, and good men die like dogs. There's also a negative side."

Larry told the crowd of industry folk that there is far too often a negative side – "over the years we have all been involved in far too many benefit concerts for industry friends who have hit crisis point, too many people needing help (but not knowing how to get it); too many people hurting and too many deaths for all the wrong reasons."

Amply fuelled and fed, the crowd loved the entertainment.

"What can we do?" Larry asked. "Well we

can talk. We can provide that small piece of human help that can go such a long way. We care for one another in this crazy game that we are in – just look around at who is here tonight!"

"We can educate – provide the right advice for our peers, for the new players, for the old hands too. EA aims to develop networks to help spread the word – the word that it is ok to ask for help. It is also OK to

offer help to our workmates – that there are answers to problems."

Staging an event like this is hard. Congratulations are due to the Gotta Have Heart committee (Robyn Good, Robyn Jelliff, Kim McCarthy and Jane Wing), along with GM Susan Cooper. Sponsors and supporters include The Pratt Foundation.

The event was sponsored by Stage and Screen, with audio from JPJ Audio. Lawrie Videky from Phraseshift supplied the lights, Trogg and the team at Pro Stage and Gig Power did the hard work, and Austage helped out as well. The crew loaded in at 1am, and then cleared the floor for a lunch event. Finishing the setup was a very tight race against the clock – and it went off without a hitch.

The line up of talent started with the MC Tracy Bartram and included a great poem from Michael Paynter, and performances from Paris Weiss, Cath Jamison, Ian Bland, Billy Miller and the Love Brothers, Rolling Entertainment, OWAN, Chelsea Gibb and Icehouse.

CREW LIST:

FOH: Richie Robinson (Icehouse) and Ryan Fallis
 Mons: Mark Crawley
 System Tech: Bodhan Birkett
 Lighting Director: Alex Saad
 Lighting Rigger: Michael Corbett
 Backline Tech: Simon "Shrimp" Christian
 Stage Manager: Matt Bodiam
 Stage Tech: Jason "Evo" Evans
 Icehouse Stage Tech: Anthony Thé



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Profile



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Beam



Wash

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CHOGM a production winner for Perth

Any large event is good for the live industry. Here's a behind the scenes look at how one element was handled. Twelve Robe ROBIN 600 LEDWash fixtures were supplied by the Perth office of lighting rental company, Clifton Productions, to provide lighting for the official photograph of the 2011 Commonwealth Heads of Government Meeting (CHOGM).

The photo session for the 22nd CHOGM event, the largest gathering of world leaders ever in Australia, was staged in Pavilion 1 at the Perth Convention & Exhibition Centre. Official photographer Andrew Taylor and a host of national and international media and TV crews needed an even and consistent 4500 Lux level right across the podium on which the 50 world leaders - including Head of the Commonwealth, Queen Elizabeth II - were posed for the photo.

Clifton's Martin McKinney was the lighting director for the shoot and he specified the 12 LEDWash 600s, which were rigged on three trusses, flown at two, five and eight metre distances from the stage.



Australia's 'first bloke' chats to other spouses after the photos

Using LEDWash 600s allowed the Lux levels to be easily adjusted to meet the requirements. "The huge (15 - 60 degree) zoom range gives us the flexibility to cover any scenario" explains Clifton's Perth Managing Director, Ed Matthews.

Using LED units also offered the mas-

sive advantage of keeping the temperatures comfortable, so the amassed Heads of State did not need to endure high heat levels that would have been output by using conventional fixtures for the task.

Clifton's has the largest inventory of Robe fixtures in Australia.

Skills Shortage Bites

Govt starts to overhaul training

Across the country and over the ditch the lack of quantifiable technical skills has become a large problem. Between the start of November and the Christmas slow down, freelance crew with 'the right chops' were scarce.

Now Innovation & Business Skills Australia (IBSA) is to consult the entertainment industry on renewal of the CUE 03 training package, now in place more than eight years. IBSA is proposing to progres-



CX has joined the Group, and can put those interested in contact. Email juliusmedia@me.com if you are interested in obtaining information.

sively transfer appropriate qualifications to the recently endorsed CUA11 Live Performance Training Package, which will become the 'umbrella' package in which all qualifications associated with live performance will be found.

It is intended that the CUE03 qualifications revised through this project will be endorsed in the CUA11 Live Performance Training Package. IBSA has formed a National Project Reference Group which will consult the live industry during 2012.

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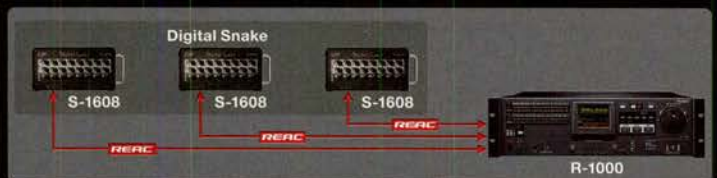
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National Broadcast Tech Conference

CX Roadshow Program finalized



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CX SUMMER ROADSHOW
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CX Roadshow has expanded with a National Broadcast Tech Conference, hosted by John Maizels. The conference will be one of many breakout events held across the one day event in five main capital cities.

The conference is in addition to exhibits from major distributors, and a Seminar program that includes the CX Dirty Money Seminar, and Outdoor Stage Safety.

Topics to be covered at the Broadcast Tech conference include Broadcast Loudness, which has become controversial due to moves to legislate the 'volume' of advertising on TV. Risk management of live broadcasts will explore suitable strategies that must be in place with the harmonization of national OH&S laws that commences in 2012.

The Broadcast conference is conveniently timed to start at 10am, includes lunch, and concludes with plenty of time for delegates to visit the CX tradeshow. Those who stay for happy hour have the chance to win an

iPad 2 in each city.

Following the conference, the first national set of SMPTE meetings will be held, allowing members and those interested to circulate ideas and issues, and be updated on SMPTE initiatives. John Maizels is SMPTE Director of International Sections.

The Conference cost is \$197 inc GST which includes lunch, and the cocktail party at 5.30pm.

Dates and venues:

- Brisbane Monday 20 Feb: Brisbane Convention and Exhibition Centre
 - Sydney Wed 22 Feb: SMC Conference Centre (Cnr Castlereigh and Goulburn streets)
 - Melbourne Monday 27 Feb: Melbourne Convention Exhibition Centre
 - Adelaide Wed 29 Feb: Adelaide Convention Centre
 - Perth Tuesday 6 March: Hyatt Regency
- There are 12 firms exhibiting at the CX Roadshow:
- Amber • Bosch • CMI • Jands • LSC • Meyer • PRG • Production Audio Services • Show Technology • Syntec • TAG • ULA

Info and registration at cx-tv.com

Norwest Add Adamson and Head For London

Unofficial Olympic Sound Announcement

Norwest Productions will supply live audio for the opening and closing ceremonies at the Olympic Games in London in 2012.

Norwest chairman Chris Kennedy confirmed the Sydney based company, operating in NZ and across Australia, will supply audio and expertise for Ceremonies at the London Olympics. "Excluding Beijing Olympics, we've done every Olympics this millennium", he told a Seminar in Melbourne.

Hosted by Adamson distributor CMI in Melbourne, the Return On Investment seminar heard that Norwest will also add a new Adamson Energia line array PA system. CMI head Peter Trojkovic and Kennedy signed off on the deal during the Seminar.

Around 40 invited pro audio company owners heard Kennedy and Trojkovic debate the merits of various investment strategies, along with some classic disaster stories.

- More on at CXtra on CX-TV.com

CX host Dirty Money Seminar

Focus on bad debt and company resurrection

Increasing bad debts are infecting viable suppliers who act in good faith and find themselves unpaid when a company closes or goes into 'an arrangement'. Throwing good money after bad is a tough decision, so how do you avoid being owed money?

CX publisher Julius Grafton will host a keynote seminar at the CX Summer Roadshow this summer in the main capital cities. Known as the CX Money Seminar, expect to hear a raft of case studies and salacious stories as Julius details just how company and tax laws operate.

While the seminar could be used by those prepared to do the ethically wrong thing, the intention is to forewarn honest contractors and businesses as to how the insolvency industry operates in Australia. He will also detail collection options for those owed money.

Julius is an acknowledged expert in company law and finance entity operations, having operated viable businesses for almost forty years, "and meeting some of the best shonks in the entertainment industry". He will lift the lid on the dark cases and reveal the tricks of the trade where unscrupulous traders exploit the goodwill of others and re-emerge unscathed.

The seminar starts at 9.30am, on these days:

Brisbane Monday 20 Feb
Sydney Wednesday 22nd Feb
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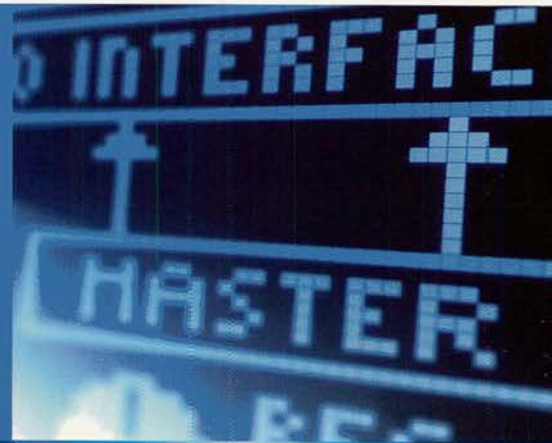
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Second Hand Neil Bows Out



Era ends for the guy they call Smithy

HE KNOWS what a JBL D140 speaker cost when it was new, when it was made, and why it is great. Aside from literally mountains of second hand audio, Neil Smith has sold almost everything musical, for a very long time! Julius explains:

"I'm not fully retiring, but I am closing the warehouse", Smithy barks and then laughs. His sidekick Leo (pictured, left) looks nonplussed, "I'll probably go back to a hammer and chisel".

Last year the second hand audio dealers, best known on eBay as Rock and Roll Auctions or Rock and Roll Music, did around 250 grand. "We made 140 gross. That's a good margin, but not enough to run this", Smithy gesticulates around his dark factory unit in the bowels of a complex near Manly on Sydney's northern beaches. Old records, books, and a cluster of guitars crowd the shelves. Some Lake, DDA and Neve processors await new owners.

Thirty years ago Smithys was at the old Big Bear shopping centre in Neutral Bay. "We did 35 grand a week and made ten percent. But it cost \$2,700 to run." That was the wedge – he sold goods, and took just 10% commission. Neil was THE foremost clearance merchant in the industry, and almost everyone bought and sold from him, myself included. But it wasn't enough margin.

The business known as Smithys PA and Stage Gear Pty Ltd was sold long ago, and is now based in Camperdown, Sydney. They do new and used equipment. Later on, Neil split

with his partner at the time, who went on to form Cannon Sound, who are also selling equipment, mostly online, from Sydney.

These days a trickle of second hand comes and goes, and most of it Smithy sells on eBay. "You have to know how to deal with it – it's like a supermarket, people put stuff in, and then decide they don't want things when it comes time to pay".

Neil dished up a hilarious and lengthy complaint email from an eBay member, complaining that the \$18 he had just spent with Neil made him unhappy. "Just received the box of Wieland (lighting connector) bits. Good work on the prompt shipping. However I am not all that happy....." "This from a sale that started at \$9", Neil says shaking his head.

Out the back, Neil has a JBL D130 15"woofer, itself a veteran. "The best speaker they ever made", he says. Neil has sold countless thousands of JBL speakers, horns, drivers and rig radiators. At the peak of the business, in the hungry days of the early 1980's, people would have Smithy build them a PA from the ground up.

"Wayne Simms in Wagga", he says, "has an original Jands JBL modular pub system. Years ago I sold him a Soundcraft 800B monitor desk, 24 into 8 – and he has rebuilt it. He has a PM 3C00 he rebuilt. Perreaux amps, and Jands J 920 amps."

Smithy knows everyone. He only has 20 percent vision, giving him a kind of squinting appearance, a lifelong legacy that doesn't bother him one bit. He plays bass guitar as 'Deek Rivers' in The Swinging Sixties band.

With four kids ranging in age from 15 to 29, and two ex wives, he plans to keep doing some second hand trading, only from home – without the overheads of a factory. "I'll keep selling Rockard paint", he says, "seems like I sell four cans a month, 64 cans a year, year in and year out!" This is a locally produced product that has

been designed for speaker boxes and road-cases.

"Here's a tip", he says, "Have a look at www.e-go.com.au - it's the BEST freight system in Australia. I guarantee. Trust me."

FIRST CAME SMITHYS, which continues after Neil sold it. Then there was Cannon Sound, and it's still going as well!

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1) James Pritchett and Ben Bruce, Auswide Productions

2) Matt Newton, Newton Entertainment

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2



3

New Faces on Production Scene

CX FOUND A CLUSTER of new and not so new production firms showing off their stuff. Not at ENTECH. Not at Integrate. They were at RSVP.....

www.auswideproductions.com

RSVP is not the dating site where CX meets future wives. It's one half of Australian Business Events Expo, and the two trade shows filled almost as much space (2.5 halls) in Sydney as SMPTE and ENTECH just recently.

But the story starts with the opening party

at Bungalow 6. After much diligent lobbying by uber publicist Felicity Zadro we rolled up for drinks and finger food. The latter was thin on the platters since almost every 5 star event manager and big hair wannabe had swamped the place. With strong paid rollup for the party the trade show obviously had some legs.

Daylight and the vibe was great in the trade show halls, with venues, caterers, entertainment concepts and a fair smattering of production suppliers on hand.

We met up with James Pritchett from Auswide Productions.

James started DJing and getting gigs before even leaving primary school then got the production bug at high school in Sydney, then did a Diploma of Audio at Sydney's Australian Institute of Music (AIM) as part of his senior school leaving qualification.

All this led into the more realistic freelance world of Norwest Coda and PA People and then he invested in a big truck. "I was 20, it

seemed like a good idea at the time", he explains. \$130,000 worth of Iveco 8 tonner later, slowly it dawned on James that his fledgling production firm Auswide was restrained by the truck.

"I'd go to pick up small hire such as two (Nexc) PS15's and a rack, in the truck", he said. Parking the thing wasn't terribly easy either, Sydney has a fast diminishing pool of spaces that are truck friendly. Try finding a truck parking spot within 5 kilometres of the CBD!

Auswide was developing some momentum as James acquired a diverse group of customers, from corporate to music, with some councils thrown in. They started to provide full production, with stage, drapes, lights, video and audio as a package, depending on customer needs.

Gear and shows

Like all good new production houses, Auswide can stage an event with audio, vision and lighting, with draping and staging in the missing links. They typically do small to medium scaled corporate events and roadshows, often interstate. Councils, car companies and event companies make up the bread and butter work, with the occasional larger scaled concert setup thrown in.

James works with colleague Ben Bruce, and they have a roster of up to 30 casuals they can call on.

In the lighting department Auswide boast some Mac 250's and 'around 30' LED fixtures, the ubiquitous Par cans, and a Hog 500 to drive it all.

Over in audio world, KV2 EX and ES boxes with EPAK 2500R amplifiers do the heavy work, while EAW NT29 powered speakers "go very hard". Auswide have a bunch of EAW SM129 wedges, propelled by Powersoft amplifiers. Desk duty is handled by an Allen and Heath ML 3000 32 channel board, with a Yamaha LS9 offering digital.

When James needs more KV2 for those larger events, he calls Greg Suttle from Suttlesound who also have a bunch of KV2.

Relationships

Like all good up and coming production firms, James keeps good relationships -which pays off. "We had a job at the Athletic Centre, Olympic Park (Homebush, Sycdney) and sure enough, the client under-specified and when the ethnic band arrived they demanded line arrays at 5pm on the bump in day", James says. As always, what they want to pay for, the production community will usually supply, so James called Norwest Productions.

"I called Nick Hutchinson that night, and he arranged guys to get in to their factory early the next day, and bring us a KF 730 line array!"

Also beneficial are the co-tenants at Auswide's premises in Sydney's Artarmon - two other younger production firms, Josh Wolf's Le Crème Production Services, and Matthew Newton's Newton Entertainment. Le Crème have a Wavefront PA, while Newton do pyro and air cannon special effects work.

As CX left, James was getting ready for another gig and unloading the 4 tonner. "Much more practical", he said, shaking his head and no doubt wondering about why he had ever bought a huge truck.

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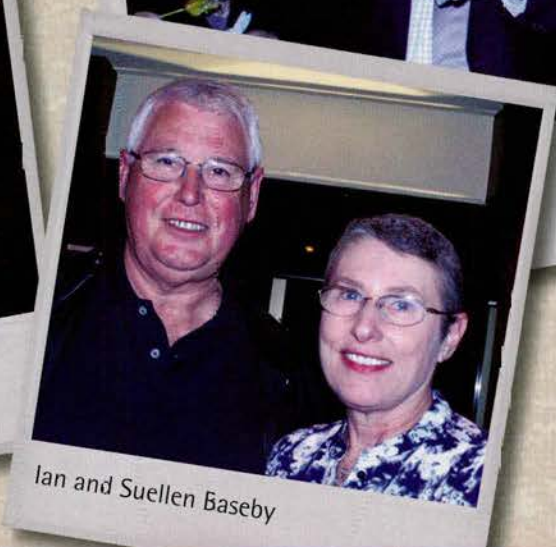
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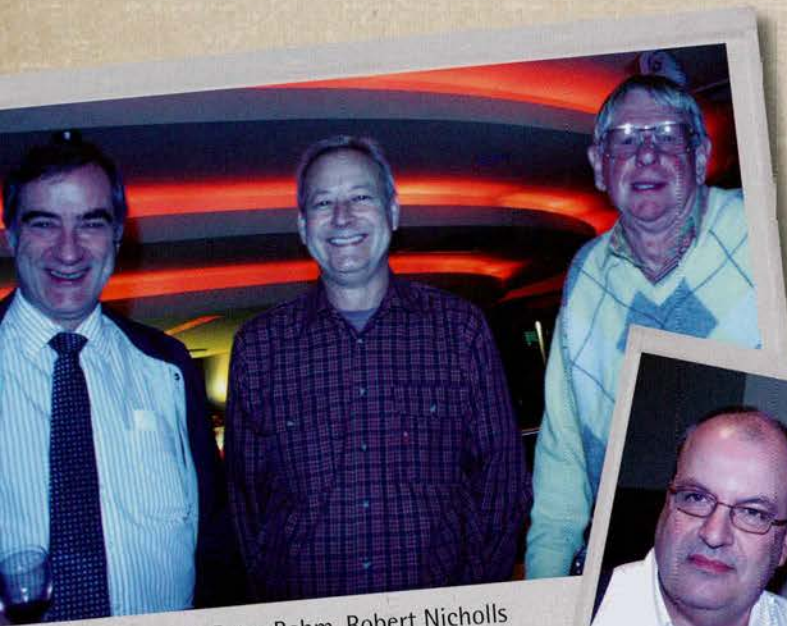
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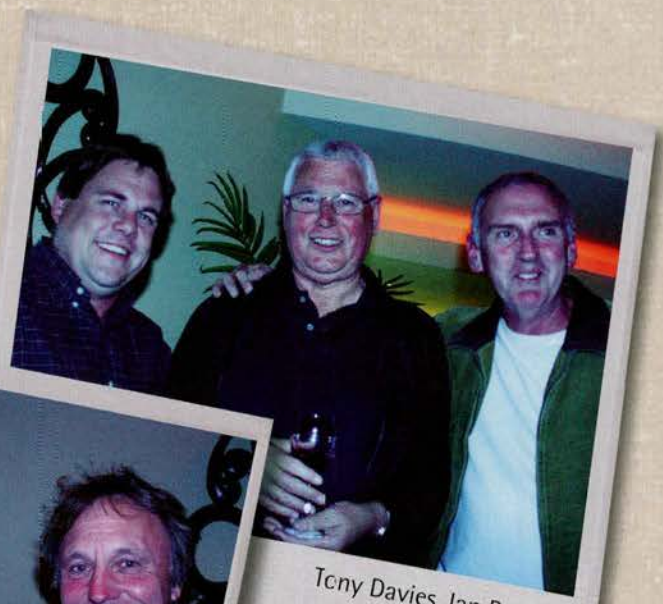
Ian and Suellen Baseby

Rosco Australia

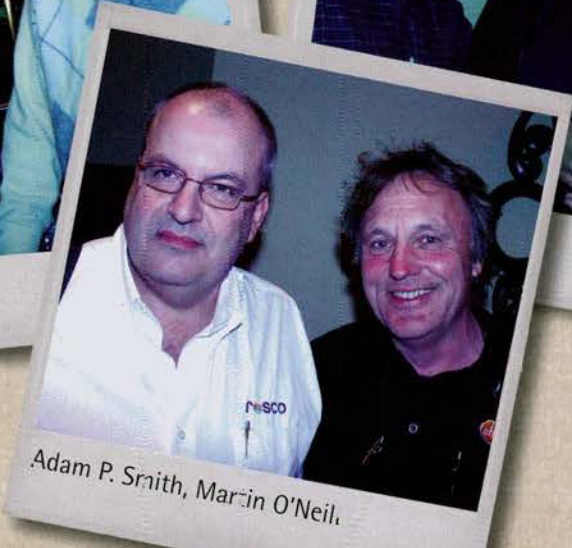
ROSCO AUSTRALIA founder Ian Baseby recently retired. Ian steered Rosco in Australia from early days when it was distributed by a photographic supplier, and then during the period Jands handled the line. He established Rosco Australian on behalf of the firm. CX enjoyed having a drink with Ian and some lighting colleagues in Sydney recently, to say goodbye.



Glenn Cousins, Peter Behm, Robert Nicholls



Tony Davies, Ian Baseby, Wayne Kellett



Adam P. Smith, Martin O'Neil

ON AIR

Church Production News



As we wind through a busy Christmas, with spectaculars, concerts and of course worship associated with the birth of Christ, some reflections.

Just recently I noticed a reversal of a problem – a young (23 year old) team member stumbled badly when faced with an Allen and Heath GL2200. His file was marked 'Audiic-A' meaning he was in the most trusted category of volunteer. Almost two years of dedication, using a Yamaha LS9 for various outreach gigs meant he had the full confidence of the over-worked lead worship pastor.

I had time to coach junior on the GL2200, and I pondered that until now, the usual issue was converting analogue desk users into the digital realm. If taught well on a GL2200, an engineer can adopt a smaller digital console and become proficient after about 5 hours.

Audio training for live work always works best when a new engineer is taught on a small analogue console, and then shown how to scale up to a larger one. Then moving to digital, they understand the bus architecture concepts that are mostly similar. They also know the relationship of the outboard stuff we use

in the analogue world with the desk, like how a third octave equalizer sits over an output, and how an effects unit sends from an auxiliary and returns to a fader or channel somewhere.

But back to junior-burger breaking into a sweat and not relating to the GL2200. I showed him the pre/post switches, and how the patch worked – left output in to one side of a third octave EQ, right in to the other. Auxiliary 1 was prefade to a wedge send, Aux 2 same but another send. How hard is that? We do take this stuff for granted, don't we?

The problem was the mental mind map of signal routing, and now that there are more digital desks in more venues than analogue, it

follows that more kids only get trained on the digital version. Which presents as a problem, down the track, because there will be analogue desks for another five to fifteen years in common use. Plus everyone should understand the patch, even if it is internal and preset.

Is this an audio only problem? Not really. When faced with a Lands Hog 1000, a Maximizer usually needs at least an hours instruction. Hardly surprising that lighties prefer to always use the same console type, then!

- Julius



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Def Leppard



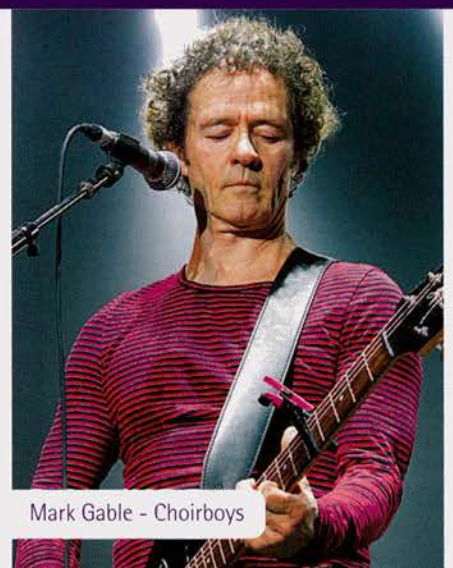
Heart, Choirboys shine on Mirror Ball tour



Rick 'Sav' Savage

"WE'VE GOT A BIG GEL bench here with racks full of gels, and they're just collecting dust now that the technology has moved on."

Rob Beaumont PRG.



Mark Gable - Choirboys



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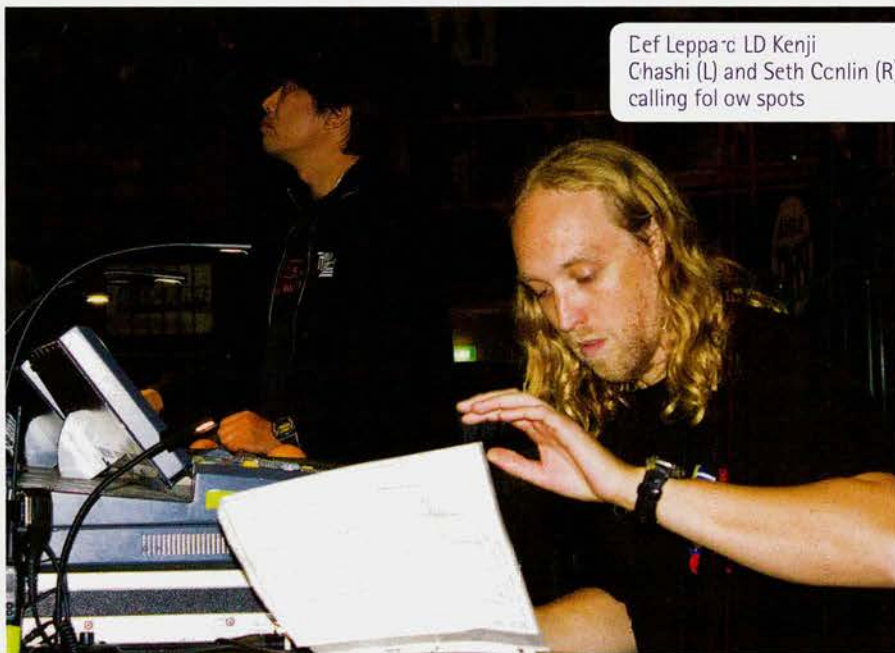
To some it was a strange, if not incongruent pairing: Def Leppard with 'special guests' Heart. Throw quintessential Oz rock legends Choirboys into the mix and the 'Mirror Ball' tour, which has been rolling across Britain and North America since June (minus Choirboys), continued to spin its special kind of magic down under.

Around the soundboard at the Newcastle Entertainment Centre there was a nug-a-thon taking place amongst the various engineers and crew as the last sonances of the Australian leg of the tour resonated across the room. And the word was out that this was a most amicable tour with each member of the entourage heaping kudos on the other.

In the pit

The Armageddon Pit was abuzz from the onset when the newly reunited original Choirboys line-up fired off a barrage of their hits, of which the Armageddon punters, who seemed to know every word, generously volunteered back up vocals-

Def Leppard LD Kenji Chashi (L) and Seth Conlin (R) calling follow spots



Def Leppard Sound Engineer Ronan McHugh



Choirboys mixer Will Sweet



-as did the seated section of the house.

The Choirboys reunited line-up is Mark Gable (lead vocals, guitar), Ian Hulme (bass guitar, vocals), Lindsay Tebbutt (drums, vocals), and Brett Williams (guitar, vocals).

And those punters contributing vocals wouldn't be too disappointed to learn that Choirboys sound engineer Will Sweet had microphones pointed in their direction recording every strain.

"I had some AKG 414s on the sides of the stage pointed straight at the crowd. And then I tried to set some out at the front-of-house desk, but the front-of-house rack on the Profile didn't have phantom power, so that was a bit of a bummer. But most of the room was in by the time they did Run to Paradise, and everyone was singing, so it sounded huge," said Sweet.

Live recording

Will Sweet points out how it's possible to make comprehensive live recordings in today's digital world.

"That was my Pro Tools rack sitting next to the Venue console. I had it up to about 33 or 34 channels of recording in the end. I'm trying to capture as much as I can cause we'll probably end up doing a live album," he said.

"The Profiles have a stage rack, which has 48 channels, and those 48 channels can be routed out to cards in the front-of-house rack to a Pro Tools rig. So when I hook my Pro Tools rig in I get all of those 48 channels plus I get 16 that are assignable. So all my effects, like my drum reverb, my vocal reverbs and then the vocal delay are all getting routed out and into my Pro Tools rig; and then the left and right faders get routed over there as well. So when I get back to my studio I just pull it up, and there's the effects, the left and right mix, the crowd noises--like everything's there ready to go," said Sweet.

Heart in the mix

Ann and Nancy Wilson are the only remaining members of Heart's halcyon 70s Canadian era, which delivered the Dreamboat Annie album hits Magic Man and Crazy on You. The current line-up includes Australian ex Jimmy Barnes bassist Kristian Attard (bass guitar), Debbie Shair keyboards), Craig Bartock (guitar), Ben Smith (Drums).

This was yet another outing for L-ACOUSTICS K1 and dV-DOSC systems, which Heart's soundo Keith 'Meaux' Windhorst powered to the max on Heart's more energetic rock numbers. The sweetness did return on the more melodic numbers, but the house also showed its SPL capability, erupting into a deafening roar after Ann Wilson's numbing rendition of Heart's 1987 hit Alone. This was a galvanising moment where the 61-year-old rock diva showed she still had few peers in this domain. Meanwhile Ann's younger sibling, 57-year-old Nancy thrilled young and old with her trademark leg kicks, her prowess on various instruments including acoustic and electric guitars, her haunting vocals, and her enduring allure. Nancy Wilson is indeed a sweet-Heart and is loved by all, including the camera lens.

Sound reinforcement

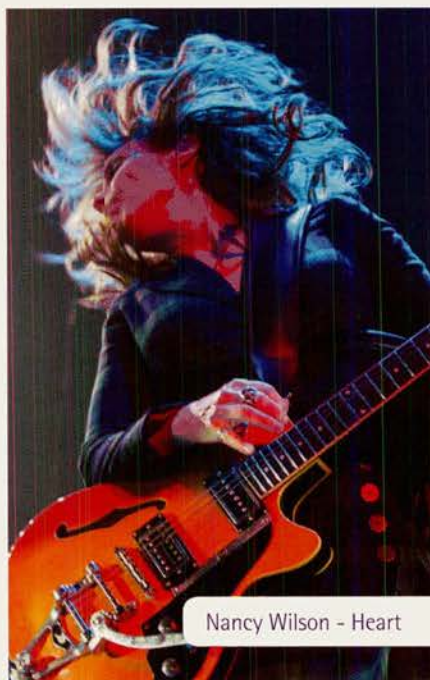
The L-ACOUSTICS K1 system made up the main hangs at Newcastle with dV-DOSC down-fill and V-DOSC for the side hangs. The newer L-ACOUSTICS SB2 sub enclosures were used for the bottom end.

Will Sweet spent 6 years with Johnston Audio and then 4 and a half years with Jands. Whilst he was very happy with the L-ACOUSTICS' performance on the Choirboys mix, he told CX that these types of line arrays don't always hit his sweet spot in outdoor venues.

"I was lucky to mix the support band

"I WAS LUCKY
to mix the support band
on the Ricky Martin tour
in 2000 when V-DOSC
was first being used
in this country."

Will Sweet, Choirboys Sound Engineer.



Nancy Wilson - Heart


on the Ricky Martin tour in 2000 when V-DOSC was first being used in this country," said Sweet.

For outdoor sound reinforcement Sweet has a preference over the V-DOSC and K1 systems for what he refers to as the old soccer ball or golf ball look attributed to systems like Clair Bros S4s, EV X-Arrays, Turbosound or Nexo Alpha. Sweet explains:

"With a single line of horns like the line arrays, when the wind blows, which is 90 percent of the time when you're outdoors... it's like a wah wah pedal because the top end gets sprayed and it gets blown past you. When it's a golf ball, like the old X-Array system, you have dozens of horns pointing out the other direction. That's why I reckon Akka Dakka still use one to this day (a spherical zonal system). So if the wind blows around, at least that top end is getting blown around to me (mixing) in the centre. In my opinion there's not as much horizontal spread with a line-array outdoors," says Sweet, who adds that if you've got perfect conditions outdoors, or for indoors the V-DOSC systems sound magnificent.

Dameon (Damo) Pryor from suppliers JPJ Audio was more than happy with the sound the audio engineers pulled from the L-ACOUSTICS system when he attended the Mirror Ball tour's October 20, Sydney Entertainment Centre performance.

When asked about the addition of side hangs to reinforce the horizontal spread at outdoor venues, Pryor said, "I think we're




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Lighting

PRG (Production Resources Group) supplied lights, the bulk of which were MAC III Profiles and MAC 2000 Wash XBs shipped pre-rigged on PRG's BAT Truss system. PRG also supplied 5 Robert Juliat 2.5K follow spots and 2 grandMa lighting consoles.

BAT Truss is a pre-rigged truss for moving lights, so the fixtures are ready for the hoist when they arrive at the venue. Rob Beaumont from PRG explains:

"I think the Bat Truss was originally designed for U2's Australian tour (2010). They had to get something that could be rigged quickly because the U2 rig was such a monster. So now everything is a continuation of that. "It's (a system) where all the lights are installed in the truss. You don't need to take all the cases with you. Everything's pre-loomed, so all you have to do is put your feeder cables to it and off you go. So you cut down on your transport, and you don't have guys unpacking cases any more.

"This wasn't really a huge show, considering what we normally do out of here. But I think it really gets down to the lighting designer, if he can make those things move. Some guys go out with 600 or so fixtures and you're thinking, what would you need that many for?" Whilst some of the long-term touring bands are still specifying PAR cans, Beaumont indicated that demand was fading along with their stores of gels.

"We've got a big gel bench here with racks full of gels, and they're just collecting dust now that the technology has moved on. No one goes to it any more. It's all just movers and LEDs now."



going to make a real point now of putting those side hangs, or stacks in at least--and that's everywhere. Although (for) the capacity you might not think they're worthwhile, but they (the audience) spread out; you know, and they want to have their own little section...so you need to cover the whole site really," said Pryor.

Def Leppard in the mix

The Mirror Ball tour is named after Def Leppard's latest album. The British hard rockers have had their share of misfortune since the band formed in 1977. In 1984 drummer Rick Allen lost his left arm in a car accident, but still plays with the band today with the help of a triggered drum system. And in 1991 long-term guitarist Steve Clark lost his life after consuming a cocktail of prescription drugs and alcohol. The current line-up of Joe Elliott (vocals), Rick Savage (bass guitar), Rick Allen (drums), Phil Collen (guitar), and Vivian Campbell (guitar) is the band's longest standing line-up, currently in their nineteenth year together.

Of Def Leppard's sound engineer Ronan McHugh (Ireland) JPJ's Dameon Pryor said, "The engineer did a fantastic job. Of the shows we've had out over the last six weeks or so, particularly in the rock 'n' roll genre, it was by far the best sounding mix that I've heard," he said.

Def Leppard toured with their own Digico SD7 FOH console and backline consoles, whilst Heart and Choirboys used the JPJ supplied Digidesign Venue Profile.

The Mirror Ball tour's Australian leg was a McManus Entertainment promotion, which employed Angela Ceberano's Flourish outfit as PR managers. McManus' Tour Director Tony Luby had also been the TD on a previous Def Leppard tour.

"I was lucky enough to tour with Def Leppard three years ago, so I knew the guys pretty well; they're a fantastic bunch of guys--and not only the band, but from management right through to the crew," Luby told CX.

In addition to his duties with Def Leppard, last year lead vocalist Joe Elliott teamed up with The Quireboys (UK) to form Down N Outz, which is a tribute to legendary British rockers Mott The Hoople. And to add to the confusion, Def Leppard's guitarist Vivian Campbell is also a current member of the newly reformed Thin Lizzy.



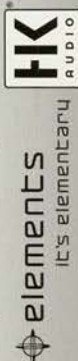
THE MIRRORBALL was a McManus Entertainment tour

• Story and pictures by Brian Coleman

The first scalable line array for all occasions

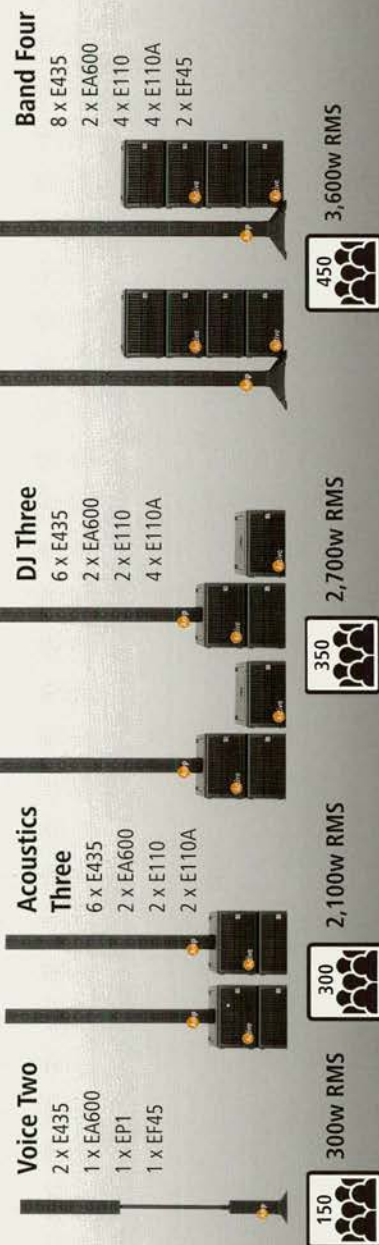
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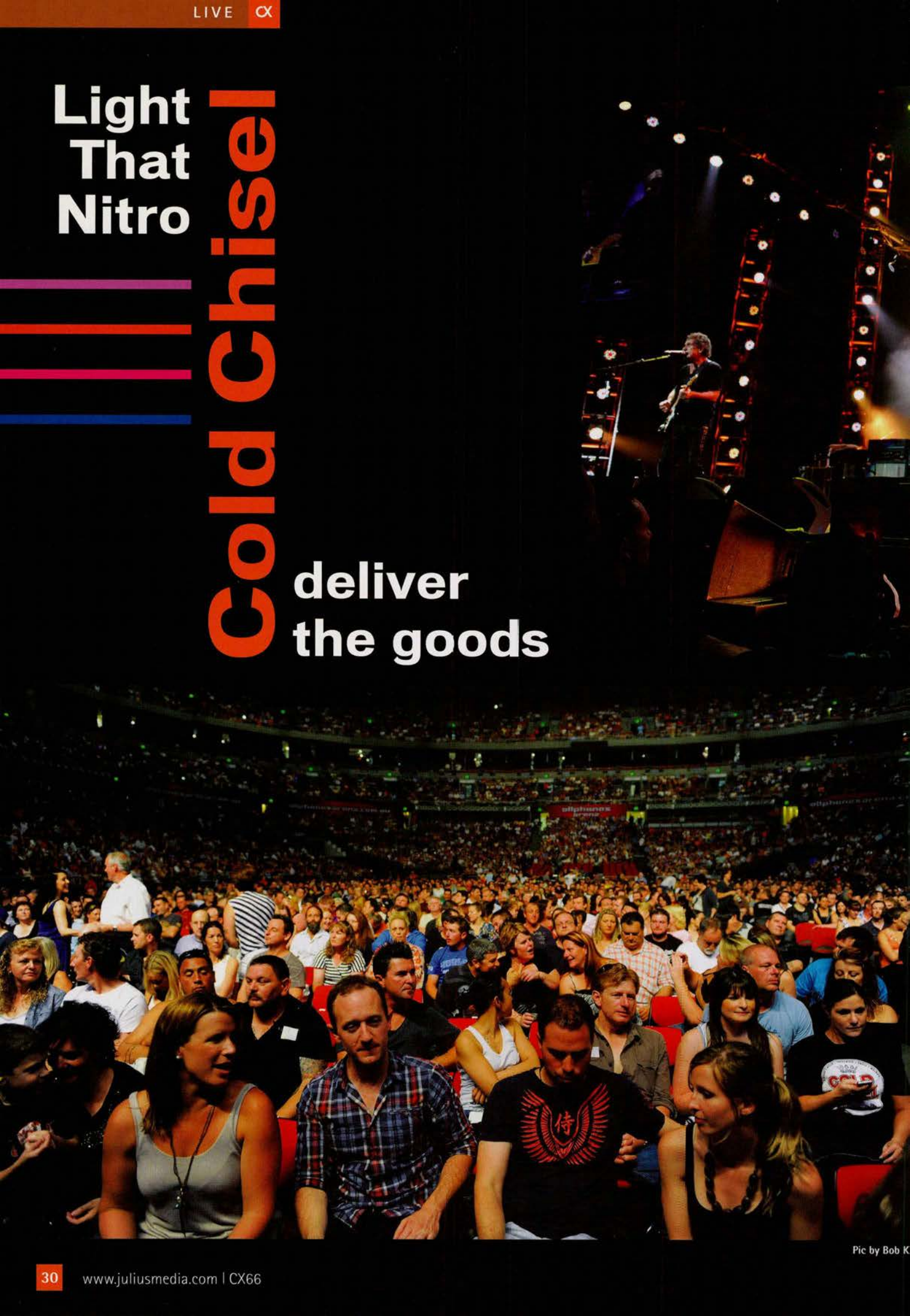
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of the year sold out, and band did not disappoint.

Julius saw the show at Allphones Arena in Sydney.

Before Cold Chisel hit the stage, photos of audience members scroll over the screen, collected by lighting designer Francesco Calvi from the foyer earlier. The crowd are very pumped – appreciably more than any show in Australia CX can remember. Best comparison is a Bruce Springsteen show at Giant Stadium – his home town venue.

The reviews are all true, the band kicked along hard and delivered a two hour show that would impress anyone who'd never seen or heard of them – and any foreigner would be amazed to see a packed stadium of 11,000 people singing all the words. Calvi helped out, with lyrics to 'Khe Sahr'. "So they can sing the RIGHT words", he joked.

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Bailey Holloway

At front of house Collin Ellis pulled down a 101dB(a) mix that was precise and musical from a Jands V-Dosc system. Collin tours six months every year with John Butler, and was happy this two month Chisel tour fitted with that.

Chisel are one of a handful of soundtrack acts, where the songs defined a generation – and the show confirmed just how many great songs came from the band. They delivered them all live, with a taught and tight performance as seamless as stainless steel.

"It doesn't sound loud", says Collin Ellis, "but in the heyday – the Chisel era – when I mixed INXS, we would get to 106dB and it sounded REALLY loud because of the distortion."

Francesco Calvi



Cold Chisel's Ian Moss



Pic by Bob King

Today's V-Dosc line array technology, carefully tweaked through Lake processors, delivers concert audio that is light years ahead of the old systems that threw big lumps of sound all over a venue, controlled from a four way crossover with some guesswork on a third octave equalizer.

Now days professional system engineers like Pat Richardson (Jands) have tools like Smaart and a knowledge bank regarding every venue. As long as there is a competent (and in Collin's case excellent) sound engineer doesn't push the system over the room trip point, an audience can expect good audio. They got it on this Chisel Tour.

Five trucks

Bailey Holloway is one of the nicer production managers in the biz. Standing in the afternoon sun outside Allphones Arena on a beautiful November day, he is ingesting a cigarette and explaining the logistics of the tour as if it's easy.

There are two tour busses for the crew for the lower east coast run, which allows a relatively tight schedule. Tonight's final Allphones (ex Acer) arena show will go to A Day on the Green (one setup day) and then direct to Win Entertainment Centre in Wollongong. Then a setup day and it will be a show at the Sydney Entertainment Centre – slightly smaller than Allphones, and the third arena show for the band in Sydney.

Tasmania, Northern Territory and New Zealand – they are all included across the two month tour.

"I do roughly about a day's prep work for each week of a tour", says Bailey. "And then I've got three days to wrap this one up, before we run into Christmas. I have to make sure all the gear is returned, and get all the accounts finalized so it can all be ruled off."

Chisel appointed JPJ Audio (Jands) CEO Eric Robinson as Tour Production Director, he has a long and close relationship with the band and singer Jimmy Barnes. Funny enough, in the show a picture of Robinson appeared on the big video screen with text: 'happy birthday ya cranky old bastard' – CX offered Calvi \$300 cash for the photo, but he said his life was worth more. Luckily, Bob King was on hand to shoot the moment.

The legacy of Chisel crew

Collin Ellis paid homage to *Gerry Georgettis*, long time Chisel sound guy and absolute legend of the early touring years in Australian rock. Gerry was tough – all the Chisel crew were. Lighting guy Meri Took is still tough today. They overnighted, they fought their way out of pub gigs, and they delivered more shows in less time than any other band of that era. Oils, Angels, Chisel all defined the golden glory days when bands would pack beer barns every night of the week, and tour managers would take bags stuffed with cash.

But Gerry didn't make it, because touring killed him. Or at least it screwed his brain, because he attacked a Ford dealership in Miami with a petrol bomb, then hung himself in the toilet of a United flight, on the run home to Melbourne.

More: *History section, juliusmedia.com*



Chisel tour crew busses



Collin Ellis

Ef-fi-cien-cy n.

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2. The ratio of energy delivered by a machine to energy supplied for its operation.
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This was a special event - more than a rock show



Start slow.....

"We can put the whole rig up, the truss fingers just scale outwards", says Eailey.

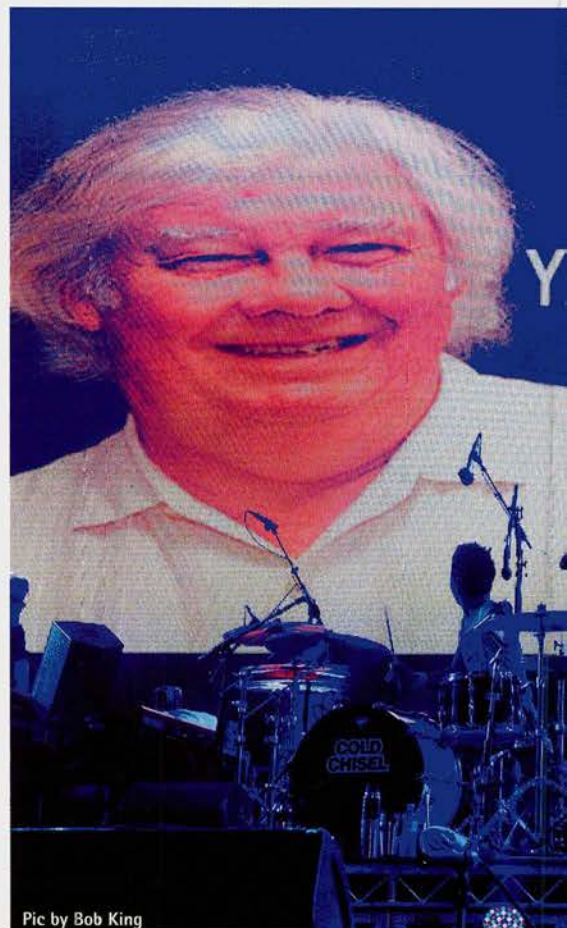
"...look at this:", Calvi says, and hits a scene on his Martin M1 console. 140 Mac 101 LED wash units pivot into position and the stage is soaked in deeply saturated Lee 106 red. "They weight 3 kilo's each. If I had only conventionals (movers) I couldn't put them all up in a tent."

Touring video for Chisel is Big Picture, with Dennis Murphy the video designer for this tour. The 12mm pitch screen behind the band carried imagery generated by Calvi, with some beautiful images that were colour matched to the stage lighting.

"We start slow", Calvi says, "no moving lights and no video for the first few songs. We don't want to blow our load too early".

The show whipped along, and an exhausted audience happily boarded the waves of trains that are the main exit point from Olympic Park. Merchandise sold well, bar receipts were excellent, and the cleaners lined up to mop the floor as the crew efficiently dispatched their ATS trucks.

Another day on the road, thirty years later.



Pic by Bob King



Pic by Bob King

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We're seeing a lot of LED fixtures on the market, both motorized and static. While many manufacturers are now turning to the "flat disc" style of moving head, Vari*Lite took a different tack with the release of the original VLX Wash moving head. The design was more like that of a conventional moving head light, one of the benefits to this being that it integrates visually with other fixtures. That, and it gave the designers space to fit in the rather interesting optics.

The VLX3 Wash is basically three sevenths of a VLX Wash. It uses three 120W RGBW chips, mated up to a lens assembly, which gives a beam angle between 15 and 55 degrees. If you think the front end looks a bit like a PL3, think a bit about who owns Vari*Lite and you can probably figure out why. At very close quarters (<2m) the edges of the beam take on a slightly hexagonal appearance, but on a stage you'd be unlikely to light anything from this close.

Pan and tilt are 540 and 240 degrees respectively, and the fixture achieves this range motion quite rapidly thanks to 3 phase motor technology borrowed from bigger Vari*Lite units. Position recall on the belt driven mechs is stated to be accurate to 0.3 degrees. The 3 phase motors are quiet too, as are the cooling fans. Three operation modes are selectable – fans on full, fans on demand, or fans on quiet. In quiet mode, some light output is sacrificed to prevent the LED modules from running too hot – we're told it's about a 10% reduction in output.

Vari*Lite VLX3

The VLX family has a new addition – VLX3 Wash

By Jimmy Den-Ouden

The RGBW chips make not only for a high CRI, but also allow variable colour temperature across the white output. 3000K-9000K mean you can colour match the VLX3 Wash to virtually anything else in your rig, from tungsten through to discharge lamps. The colour rendition is nice too, especially across blues. The blue on this fixture is a bit deeper than we're used to seeing on most LED units – very saturated and yet the output is still strong. The LED modules are rated to run 10,000 hours and still produce 70% output, and in-



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terestingly enough are actually replaceable when the need (eventually) arises.

In terms of usability, the VLX3 Wash is good. Vari*Lite style rigging allows the fixture to be mounted and run in any orientation you can think of, and at 20kg it's not lightweight but certainly not the heaviest fixture around either. DMX input and loop outputs are on 5 pin XLR, and there's a PowerCon connector for input. There is no power loop through connector, but given the unit will draw anything up to 7A you really wouldn't want to be cascading multiple fixtures off a single 10A run anyway. DMX control requires 23 channels.

According to the photometric data on the VL website, the VLX3 Wash is good for 4000-6000 Lumens (depending on wide or narrow zoom) with all RGBW chips running full tilt. So it's pretty bright on paper, and testing it out in our studio, we feel it lives up to this. Break out the bubbly, VLX has a son.



Brand: Vari*Lite
Model: VLX3
RRP: \$10,445 inc GST

Product Info:
www.vari-lite.com
Distributor: www.jands.com.au

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RTS BTR-240

The familiar BTR system has now gone digital. CX took a look and a listen.

As much as we love bits of wire, sometimes they're not practical – especially in comms applications. RTS has catered for users with the BTR range of wireless comms systems for some time – from the VHF BTR-200 through to the UHF BTR-700 and BTR-800 units still in use across the country. The BTR-240 is their third generation digital system running 2.4GHz, and as we see it, probably the most serious thus far. Yet at around a third the price of a UHF version, it has a lot to offer users looking for a lower price point.

The system is based on a BTR-240 base station, capable of supporting up to 8 TR-240 wireless beltpacks in full duplex. More beltpacks can be connected though with limited functionality. The beltpacks are rechargeable, running for 8 hours on the included Li-Ion battery. Charging is simple –

just plug the included plugpack into the beltpack. Additional batteries and a standalone charger are also available. Beltpacks are 2 channel units, so the system will support two isolated conversations simultaneously.

Range of the base station is around 300m line of sight, but expect a reduction once you start throwing obstacles such as walls in the way. If you need to extend the range, you can cable from the base to a beltpack using an existing Ethernet network and put the beltpack into “repeater” mode. Adjustments to the packs are made via simple key combinations in conjunction with voice prompts over the attached headset. 4pin XLR headsets of the TELEX or RTS flavour are compatible, just make sure to order the right packs since the connector is a different gender depending on the standard you use.

A key point to the BTR series of units

By Jimmy Den-Ouden



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has always been the ability to interface them to other, larger communications systems. The BTR-240 has this well covered, with separate 2 wire and 4 wire interfaces for each of the two channels. The 2 wire interface will run RTS, Telex, or ClearCom standard so it's very compatible with other systems. There's also an auxiliary input and output, with flexible routing options allowing you to choose what signals you put into and pull out of the wireless comms loops.

Really the thing to love about the BTR-240 system is its usability. The front panel menu system on the base station is super simple, and you really don't need to read a manual to get the thing up and running. Beltpacks are similarly uncomplicated, with no extraneous buttons to confuse users. Really, you just plug it in and go. The beltpacks take a little time to register with the base on power up, but since you're unlikely to be switching them off and on mid-show this isn't a real big problem. The BTR-240 really is a nice drop-in replacement for users requiring an upgrade to an existing system. Low budget users will appreciate having a professional grade system available at a greatly reduced cost to the UHF alternatives. The BTR-240 was the next logical step for the range, and it's a nice, well executed product offering.

Brand: RTS
 Model: BTR-240
 RRP: BTR-240
 Base - \$5,999.
 TR-240 Beltpack - \$1,579 plus headset
 Product Info:
www.rtsintercoms.com
 Distributor:
www.boschcommunications.com.au





Panasonic HMC-41E Camera HD for the masses.

By Jimmy Den-Ouden



For video of this GEARBOX review, click here in the interactive CX-E version of the magazine. If reading print, please visit juliusmedia.com to find this review.

Until more recently, Panasonic HD cameras generally recorded to P2 media. Great quality, but for the price of a P2 card you'd expect it. Their latest offering to the camera market is the entry level HMC-41E, which records to SDHC cards in the AVCAM format. So the media just got cheaper, as did dealing with the content on it. Many laptops include SD card slots, so data transfer is a doddle. The downside here is that it only records in HD – though this said, there are flavours of HD to choose from. You can choose modes from PH (average 21 Mbps) through HA and HG modes, all the way down to HE mode at around 6Mbps. These modes are available in a combination of 1080/50i, 1080/25p, 720/50p, 720/25p formats. Lots of options.

Speaking of options, that's exactly what the bit that lets you plug XLR mic leads into the camera is – there are no on-board XLR inputs. The optional AG-MYA30G accessory gives you twin inputs complete with phantom power. It's hardly surprising that this is not included – remember it's an entry-level camera. The on-board mic is not bad anyway. Also keep in mind that the camera weighs just on one kilogram, or a little more with a high capacity battery attached. The supplied battery is good for about 3 hours record time, but a bigger unit is available which bounces this out to around 7 hours.

On-board outputs are as you'd expect from a camera in this market sector. There



Brand: Panasonic
Model: HMC-41E
RRP: HMC-41E - \$2686.00.
 AG-MYA30G - \$463.00.
Street price around \$2700 for both
Product Info: www.panasonic.com.au
Distributor: www.panasonic.com.au

is a composite output with stereo audio, all on RCA connectors. HDMI output is available, as is component output albeit its on a proprietary connector and requires a special lead. The HDMI connector is a standard type.

Little production houses will love this camera. It's compact and the price is right, but some features inherited from bigger

cameras really add to its value. You can manually control focus, and equally importantly iris. If you've ever done IMAG in on a bright stage with a camera on auto-iris you'll understand the problems that average metering auto-iris can cause – bright stage, silhouetted speaker, no good! The 12x LEICA lens isn't the longest on the market by any measure, but it's certainly very usable. A simple lightweight tripod will support the HMC-41E just fine, or if you want to get fancy then it's light enough to rig off a Magic Arm.

The camera has multiple "scene files", which allow you to store various parameters relating to chroma and such, and then recall these. You can select from auto white balance, 3200K, 5600K, or you can do a manual white balance. There appears to only be a single manual channel (rather than A/B), and one button controls the mode. Hold the button down to do a manual balance. The front ring can control zoom, focus, or iris however there's also a dedicated iris wheel. Importantly for novice players, there's an "everything auto" switch. This mode at least guarantees you'll get pictures out of the camera without needing to actually know what you're doing.

Ultimately, for an entry level camera there's a lot to like about the HMC-41E. The XLR attachment is a bit pricey for us, but otherwise the professional style feature set really does make it a good little bargain.

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ProShop Honeycomb XO

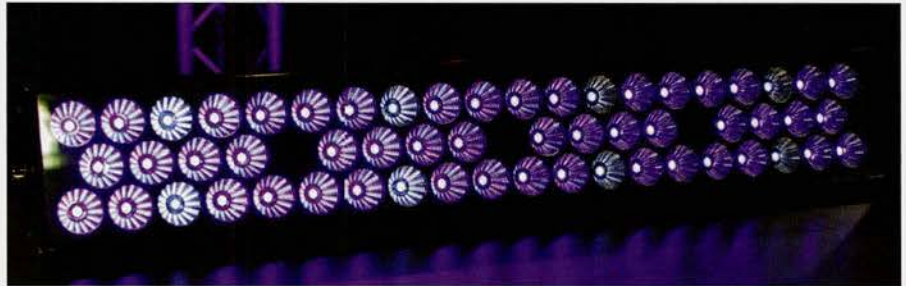
More for less...

By Jimmy Den-Ouden

I quite liked the original Honeycomb fixtures – they were great at the time they came out, but they were pricey and LED development has since marched on relentlessly. So it's hardly a surprise to see the ProShop people have been busy bees, and come up with a new Honeycomb – the XO model.

What's new about this is everything – it's virtually a different fixture, save for the fact that it's rectangular and has LEDs in it. The XO model is longer and from memory a little narrower than the original. The reflectors on the LEDs are bigger too. The 48x 5W RGB LEDs are complemented with 8x 3W white LEDs. The integration of RGB into single chips means no colour artifacts on shadows. No cooling fans mean it's dead silent.

The extra length means the yoke is now longer, and it feels a bit too flexible for my liking. There are several bolt holes drilled into it, so if you used a pair of hooks it probably wouldn't be a problem. The menu system is really simple – we figured it out without any instructions. The 4 character 7 segment LED display sits adjacent UP/DOWN and MENU UP/MENU DOWN keys. The first option is the DMX address, beyond this you can ramp each colour up and down manually. There's also an auto mode. Both 3 and 5 pin DMX inputs with loop throughs make connections simple, as do the PowerCon connectors with loop outputs. It wouldn't be difficult to make up some nice looms to run several units along a bar from a single feeder. I measured the Honeycomb XO at just on 1A with all LEDs on full, so you could easily cascade up to 8 units pretty safely.



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Brand: ProShop
Model: Honeycomb XO
RRP: Honeycomb XO – \$1499
 inc GST. Honeycomb XO
 Compact – \$999 inc GST
Product Info: www.showtech.com.au
Distributor: www.showtech.com.au

The beam angle is stated at 35 degrees, and in practice this feels wider than it sounds. For some reason I expected the beam to be oval or rectangular; but not round. Yet it is round, at least until you point the fixture at something really nearby. It's a nice light field, and seems pretty flat. The Honeycomb XO would be great on stage running up vertical trusses as an eye-candy effect, or even a blinder. We had no flicker problems when pointing a camera at the unit.

There's a baby brother to the XO – the XO compact also available. It's basically

half a full-size Honeycomb XO. Both units are lightweight, and sensibly built which makes them easy to handle and setup. The retail style packaging in which our test units arrived really makes me wonder if these fixtures aren't aimed almost into whatever is the lighting equivalent of the audio MI market. They're certainly priced attractively, and given this you'll get more for your money.

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K-Array Blueline KB-1

The "portable PA" gets a serious upgrade...



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By Jimmy Den-Ouden

The audio industry doesn't just cater to large scale concert production. Let's not forget the thousands of corporate, pub, piano bar, restaurant, and spoken word gigs that happen each year. Many musicians don't have the luxury of a dedicated audio crew, instead having to "DIY" their own sound. The new Blueline system by K-Array has been designed to put professional sound into the hands of musicians.

It's similar in form factor to the systems we've previously seen from the brand, but it's what's inside that makes it different. But let's start on the outside. The system ships in a retail box, and inside this you'll find it already cased and ready to take to the gig. The 12" active sub has a soft fabric slip-on cover, while the 8x3" array element and extendo-pole travels in a hard plastic case. There's even a shoulder strap included, so really this is a PA you can easily carry into a venue, even up stairs if required. The whole system weighs 22kg, and immediately this makes it attractive. So does the average 2A power consumption (What 3 phase outlet?). Setup takes about 2 minutes – remove covers, screw pole into sub,

put mid/high element on top, and connect up the included Speakon.

The sub enclosure is made of wood, with a metal grille. The array element is made from metal, and thanks to some DSP trickery its vertical dispersion can be set to either 10 or 60 degrees. Horizontal is stated at 90 degrees, and though we felt it was considerably wider we don't actually consider this a disadvantage. The sub contains the DSP, which we'll get to in a moment, as well as 450W and 120W amps for the sub and mid/high array element. The build quality feels really good. So far it doesn't seem too radical, until you look a bit deeper.

Like so many manufacturers, K-Array has incorporated multiple inputs, but unlike others they've gone further and added a 4 channel digital mixer, with parametric EQ, compressors, and a host of different reverbs too. The mixer has 2 mic/line inputs and 2 instrument / stereo inputs. So how does a stereo input work on a mono PA? Thanks to a USB port and the K-Framework software, it works pretty well. The back panel connections and controls are surpris-

ingly simple – it didn't take us long to plug in an iPod and mics.

In the most deeply scientific way possible we were soon enough singing along to the best of Toto. When you sing as well as I do, you need a lot of reverb. That was as simple as turning the reverb send on each mic up a bit. Some experimentation with the "FX presets" encoder led us to find a suitably pleasing result soon enough. The overall sound of the system is pretty smooth, perhaps a little lumpy in the low end but nothing a little EQ tweak on the output parametric wouldn't fix. Part of it is our room too.

Really, the results straight out of the box were pretty pleasing to our ears. But most users will want to get hold of the software and do some config of their own. There is a range of output options, and you can setup the line out as a Right channel feeder to another system for stereo applications. Truth is in most small applications, one





stick is likely to work pretty well. You can lay the array unit on its side and use the included foamy adapters to prop it up like a foldback wedge, but to me, this is really a bit beneath what the system's capable of. An auxiliary output and headphone socket are also addressable from the software.

The only gripe I have about the BlueLine system is the lack of Mac version of the software. I've seen a lot of musos hook up to the show with a Mac, but very few ever brought a PC. It would make sense to integrate control of the PA into the same computer that's running sequences / samples etc, so hopefully the Mac version isn't too far off. There is also the argument that needing a computer to adjust the PA doesn't make sense, but keep in mind that once they have their standard setting sorted out most of users will rarely deviate from this save for level changes which can be managed from the back panel.

So that's the K-Array BlueLine. It might be designed for musicians, but we think it has wider appeal in both the AV and corporate markets, not to mention anyone who looks after a small acoustic or jazz act.

Brand: K-Array
Model: BlueLine KB1
RRP: \$3984.00
including GST
Product Info:
www.kblueline.com
Distributor:
www.syntec.com.au

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S-10
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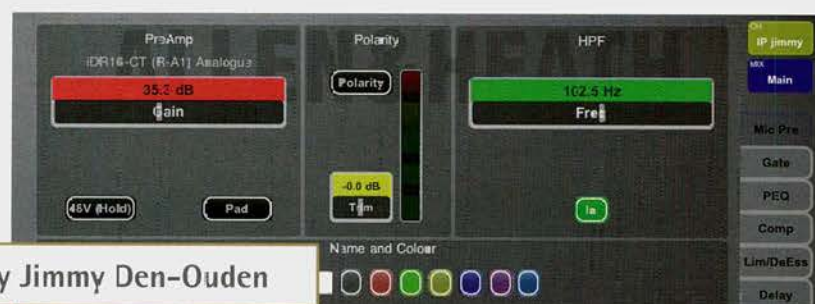


S-20
Active 2 x 18" High Power Sub-Woofer

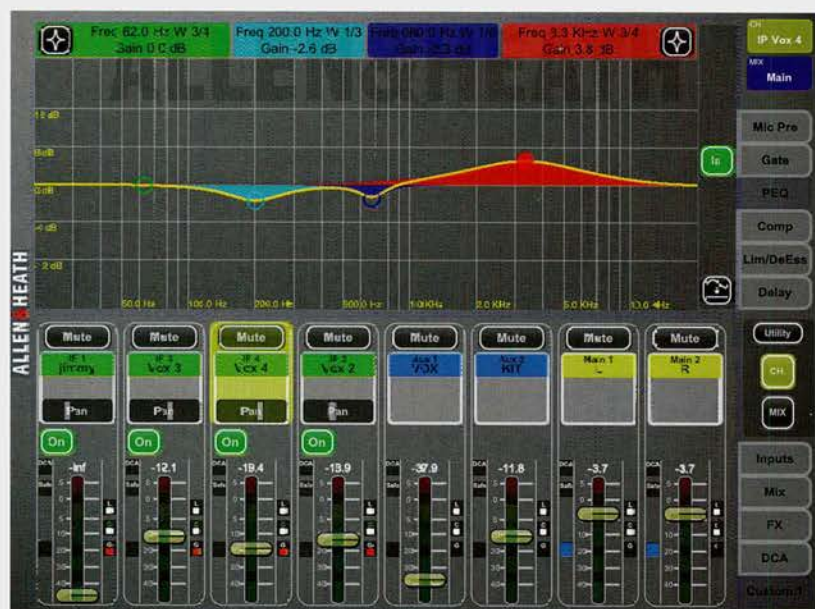


S-30
Active Bass Reflex 2 x 18" High Power Sub-Woofer

For more information: www.cmi.com.au



By Jimmy Den-Ouden



Perhaps not just yet, but A&H brings us a step closer with the introduction of their iPad App, iLive MixPad. Before we get onto the app, let's take a moment to understand how the iLive system works.

The iDR mix rack started life under a different guise – that of architectural audio. Adaptation and refinement, along with the introduction of various control surfaces saw it transformed into a live sound mixing system. To be very clear, the mix happens inside the rack, not the control surface. You can in fact disconnect the control surface and the mix will keep running. The newer series consoles link to the rack via ACeNet – Audio Control over Ethernet. An additional 2 Ethernet ports on the mix rack meant it was already geared

Allen & Heath iLive MixPad

Are we ready to do away with the console?

up for expandability, so a control app was almost inevitable.

The iLive surface takes a little getting used to – A&H don't really subscribe to the popular trends among manufacturers of digital boards. Still, with a little learning time the surfaces are quite workable. One of the nicest aspects is the ability to arrange your surface with a combination of channels, DCAs, auxiliary and group busses in any order you like. It's a quick process to get the console built just how you want it – or if you just want rows of channels you can recall a default configuration.

The MixPad app is similar – 2 custom layers let you arrange 2 banks of up to 8 of what-



ever faders you want. So you can have a couple of DCA's for rhythm, then some horns, vocals, and effects return or two. Very cool. Of course there are just normal and mix channel fader banks as well, and you operate these by scrolling side to side on the iPad. You can access all commonly required channel and mix bus control functions relatively easily once you know where you're going - nothing is really more than a page away. Phantom power, gain, channel name and colour, bus assignment, parametric and dynamic processing are all easily arranged on tabs on the upper half of the screen. GEQ racks on mix buses can also be adjusted from within the app, and there's even a "fatten" button, which sensibly enough requires you to hit a confirmation "yes" before it happens.

Building the custom fader banks is a fairly simple drag and drop operation. There's no scope to do scene recall, but this may come in time with a software update. Setup of the app is relatively simple - you need a wireless access point connected to the mix rack Ethernet port. Then the iPad must be linked to the access point via Wi-Fi (bring a pre-configured LinkSys unit with me when I anticipate they will need to link my iPad into a device on a gig). Once this is done and you have your IP config sorted out the rest is pretty simple - run the app and connect to the console. It's important



Brand: Allen & Heath
Model: iLive MixPad
RRP: \$109.99 (APP) \$5995 IDR rack
Product Info:
www.allen-heath.com
Distributor:
 iTunes Store

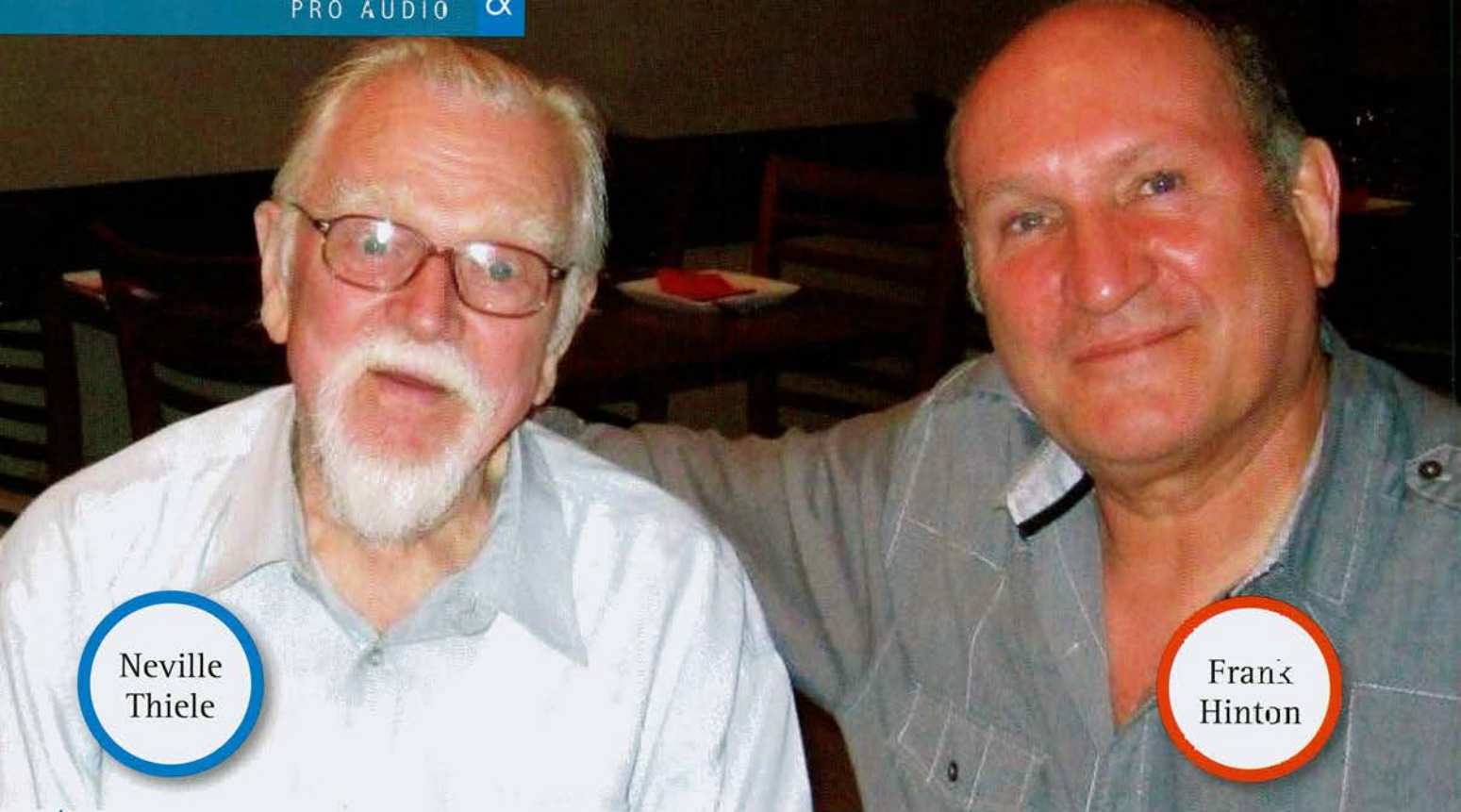
to note that you can't do the setup without a control surface, or a laptop running the A&H Live Editor software.

The idiosyncrasies of Wi-Fi don't (in my humble opinion) make it reliable enough to be the sole method of control for any show. The good news is that you can leave the laptop running the Editor software running concurrently with the app - so if the Wi-Fi falls over you've got a backup control mechanism in place. You can do the same with a console. A really nice aspect to the app is the negligible low latency between changes on the app being reflected on the console and vice versa - it's basically real-time, and it's smooth too.

I don't see the MixPad as being a stand-alone replacement for the console - I'd want a backup. It's not exactly a cheap app, but then again it's a lot cheaper than a control surface (even with the iPac price factored in). So where does this position it? Two places. It's a useful tool for operators on large shows to use when the mix position sucks, as it does in some locations. Being able to make changes to the mix as you walk around a venue is great, since it saves you dashing back to the console. For users in smaller venues operating on low budgets, MixPad could viably be used as a console alternative in conjunction with a laptop backup until such time as budget allowed for purchase of a surface.



For video of this GEARBOX review, click here in the interactive CX-E version of the magazine. If reading print, please visit juliusmedia.com to find this review.



Neville
Thiele

Frank
Hinton

Australian studio monitors take on the world

GREG SIMMONS TALKS TO Grover Notting's founder, Frank Hinton, about the design and development of the Principal Monitor series, the factors that led to the top-of-the-line Mastering Series, and his thoughts on running an ethical business.

GREG SIMMONS: Let's start with the Grover Notting philosophy. What's the background?

FRANK HINTON: My interest started when I was working at Strauss Sound Systems in the '60s with Gary Nessel. Strauss had become enormous with the explosion of live music. Most of the major bands in the country were using Strauss amplifiers, but there were really no parameters or guidelines so we were pretty organic in the way we produced things. We were doing all sorts of things based on art, not science, and there was very little delineation between R&D, production and sales. We all just mucked in and did things; if something needed to be built, we'd build it. We made our name with musical instrument amplifiers, like the Polka guitar amplifier and the Emperor bass amplifier. We'd often kit out an

entire band with instrument amplifiers, and in some cases we'd tag on a PA system for the singer. That PA system was derived from the other things we were making.

The interesting thing then was that there wasn't a lot of consideration for sound reinforcement because most of the energy coming off any stage was the instrument amplifiers, with column speakers for the vocals. The reason that worked, of course, was the small rooms. Music was still played in small rooms, theatres, town halls, church halls and so on. So we were building column speakers for vocals.

GS: A column speaker contains multiples of the same broad-range driver set up in a vertical column, yes?

FH: Correct. And we were using sealed boxes;

which is where I got my affinity with infinite baffle enclosures.

One of the parameters for those speakers was always definition in the voice range; the drill really was to get the voice sounding good, because they were vocal PAs. We didn't know it at the time but those column PA systems were very linear, very coherent and very in-phase throughout the vocal range. I doubt that we were getting much above 3.5kHz, and yet I still remember how hi-fi the things were. There was always nice detail in the voice – we won't talk about sibilance, bass extension or anything like that here. Strauss folded and re-surfaced as Nova Sound. They headed down the PA path rather than musical instrument amplifiers, because venues were growing in size experimentally and sound reinforcement had become an

issue. By that time I was selling equipment with the Brash/Allans group, and I can recall how honky and harsh the modern PA bins of the time sounded with their horn-loaded 15-inch mid/bass transducers and compression drivers. It was all bottom end and top end, there seemed to be no concern for definition and coherency; at least not like we were concerned about it in the '60s. The only concern seemed to be with coverage, due to the larger venues and audiences. The crossover point of these systems was right in the middle of the vocal range, so you can imagine what it did to the voice... In those days I'd often reflect on the stuff we built at Strauss, how it was so much more hi-fi than the contemporary stuff with bins and horns.

In the mid '80s I met the designers of Turbosound. Their philosophy encompassed the philosophy from the '60s, that it was very important for audiences to understand the detail and information of things, rather than just feeling lots of bass and treble. The original Turbosound enclosures, with the 10-inch cones and bullet-shaped phase plugs, were basically developed from what the industry commonly refers to as 'midrange'. The Turbosound designers were trying to get the entire vocal range through a single 10-inch driver with a paper cone, and they were pretty successful; I remember listening to their stuff and thinking to myself, "I haven't heard anything like that from a PA system... that's hi-fi".

GS: I had a similar impression when I first heard Turbosound's TMS4 boxes; they made the 4560/horn combinations that were popular at the time sound very primitive and incomplete.

FH: Indeed they did. I was brought up on the discipline that it's important for amplified sound to be understood; you've got to hear the detail in the voice. And, of course, when you look at the human voice you're pretty much encompassing most acoustic instruments as well. So it's a very important consideration and it's really not a bad point to start with; let's reproduce the human voice in all its beauty, without any phase errors or non-linearity... Although that philosophy grew from the PA industry, it is far more critical in studio monitoring.

GS: In the Grover Notting literature you've used a number of new phrases or terminologies, and a moment ago you said, "... what the industry commonly refers to as 'midrange'". What brought about such caution with terminology?

FH: In the process of creating our monitors, we've discovered a lot of industry terminology that people misinterpreted or didn't understand. For example, what is 'midrange' really? People have so many different meanings and interpretations; it's become a very open term that doesn't mean a lot. And then there are terms like 'lower bass', 'high mids' and all of that sort of thing; it's all arbitrary and not very definitive, and it makes it difficult to get your point across. It happens with components, too. Many people still refer to drivers as 'woofers' and 'tweeters'. What horrible names! I think 'transducer' and 'driver' are better words, and they let people know exactly what you're talking about.

When you're manufacturing or selling products, you have to use very clear and accessible language so that people understand exactly what you mean and don't choose the wrong product. So we decided to ignore the industry norms and try to be more definitive in what we say and the nouns and adjectives that we use.

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GS: When did you coin the phrase Audio Information Band?

FH: The Audio Information Band concept goes back to the development of the CR1 and CR2 cross-reference monitors, which were based on industry demand. Far too many people were saying they needed such a monitor but it didn't exist; there was a big hole in the market that no one was addressing.

People needed a small monitor that allowed them to judge how the voice was sitting against the other sounds in the mix, so we figured the human voice would be a good point to start the design process. When I talked to different people I learnt that their understanding of the human voice varied dramatically. Some professionals told me they considered the bandwidth of the human voice to be 300Hz to 3kHz – the old telephone industry definition, you know? But that's not the case at all. Our studies showed that male bass opera singers have been measured down as low as 80Hz. We also found that an 'ess' made with a certain formation of your mouth extends up to 11kHz. There's not much up at 11kHz, but your monitors have to get there properly because it represents the potential of the human voice; if a voice is sibilant, you need to know if it's going to be a problem or not when balanced against the other sounds in the mix. A monitor that exaggerates or subdues that 'ess' is not going to be particularly helpful.

So we define the Audio Information Band as extending from 80Hz to 11kHz, and we believe that a studio monitor should cover that range with a linear response, free of phase errors.

GS: What events led to the Principal Monitor series?

FH: Following the success of the CR series, we were constantly hearing people complaining about their full-range studio monitors; talking about how they could hear the crossover point because it was right in the middle of the vocal range, how fatiguing their monitors were due to the use of metal domes in HF drivers, and so on; all sorts of complaints. A lot of issues I didn't quite understand until I started out on the research and design for the CR1s and CR2s. We found a very good driver manufacturer in Scandinavia who makes the drivers we use for the CR series. In the process of finding those drivers, we learnt that most studio monitor manufacturers predom-

MOST STUDIO MONITORS use cheap transducers with pressed steel chassis – it's all about meeting a price point. The really good components are being used in the audiophile market.



inantly use cheap transducers with pressed steel chassis and so on. It's all about meeting a price point, of course, so that they can sell lots of boxes and make lots of money. The really good components are being used in the audiophile market.

GS: That's an enormous irony...

FH: Yes, when you realise that the studio monitors are being used to make the program being listened to by the audiophiles! The majority of studio monitor manufacturers are feeding the prosumer these days, not the professional. So the practitioners are not being presented with the good stuff, and it is little wonder that they are complaining!

GS: So you figured you could build something better?

FH: Well, not initially. My wife Julie and I had travelled to Scandinavia to meet the manufacturers of the drivers we were using for the CR series. We were getting along really well with them; they liked our philosophical approach to things, and, amongst other things, we discussed the complaints I'd been hearing about studio monitors. In the car park after the meeting, one of them opened the boot of his car, flipped the top off a small box and said, "You might be interested in this". It was a 184mm driver with a massive underhung motor assembly. The minute I set eyes on that driver my life flashed before me! I looked at its small cone area, I looked at the massive

motor on the back, I looked at the speed it could move and I could feel how much excursion it was capable of. I could also see how well it was cooled and was certain it would be virtually devoid of power compression, and I intuitively sensed that its bandwidth was probably enormous.

When I looked at the charts for that driver, it was just magnificent; its frequency response was amazing. So I got all of the technical documentation for it – and for all of the other componentry that was available to us – and sat with it for a few weeks, captivated by what was possible. I soon realized that a lot of things were falling into place in terms of my beliefs and philosophies, and I could envision a studio monitor that satisfied all the criticisms we'd been getting from the market place about monitoring.

GS: This driver had the potential to address all of these things?

FH: Absolutely. And that realisation was the defining moment for the Principal Monitors.

GS: Let's talk a bit more about that driver. An underhung motor means the voice coil is shorter than the length of the air gap, therefore the coil is immersed in a constant magnetic flux throughout its excursion. Correct?

FH: Correct. The biggest advantage is that you can use a massive motor, which provides an amazing amount of control over the cone. That, in turn, means you can get a tremendous profile on the cone – the depth of the cone, in other words – and therefore have a very large cone excursion with less chance of flexing.

GS: The cone can be small enough and light enough to reproduce mid and high frequencies, while still having enough internal volume and excursion to reproduce respectable low frequencies?

FH: Yes. That 184mm driver we're using is very serious, you can tell just by looking at it. Anybody with an interest in transducers would love it; it's a beautiful development. Underhung is not new, you know, but the techniques they've applied to this driver are. For example, what they've done to keep the driver cool... a lot of people don't understand that drivers get hot, and heat affects their performance.

GS: If I recall correctly, the typical cone

driver is about 1% efficient at converting electrical power into acoustic power; the remaining 99% of the applied electrical power is dissipated as heat, initially within the voice coil. That may not seem like a problem until you realise that the voice coil's impedance increases with temperature, which in turn causes power compression [i.e. a decrease in acoustic power output] on peaks, and therefore non-linear performance.

FH: Absolutely. The benefits of being able to remove the heat properly are increased power handling, reduced (or no) power compression and greater headroom. Headroom is important, and we've built it into all of our products. I think in a lot of monitoring these days there's not enough headroom, amplifiers are too small and so on. Everything we're doing has lots of headroom.

GS: So you've settled on a choice of components and you've got a basic idea for a monitor. How did the range of models come about?

FH: I'd always felt that there was no such thing as a one-size-fits-all studio monitor.

There are all sorts of different room sizes, all sorts of musical genres, and all sorts of different industry disciplines. Some people like to mix up close, others like to mix from a distance; some like to mix loud, others like to mix soft; and so on. People have a hankering for different things in a studio monitor; so we have to be application specific and we have to cater for all.

If you design things properly in a family of monitors, you don't have to have 30 different models; there's no need for that. If things are designed properly the range can be concise but nonetheless cover all the different disciplines and idiosyncrasies. We initially predicted we'd need about 10 models, and I named them Code 1 to Code 10 respectively. They all had to be voiced the same, so that the only differences between larger models and smaller models would be bass response and sensitivity.

GS: Which one did you prototype first?

FH: The Code 4. The obvious thing was to develop and refine one model first of all; solve any unanticipated design problems, get its voicing right and so on. The others would

then spin off that model. The Code 4 was the reference model because it made sense to start with something that sat in the middle of the range. It's the quintessential stock-standard type of monitor that the majority of the industry uses, with a fairly typical SPL capability of 105dB SPL at 2m.

GS: How did you determine the sensitivity for the rest of the range?

FH: The sensitivity is based around a figure of 105dB SPL. We wanted a range where the smallest monitor would deliver 105dB SPL at 1m, the next largest monitor would deliver 105dB SPL at 2m, the next largest monitor would deliver 105dB SPL at 3m, and so on. Apart from that, they should all sound exactly the same, and in some respects you could listen to any model and not pick which one it is – particularly with something like the human voice...

GS: ...that's assuming each monitor is capable of covering the complete Audio Information Band in a linear fashion.

FH: Of course! It would be extremely disconcerting to have models that sounded different.

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Therefore, you have to have the same designer and you have to have the same design criteria. The other issue here is that we dismissed stereo and chose to design to mono. We thought that was the better approach in terms of voicing and imaging, rather than relying on some kind of averaging effect between a pair of speakers to cover the range properly. In the past I've worked with other brands of monitors that were designed to work as stereo pairs, and sometimes we'd have serious imaging and voicing problems when using them in 5.1 systems. As a monitor designer you've got to consider 5.1 from the design stage onwards – you can't just say to your customer, "Oh, have three stereo pairs and take one out as a spare" because it rarely works as well. So we decided to design each monitor to do its job completely, on its own and in mono, without relying on a second monitor to help it along. Then you can add as many as you need without any problems.

GS: That's very interesting. What about the choice of components? The more components you add to a range, the more chance there is of getting deviations in voicing and imaging from one model to another...

FH: That's why we're using a minimal amount of component variation; in other words we've got it down to a very few components that cover the whole range of models. We're using the same HF driver throughout the range – we pad it back on the smaller models to maintain the tonal balance – and we're only using two versions of the same cone driver: the 184mm driver I've already mentioned and a 149mm version that sounds identical within the Audio Information Band but has less SPL capability. So there is essentially no difference between the drivers in each model, from the largest to the smallest. Furthermore, all models use infinite baffle enclosures that have been designed to the same criteria, and all models have Graeme Huon's Bandwidth Extension Module.

GS: What about the sense of space, or spatiality, produced by the monitor? That's always one of the first things to disappear when the enclosure gets smaller.

FH: Well, there are some secret little tricks of the trade here that people haven't cottoned on to. I'm not going to divulge those, of course, but I will say that we're not getting any of that 'big box/small box' stuff. One of the factors behind the big box/small box

problem is bass response, as you know. The fact of the matter is that we've got exactly the same low frequency management system in all of the models, big and small, and that's the Bandwidth Extension Module. It manages the big box/small box problem nicely; that effect is eliminated. Our smallest model, the Code 1.5, is a three-litre enclosure but it doesn't sound like it – even very experienced engineers from the ABC who have auditioned the prototype will tell you that.

GS: Speaking of low frequency response, the Principal Monitors all use infinite baffle enclosures. Wouldn't ported enclosures solve some of those low frequency issues, especially for the smaller enclosures?

FH: The interesting thing is that the first round of models we designed and built were all ported. Why? Because everybody uses ports, and so we went down that same path. The prototypes sounded good, they were performing very well, but there was something nagging at me that I just couldn't nail.

Around this time I started working on a sub, or a 'low frequency augmentation box' to use Grover Notting terminology. It was a 40-litre enclosure with a port, and it used a beautiful 260mm cone driver with a massive motor on it, very big. In the ported enclosure it was getting down to 30Hz, which is not a genuine sub-bass box but it's a good bass extension. Acting on a hunch, I decided to make an infinite baffle version of the same box. We started listening to a particular reference track; it was Roger Waters live with Van Morrison performing 'Comfortably Numb'. What hit us straight away, between the two boxes, was how musical the kick drum sounded in the infinite baffle box – it sounded like a defined musical note, whereas in the ported box it just sounded like a blob. Although we weren't getting down quite as low in the infinite baffle box, it was far more musical than the ported box.

GS: When you say 'musical', do you mean it is euphonic – adding colouration – or do you mean it is truth?

FH: I mean that it's truth. It's not colouration,

it's absolute truth.

A few days after that experience our tech was down from Brisbane listening to a piano piece he knew very well, and he swore black and blue that there were notes missing. And immediately it hit me... it was phase errors. His comment clarified the nagging issue I had earlier with the ported boxes. I thought it through, and realised it was the port. The port gives you bass extension, but it does a lot of other nasty stuff as well. You can't begin to understand the differences unless you are able to put two boxes together that are essentially the same in every way, except one is ported and one isn't – as we did. The difference was remarkable, in musicality. I just couldn't listen to the port. At that point I decided that in order to get the linearity I was looking for, we had to go to an infinite baffle design; I was never going to be happy with a ported box.

GS: Interesting... Ports are the magic sauce of monitor design these days; everyone wants smaller and smaller boxes with the widest bandwidth possible.

FH: Bang for buck, there's no doubt about that. Ports have their role, of course. They're obviously great for many applications, but I

have my doubts about using them for critical listening applications. So now there are no ports on any of our designs, not even the low frequency augmentation box.

So we've got this issue... We've determined that an infinite baffle is best for what we're doing, but with an infinite baffle enclosure we're going to lose some bass extension compared to the ported enclosure. I decided that I could live with that loss for the added accuracy.

At this point in the development process we were going to produce active and passive versions of the monitors, and we were talking to Dr Neville Thiele about designing the passive crossover. Neville designed us a fantastic fourth order passive crossover, a double Linkwitz-Riley, and applied a lot of his own techniques that no-one else uses. He also introduced us to Graeme Huon of Huon Labs. Graeme built the crossover that Neville designed. We had many discussions with Grae-



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me as he brought numerous prototypes of the filter for us to try. In one of those discussions I told him that we'd decided to go infinite baffle as opposed to ported, so we'd have to re-look at the bass response. Graeme said, "Let me show you something" and introduced us to his Bandwidth Extension Module. It gave us back all of our bass response, and then some!

GS: Without any problems?

FH: In most models it gives us back about half an octave of extended bass response, and then it pulls the response down very sharply; it manages the low frequencies beautifully, it's very clean. So we've solved our bass response issue. We can use an infinite baffle without any bass response problems; in fact, we get even more bass extension than with a port. There's a different version of the Bandwidth Extension Module in each model in the range; Graeme adjusted the parameters to suit each enclosure. His philosophy is very similar to ours, so the voicing at low frequencies remains the same from box to box. A lot of people who have used the monitors say they've never heard such good, accessible bass response before. They say things like "I really hear it as a musical note, it's not just a feeling". When we started out we thought our main feature would be amazing linearity in the Audio Information Band, but the bass performance has emerged as another big feature.

GS: I am curious to learn more about the Bandwidth Extension Module. The cynic in me suspects it is just a fancily obtrusive name for low frequency shelving...

FH: Oh no, not at all; it's not just EQ. Graeme and Neville have written a paper on it, it's been published worldwide. It explains all the things the Bandwidth Extension Module does, but you'd have to be a mathematical genius to understand it.

GS: I'll leave that for the mathematical geniuses... Let's get back to the passive crossover designed by Dr Neville Thiele.

FH: As you know, Neville Thiele developed the criteria for designing ported enclosures all those years ago, along with Richard Small. He's a very, very clever man.

GS: Yes, the well-known 'Thiele Small parameters'...

FH: Well, I'm pleased to say that Neville is the lead electronics design consultant for our product range. He suggested a fourth-order double Linkwitz-Riley crossover because it offers a flat frequency response through the crossover frequency, along with a phase response that was very acceptable for our purposes. The crossovers are made with precision components including linear air-cored inductors with minimised stray flux topology, which ensures accurate, reliable performance.

GS: You said earlier that you were going to make an active and a passive version of each box, and yet the range appears to be entirely passive except for the crossover into the low frequency augmentation boxes. What happened to the active versions?

FH: We wanted to make an active and a passive version of each box because we thought that was appropriate. We were listening to a number of active crossovers – analogue and DSP-based products – including some that are still considered to be the best on the market. What we discovered was that Neville's passive crossover sounded so much better; remarkably better, in fact...

GS: That goes against all the prevailing trends and justifications for active monitors. Surely a precisely tailored linear phase active crossover feeding amplifiers that were specifically designed for each driver would do the best job?

FH: Yes, that's the usual assumption. We were all quite shocked, to be honest with you, but we had to trust our ears. Why would we bother using an active crossover, with all of its associated complexity, when it's not going to sound as good as Neville's passive design? So in all of the two-way boxes the crossover to the HF driver is passive, at around 2.5kHz.

GS: Although you're not making active monitors you are making amplifiers to go with them, yes?

FH: Correct, we call them 'power plants'. They are being developed in-house with the assistance of several design partners.

GS: Would it be possible to design those amplifiers so that they sit on the back of the speaker enclosures, as is commonly done with active monitors?

FH: Good heavens, no! That was never our intention, not even when we thought we were going to produce active models. One of the compromises is extraneous noise, usually in the form of hum from the amplifier's power supply. It could be the physical hum of the transformer's laminations vibrating, it could be induced hum from the transformer's windings into the amplifier circuitry, or it could be both. I've experienced that myself with numerous brands of high quality studio monitors, including one that I used to import myself; we forever had transformer hum problems, and those monitors were considered very professional. Many of the end-users I've spoken to have also experienced this problem. An end-user pays a lot of money for a high quality monitor and is expected to accept an inherent hum? It's nonsense.

Another compromise is the fact that you don't have control of the heat dissipation. Power equals heat, of course, and power amplifiers generate quite a lot of it.

GS: Where do you get the enclosures made?

FH: When it came to forming Classic Audio Designs to research, develop, manufacture, sell and export the Grover Notting products, we wanted to include those members of society who are usually denied the opportunity to express their skills. We chose to work with the disabled. We have an understanding of people with disabilities, due to our own personal experiences, and we've had our experiences of discrimination against people with disabilities.

We ended up talking to Waverley Industries, a magnificent organization with over 255 disabled people working there. The thing that interested us about Waverley Industries was the fact that it's not a 'sheltered workshop', it's a proper factory where the employees are doing the same kind of work that those with less disabilities are doing out in the workforce – of course, we've all got disabilities, it's just that some are more obvious than others!

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- EV RE320 mic
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- iPac Studio Live remote
- iPac switch
- Jands HPC
- Joeco Blackbox recorder
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- Martin Mac101
- Meyersound Constellation
- Panasonic AW HS 50A video switcher
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- Phonic Summit digital mixer
- ProTools 9
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My two weeks with an iPhone

JOHN MAIZELS' inaugural column starts at the CX bunker, and wings all the way to LA, where Qantas throws him off the 747. Read on for everything you didn't know about using an iPhone 4S for TV reporting, and more.



October

19

Wednesday

It all starts here

It was one of those conversations that should have been very simple, except it was with Julius who habitually creates challenges for his team. Me: "While I'm at the SMPTE conference in Hollywood; it would be a good idea to pack a camera and do some stories for CX-TV and the Mag". See, that wasn't so hard. "Sure", says The Man, "I'll send you over with an iPhone 4S". In less time than it takes to get the foldback wrong at a gig, Pandora's 32GB of storage was thrown wide open.

I'll skip the bit where Jimmy and Les told Julius that he was mad and the futility of trying to convince him that any HD-Cam would be a safer bet. His highness dictated that a purchase would be made on Friday, and I'd leave on Saturday fully equipped to capture scads of 8megapixel Full-1080HD interviews on the 4S. "You'll be fine..."

were the parting words. Aha, sure. Just in case, I left the building with the XLR-to-iThingy adaptor ("it doesn't work"), and a strange iPhone tripod clip that just happened to be on the desk. Had someone trod these boards before me?

October

20

Thursday

Maybe not

Didn't hear from the CX bunker all day. Started to think that maybe it had been a bad dream: nobody spends a Grand on a phone that's only going to be used as a camera. And nobody sensible takes untried technology as the mainstay of a critical gig. Who, me? Just in case, did some research on audio interfaces... investigating how to get an XLR-bearing microphone into an iThingy seemed a good start. Took a multimeter to Julius' "doesn't work" XLR adaptor lead, and concluded that he must have purchased the high-level-input

October

21

Friday

The deed is done

It wasn't a dream after all... Julius organised to meet me at an Apple store, where he'd somehow negotiated a way to get an unlocked iPhone only a week after release. But an obscure paperwork requirement scotched the deal. Before a sigh of relief could even be breathed we were in a Telstra store with an unlocked iPhone 4S box in my hands, and none of the things that it takes to get one to work. Went into the Optus store and forked out \$30 to convert my normal SIM into a microSIM, and another \$9 to buy the adaptor that makes it full sized again.

Back home to discover you can't actually register a new iPhone unless you have a SIM that works. The phone wasn't as un-

locked as claimed, which is to say that it wasn't unlocked at all. Shouldn't you be able to register it using just WiFi? Yes, I would have thought so too, but no dice. Called The Man, who told me to give up and leave the phone behind. Aha!!! The gauntlet was down. Adopting my best Sherlock Holmes demeanour, I started looking for ways around the problem. Would the anointed desktop software make a difference?

Installed iTunes on my laptop, which didn't help with registration, but did solve the problem of what to do with the 200MB of disk storage I was holding for something useful. Thinks: must buy a bigger disk, or get Julius to buy me a new laptop.

October

22

Saturday

The panic of departure

As every traveller to the US knows, you get your first day twice. With only five hours available before the flight leaves Sydney, it was back to the Telstra store where ten minutes with a Mister-T microSIM gets me (actually, the phone) registered, and another ten minutes with Apple's support line starts the unlocking process. Could take up to three days, they said. Last step: find a way to protect and carry the phone, while still allowing it to come out quickly for a tripod moment. Bought a lovely soft-case, bright white to help locate the phone at dark gigs, and a leather-ish belt case which could take the whole shebang. Suitably armed, left for the airport...

In LA, spend second Saturday doing audio and photo tests. The compressor sounds brutal on voice recordings, but maybe there's an app somewhere with a meter and a switch. The XLR lead doesn't work.. yet. The movies look good, but I'm not sure which way to hold the phone so that up is up. Doesn't seem to worry the phone, which happily records and replays video always in the correct orientation. The LED flash is nice and bright, but flash photos have a strange washed-out look - made that a tomorrow-problem. The iPhone runs happily on my in-room WiFi, and I can browse the web on a screen that's too small to read. Cute.

October

23

Sunday

The phone becomes a phone

Step 1: my US phone number needs to be put inside this thing, which raised some serious eyebrows at the AT&T store. Yes, they could sell me a microSIM, but what do you mean it's an unlocked 4S?, and no it won't work with data. I take the risk, and it works as a phone, but not with data. With certainty that I can make calls, it's off to the Apple store to get expert advice on audio, flash photography, and the meaning of life. Actual ownership of a 4S gets me past the hundred people who stand in line in the hope of maybe seeing a 4S, and I'm allocated the only remaining appointment of the day to talk to an expert. Wait an hour for my turn. Worth it, because the Apple guy is brilliant. Yes, he's seen the flash problem before but is not sure why. It turns out the white case flares the flash back into the lens. Step 2: do some test video recordings and confirm that I can get them off. Yep, not too hard. The iPhone appears as a pseudo drive to Windows, and it's just like managing another directory. Too simple.

Step 3: find an audio adaptor to get an external microphone in and headphones out. A quick websearch found nothing

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useful: proof that anyone can look in the wrong place on the web. LA's plentiful electronics stores weren't much better. The Apple specialist at Microcenter – they have an Apple section bigger than Myers – didn't know of any suitable adaptor. Then the Gods smiled: on a remainders shelf 4 metres from the Apple guy, there was an iPod video lead and adaptor which was PERFECTO. Tip for adaptor hunters: iPod video uses the same pin as the iPhone mic.

Lesson for the day: there are no instructions with the iPhone. Some of the stuff you're supposed to know is really arcane... my parents need to explain why I wasn't born with the knowledge that a double-press of the button lets you take photos with a locked phone. Resolve to find a 12-year-old who can follow me around as an FAQ. Test of the iPod adaptor proves workability and good sound with my headset mic. I'm ready to begin.

October
24
Monday

**Flash clash means
nix pix for Oz hick**

The day of the first real test arrives at Los Angeles City College film school's annual hands-on

day. Mole Richardson brings lights, JL Fisher brings dollies, and Panavision brings a crane and cameras. I plan to shoot a story on some of the truly bizarre electrical standards and practices which are the way of life on Hollywood sets. Hands up: who thinks that Camlock represents the ultimate in safety? Without warning the iPhone turns on the flash LED, which then runs continuously while I grab bad distant establishment shots. By the time I come to shoot something meaningful, the battery is down to 35%. I have no charger, I'm outdoors, and you can't change the battery on an iPhone. Perfect combination.

I take a lot of stills of weird plugs and sockets, get good video of people connecting cables and lights being turned on, and shoot a couple of closers. Figure the story will come together.

Also use the phone a bit as a phone (novel concept; can't generally make calls from an HD camera); get lots of complaints about echo. Oh dear. An LACC student recommends "Video Director" as a replacement for the inbuilt camera app, and several film makers wax lyrical about accessories which will turn the iPhone into the film-maker's dream device. Unfortunately, the battery is still flat, so it's not my dream device at this

October
25
Tuesday

exact minute.
**iTunes is smarter than
I am. Not**

Make my first purchase from the App Store: spend 99cents on "Video Director". It adds a VU meter, buttons to lock white balance, and exposure, and half-works as advertised. Tip: everyone knows a 99 cent app which does something or other. Some of them are worth 99 cents. It will cost you half a million bucks to try all 600,000 apps.

Later that night I connect the iPhone to my disk-starved laptop and cleverly download all the video to an external drive. I leave the phone charging. In the morning I wake up to crashed machine: even though I know there isn't enough space, iTunes has started and insisted on taking a secret backup to the laptop too. Windows does not like a C: drive with 0 bytes left.

Spend the day discovering shortcuts and cutenesses, and HDR mode which really does clean up a lot of otherwise bad still shots. And, nothing to do with the phone, go to Amoeba Records which is an LA must if you're into recorded media.

October
26
Wednesday

**Wanted: keen eye and
steady hand**

Use the iPhone to shoot segments for a story about D-SLR cams. Isn't there something weird about that? Three bad takes to camera are perfectly exposed. The last take is bees-knees of intonation, phrasing and content, rendered useless by the exposure which goes mysteriously crap for no apparent reason. Oh, and I discover that the facing ("front") cam is 4x3 and low res. While cleaning the screen also discover the pulldown weather and stockmarket ticker. Add AUD, USD and Los Angeles to the displayed info. Some things about this phone really are as cool as they say.

Invited to the Technical Emmy awards, which is lit for dinner and not for TV. Ironically, too dark to take a clear photo of the Apple guy at my table, who receives an Emmy for the iPad. A high res camera does not magically fix bad light.

Into the groove

Apparently "running apps" consume resource even when in the background, something that was never a problem on my

October
27
Thursday

Palm. And, as I find out later, such background apps can also flatten the battery without warning. Download gigabytes of files via my laptop without help from iTunes. But a seven minute video, over a Gig, won't download. Turns out my laptop isn't fast enough, or something technical like that.

October
28
Friday

**We now cross live to
our man in LA**

Thinking this is my last day in the US, call AT&T on the way to the airport and they kindly refund my unusable data purchase even though they don't have to. Excellent customer service. Tip: At \$100 a year which covers 50 full days of calls, the AT&T GoPhone plan is still the cheapest way to maintain a US cell phone number.

Sit on the plane waiting to push back, and wonder how I'm going to balance my report on the good and bad things about the iPhone. Suddenly: "Folks, your Captain. Qantas has grounded the fleet". Ah. That was unexpected. DAMN. Will have to cancel at least two days of TV work back home, so call the station. They whack me on air: "we cross now live to stranded passenger Maiz". So THAT's what it sounds like when you're on the other end!! Can hardly hear incoming audio; seems the phone really isn't very good on the AT&T 3G network (later told that forcing it to 2G would have made a big difference). We are deplaned, debugged, and sent to the real OC, which is near woop-woop.

October
29
Saturday

**I've won an
all-expenses
holiday, courtesy of...**

Wake up in strange hotel; it's not a dream and I'm still in woop-woop near LA. Install Twitter client (FREE from the App Store) so that I could check on progress of the Qantas grounding. Pretty cute. Use the browser to check mail in shopping malls. Do another live phone cross from my room, but switch to the landline when it becomes obvious that the iPhone audio isn't going to cut it. Thinks: how come all my reporter mates can get this phone to work, and I can't? Don't have an answer. Maybe I'm more sensitive to audio quality

than the average bear, or maybe it really is a problem with the AT&T network in 3G.

At the shopping mall, shoot footage of a guy selling steak knives, because I can. Audio from internal mic is surprisingly good. I don't buy the knives even though it's an incredible deal.

Have many burbly conversations with people calling back and forth via local and international circuits. Definitely the iPhone, because the trusty Treo 650 sounds great. Plan a series of interviews around LA's great tech shops (think Fry's, Microcenter, Sam Ash, Costco). Make it as far as Guitar Center where I get good interview footage, and buy an iRig guitar interface which we'll discuss another day. About to go to Fry's when word comes that Qantas might be flying again. High tail back to LAX and get a lucky seat on the first plane to head back to Sydney. The adventure... ends?

Epilogue: back in Oz

I got so engrossed with the real job of video that testing Siri (the voice activated per-

October

30

Sunday

I can get our cleaners to do that and they only speak Korean. For more complex stuff, Siri isn't there yet. She's spectacularly useless if you lose the network, aren't in the US, or have a vocabulary that extends beyond a grunt. Suffice to say that I don't need help from an assistant that understands (and correctly spells) when I say "Stockhausen", and can pick up "Stravinsky" but not "Igor". She can't tell the difference between "add" and "and". Siri knows where you are when she wants to tell you off ("you can't do that at 133 Victoria Avenue") but try to get an answer to "Where am I". Bah.

So what do I REALLY think?

The iPhone is a very compelling device. It's let me down several times and in so many ways it's a backward step from the

sonal assistant) didn't even get on the radar until we were both back in Oz. Here's the skinny: She's fine if you just want to set an alarm, but

much loved Palm platform. It's also let me catch footage that I would otherwise have missed, has done some unfussy recordings when people thought I was on the phone (HA! Gotcha). You'll eventually get to meet the people I interviewed with it. It's still on my hip most days. It tweets, eBays, Shazams, Skypes, checks stocks and dices vegetables. Under many conditions it takes surprisingly good photos, and everyone tells me there's a 99 cent app which fixes the camera operability challenges. The phone always displays video as up, but the pix might be inverted in the file. There's ALWAYS a 99 cent app that does what you want, almost, and one day I expect to find an audio recorder that I really like. It needs a good case which doesn't flare the flash, and fewer apps which unexpectedly flatten the battery.

But will it replace a dedicated HD Cam as the reporting tool of choice? Hmm. You'll have to excuse me while we shoot the next scene of CXtra Blair Ghost Paranormal in wide screen iPhone spookarama.. Be good and you'll get to see the rushes.



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Wireless Countdown Underway

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Australian Commercial & Entertainment Technologies Association

As the switch over from analogue to digital TV broadcast gathers pace around the country the Minister for Broadband, Communications and the Digital Economy (DBCDE), Senator Stephen Conroy and the Australian Communications and Media Authority (ACMA) have begun to announce plans for the spectrum auction which will take place next year.

The result is that Low Interference Potential Devices Class Licence (LIPD), including radio microphones will have their accessed to radio spectrum reduced by a significant 58% from 520 - 820MHz to 520 - 694MHz. The likely result will be the forced redundancy of thousands of wireless audio products prior to the start of 2015.

The digital dividend has been described as a windfall for the Government as they are, in lay terms at least, simply selling the rights to use the air around us. But it is a large windfall with income generated from the spectrum auction being valued by various commentators at between \$900 million to more than \$4 billion. While this might be a windfall for some, there is a significant cost to the community as wireless audio products such as radio microphones are made redundant in their tens of thousands from late 2014 as a result of these changes.

At the beginning of this process, way back in 2006, the Government and its authorities approached the issue of wireless audio in a way akin to 'terra nullius'- that

there was nothing much in the way to impede the digital dividend, save for the re-location of a few TV stations. That, and about 150,000 wireless audio devices that enable¹:

▶ **an estimated \$31 billion worth of economic activity**

▶ **the employment of over 140,000 Australians**

▶ **broadcasters to provide us with content for our radio, TV and online consumption**

▶ **up to 300,000 live performances annually, more than 60,000 meetings and conventions annually**

▶ **more than 50,000 theatrical performances annually**

▶ **more than 1.6 million churchgoers each week to participate in religious services**

▶ **more than 2 million Australians who are involved in aerobics classes each week**

Terra nullius indeed

The Australian Wireless Audio Group (AWAG) first raised this issue with Government back in 2006. Despite this, and the increasing amounts of evidence of the cultural, social and economic importance of this changeover, there is still no clear plan or final timetable available from Government.

At this stage the best advice we have from the DBCDE and the ACMA is that the new users of the digital dividend spectrum will have access to the auctioned spectrum from January 1st, 2015.

That seems a long time away but given the scale of the changes that need to be adopted between now and then, we are in fact approaching our 'minutes to midnight' moment.

For the past few years AWAG, working with Australian Commercial and Entertainment Technologies Association (ACETA) and the Australian Music Association (AMA), have argued that the industry needs at least two years, preferably three, to undertake the transition.

Despite regular dialogue with Government and the ACMA we are not yet convinced they fully understand all the consequences of the changes they are about to implement.

So what is it that needs to happen before January 1st, 2015?

- An estimated 120,000 wireless microphones (of a total 150,000+ devices)

¹ Untethering the microphone, Windsor Place Consulting, 2010

which currently operate in the digital dividend spectrum (694-820MHz) need to be decommissioned

- Those 120,000 devices need to be replaced with products that can operate legally in the remaining 520MHz - 694MHz spectrum.
- The Government needs to determine and advise the industry of the dates on which:
 - * wireless audio devices with a range of 695- 820MHz may continue to be imported, and
 - * wireless audio devices with a range of 695- 820MHz may continue to be sold to consumers
- The Government, with the ACMA, still needs to determine where within the remaining spectrum (520-694MHz) the primary spectrum users, the TV broadcasters, will operate. Only then can wireless audio users determine their use in and around the local TV broadcasters.
- Local distributors of wireless audio products need to advise their suppliers of the potential for a surge in demand and arrange appropriate supply lines
- Tens of thousands of wireless audio users need to be advised of the changes. Readers of CX will largely be educated about the issue but we need to communicate to a diverse range of users including:
 - * the fitness, tourism, and the meetings and conventions industry
 - * schools, churches, community arts groups, individual musicians also need to be found and educated about the change
 - * other major sectors including education, broadcast and news gathering also need to be appraised on the changes
- Reverse logistics needs to be planned to remove the 120,000 decommissioned units from the market
- Testing on the proposed use of the mid-band gap needs to be undertaken to ensure its viability (this needs to be done in conjunction with the ACMA and the new occupiers of the digital dividend once the spectrum auction is completed in 2012)
- An education program needs to be developed, ready for implementation from the second half of 2012. This

process needs to include the:

- * Development of appropriate messaging
 - * Creation of materials flyers, logo, website, point of sale materials
 - * The development of a media plan
 - * Creation of social media networks
 - * The creation of an exchange- old for new - process
 - Retailers and their staff need to be trained regarding the changes as do other groups such as AV integrators and audio specialists
- Then of course there is the question of who bears the cost?

The Government with its auction windfall is yet to broach the subject of transition cost with industry and users. Transition though won't be cheap and AWAG estimates suggest the costs of replacing the 120,000 or so units made redundant by the changing licence conditions could run to as much as \$220 million. Additional expenditure will be required to complete the transition. This includes the cost of communicating the issue with current users through to the appropriate disposal of the decommissioned product.

What is clear is that all current users, from major production companies or venues with their inventories of more than hundreds of radio microphones through to schools and churches with just 4 or 5 handsets, will all be directly impacted by these changes. Major industries too, such as the fitness, meetings and conventions, entertainment, broadcast and tourism industries also stand to be adversely affected by the change.

The Government and its authorities need to understand that the digital dividend and the sell-off of a significant part of the radio spectrum to new users is not without consequences and that it is fast approaching the time that those consequences must be dealt with.

The Government and the ACMA need to deal with the industries and users affected by these changes and engage them in a planned process of transition while there remains time to achieve one. As we approach 2012 the clock is ticking.

This is the challenge that AWAG is now addressing. For more information, go to www.aceta.org.au

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Camera Time!

**AT
CX WE FOUND
SOME
EXPERTS**

and put them in a room to debate what's new, what's not, and what matters as a professional shooter. Welcome Joshua Marks, Ash Scott and Chris McHardy. John Maizels is the interrogator:

JOHN: Firstly can we find out how did each of you get your start in the biz and become a camera operator?

ASH: I've been freelance, worked film and TV in NZ. I got a bit of head start – my father was a cammo so I was loading film since I was 12 years old.

CHRIS: I started with rugby league shooting, and learned to cover the sport with one camera. Then went on to films, and the multi-cam environment.

JOSHUA: I've always contracted or worked for myself – I did weddings, private functions and now with Rodney Marks, my father, we work on conferences.

JOHN: Rodney Marks is usually in disguise, as a bogus expert. He's brilliant, pretends to be a judge or a professor. Great mind!

JOSHUA: I shoot delegates in the morning of the conference, asking people from the audience what they think about the topic and the expert, then edit while the sessions are on. We show (the footage) at the end. Rodney is revealed as a corporate comedian, then we have the video show-and-tell.

JOHN: To do all these different jobs, do you use different cameras?

ASH: In broadcast we use Sony, big lens, tripods. Portables like the Sony HDC 1500 HD camera, hand-held or built up with a 71 lens.

CHRIS: If it's single camera, make sure you have the correct equipment. Clients want fast view, so we use data-based cameras like the Sony EX-3 for fast turnaround. Often they want snippets from the day put into the closing. Invest in the EX3 and remove the stock lens or get a camera where you can change the lens.

JOHN: What is it that you look for in a camera, Joshua?

JOSHUA: Fast from shooting to the timeline. I was on PCs until I saw this JVC GY-HM700 camera, made specifically for Final Cut, so I got two Mac Book Pros. The JVC uses standard SD cards, and the earpiece [on the camera handle] lets you hear everything that's going on – especially when people



don't think you're rolling, when the camera is on your shoulder. The other thing is that it has 3 seconds pre-record so you can grab a comment quickly – that's great for documentaries.

CHRIS: Difficult question; different job different camera. Digi-Beta, EX3, big HD Cam. As an owner-operator I started with a humble Sony Z1. Now (you need to) look at the size of the chip – the larger they are, the better in low light, the softer the depth of field, for nice beautiful filmic images.

JOHN: Why is the client interested in the type of camera?

CHRIS: It has gone this way: the client says they want to shoot on a Red. They've seen the images the camera produces, so they want that. I've introduced some of my clients to a P2 camera, but the problem is knowing how to ingest the data from the (P2) card.

JOSHUA: With JVC the output from the SD card is just a .mov file, so you can drop it into the timeline.

CHRIS: I wouldn't go the JVC because of the one third inch chip.

ASH: What dictates the client format is what they have to match – if they have been shooting on a RED camera or an EX3. We are phasing out the DigiBeta, which was the industry standard for broadcast. Now we've migrated to XD-Cam disc format, that decided the camera – Ikegami or Panasonic don't make an XDcam recorder. So we end up with a Sony 800, 700 series.

JOHN: There are manufacturers in the market from whom we don't hear much – Hitachi, Ikegami – can a really good camera still be disadvantaged by lack of a feature that you guys believe is "must have", like disc or P2 output?

ASH: P2 is a superior format; 100mb a second, XD cam is 50. XDcam people want the disc: take it out, put it on the shelf. Ikegami cameras are beautiful, but you don't see them here. It's between Sony, JVC and Panasonic.

CHRIS: The Panasonic (P2 card) is a better format: double the data rate, superior com-

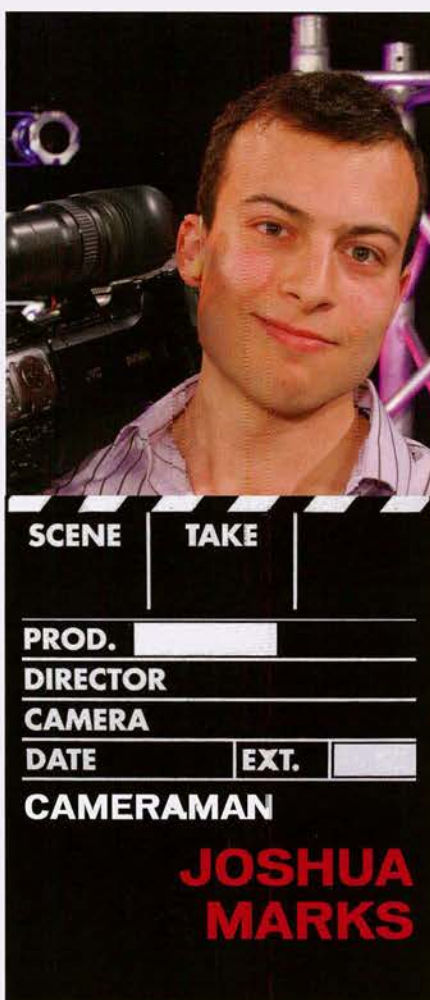


► Hitachi SK3020P

pression, and in the past broadcasters said it had to be 100mb a second. P2 has a great foothold in the American market. Sony have a better foothold in the Australian market, and now people go with the XDCam. The EX3 is considered "broadcast" – even at 35mb/sec! Midrange clients now go for EX3. It's hard to get a system where **everything** is fantastic – Sony chips are fantastic – but you are compressing the image. Panasonic chips go out to 100 Mb at the back, but their entry level 502 camera only has a standard def block at the front with pixel shifting, so it wasn't a true HD image. Red produces a 4k image, but that is too much data for computers to deal with easily.

JOHN: OK, more on data cards and the move from tape?

CHRIS: A 32GB SD card gives you 2 hours – P2 gives you 35 minutes (at HD). The manufacturers know they have to reduce the cost of the media. Panasonic (P2) and Sony (XD-CAM EX) now produce economy cards at half the price of the original media, which angered people who had invested in the original cards. Of course, the expensive cards have lifetime guarantees. But the economy cards look the same, and economy cards are rated at one use, one format per day, for 5 years.



JOHN: which might still be longer than the life of the camera!

ASH: Tapes are fantastic. Hard drives worry me. In 50 years there'll be a hole in our history (due to drives which are no longer readable). Go back and learn from history when we lost so much program on destroyed tapes. People are deleting rushes and not keeping what could have been important!

CHRIS: XD-CAM is MP4 file, you have to put it through a proprietary software conversion. P2 separates audio and video into folders. The software recognizes the root folder, if you take it out of the structure the software will not understand.

JOHN: How long does it take you to get the data out of the camera's digital storage?

CHRIS: XD-Cam discs give you instant access. Say you shoot Digibeta then you just give them the tape. With disc: what if the post house doesn't have a reader?

ASH: We are the custodians of the future. Tape is a one-off use. But these discs – lose data, what do you keep?

JOSHUA: I never delete anything, ever. I replace each hard drive within warranty.

You never know – people came back, someone dies, make a tribute video.

CHRIS: It's a good setup to copy everything, every year.

JOSHUA: Drives are getting cheaper, and faster.

JOHN: And we all know how, in the past, tapes got lost or erased or used for landfill. So Joshua, you're being the custodian of the data.

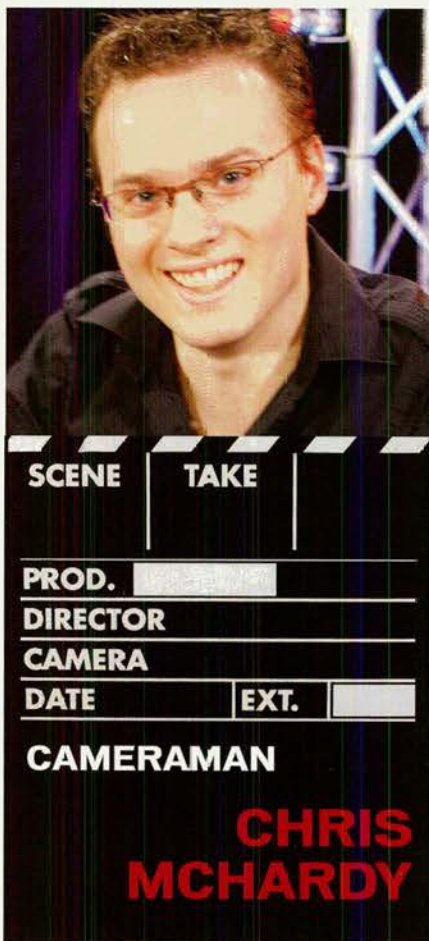
CHRIS: But if you keep data, how do you charge the client for the storage?

JOSHUA: You can't, but I keep the recordings because you never know what's going to happen!

JOHN: So these days you're actually the camera department – which means you're personally buying hardware to support your role as a camera operator.

JOSHUA: The communication is great between me and the camera department. I never have arguments about what kind of gear to buy!

CHRIS: Now you have to manage the camera department, not just rock up as the camera operator.



ASH: I provide equipment, XD-Cam; hired in Red camera, body from someone and lens hired from someone else. Cameras are essentially the same (operationally).

CHRIS: The trick is to be prepared – and check the settings. Get the sound right, secure the tripod. Take responsibility even if no one has told you to take responsibility.

JOHN: Ever had a total horror story?

CHRIS: First DSR-570 DV cam for interview, no colour LCD panel, just a B&W viewfinder. I wasn't prepared enough – pulled up an image, thrown into a moment to do a quick interview, and not enough light. It was a news piece and it was rejected. They said the audio was wrong – but I knew I had one channel top m c, and one channel presenter mic. Had a scary moment on a feature film: shot a cake getting demolished, so the food prop had already gone. Small P2 card at the time, and I deleted just a clip but the camera showed me all the scenes were deleted. Delete all, not one clip! When I reset the card it was OK. But for a while my heart stopped.

ASH: I shot something in progressive once that shouldn't have been. There were 7 other cameras, someone carded the XD camera and didn't change the format. Shot and drop. Sporting event, all independent, 50i, 50i, 25p, 50i, 50i learnt from that experience!!



◀ JVC GYHM 700



► Sony EX3

JOHN: The bane of the director and the cammo's life is lighting. Never in the right place, never at the right levels.

ASH: Stage and TV lighting are not comparable. Stage lighting is too 'spotty', where TV lighting is aimed at overall coverage. At major awards shows, get a TV person for lighting – (set the) mood of room, (for a) wide shot lift the level.

JOHN: Tricks?

ASH: Creep the light level up slowly, even if the event organizers want it low.

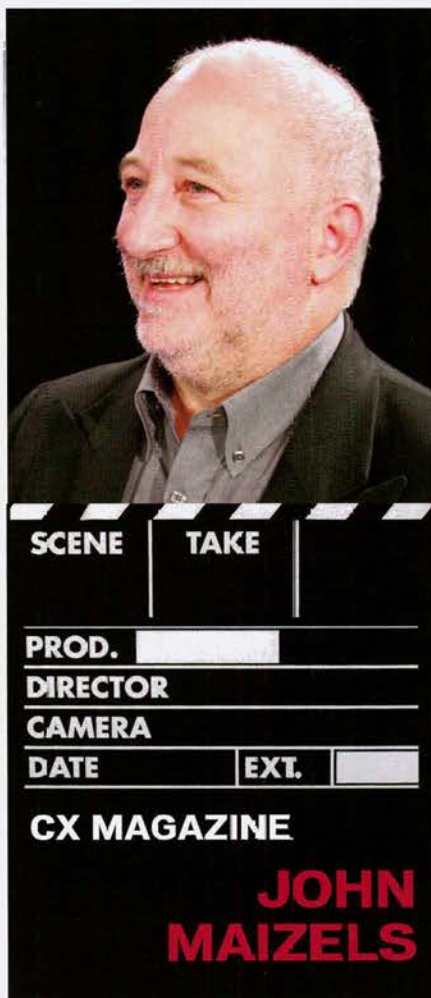
CHRIS: Get a better camera, because no matter what you ask for, the lighting isn't going to be improved. There will always be tables and chairs in place, and no cherry picker to change things. So get a faster camera, and gain up.

JOHN: Joshua, how do you handle interviews when you're shooting at a dinner?

JOSHUA: People love atmosphere, I take Redheads – but I don't have a Tally light so they think we are not on (recording).

JOHN: People react to the equipment?

JOSHUA: Yes they stare at you and don't



know what they are saying. Put the camera on, biggest mistake is turning on too late or off too soon. Just roll....

CHRIS: Live, you have a perfectly lit stage and the presenter steps off the stage and into no light.

JOHN: Of course, the eye has a very broad contrast range, and while film is OK, video is much less able to cope. Can today's video cameras handle changes between well lit and less lit zones?

ASH: Someone at a CCU needs to do it.

JOHN: What about tips for being a camera operator in a live event shoot?

CHRIS: Just be on your game. For live shooting, just panning across the stage is dull. Stamina is required, never lock your tripod, be ready! Balance the tripod. First time behind a pedestal camera, I had to hold the camera level. (Then) I found someone to show me how. On a small tripod, always lock tilt, never the pan. When you're using a big box lens, lock everything.

ASH: A good tripod is important – don't skimp on the price.

JOSHUA: I've got a Miller D20 on wheels,

not for dolly but so I can move and re-frame quickly.

CHRIS: I had a DS-10 Miller, but now I love tension control. Change the amount of tension on the head. The Miller knob locks off. The Compass range from Miller gives proper tension, and the Arrow series is ever better. I've used Sachtler – but they are three times the price.

ASH: That's all I've ever had, had one 12 years. Miller, Vinten, Sachtler – all the choice comes down to personal preference.

JOSHUA: I can put my tripod as a backpack, using the (Miller) Solo legs. You could put it under water – except for the camera! The Solo is really handy for documentaries.

JOHN: What do you look for in a tripod?

ASH: Make it suit the camera – find the one that suits the weight of the camera. Whip pan to test it – if you grab two legs and it moves, it's not good.

CHRIS: The Miller Compass 20 head on Solo legs is a great combo.

JOHN: What about shooting with DSLR (Digital Single Lens Reflex) and iPhone?



PEOPLE REACT TO THE EQUIPMENT.

They stare at you and don't know what they are saying. Put the camera on, biggest mistake is turning on too late or off too soon.

ASH: Now on the news every night there's phone video. (And) DSLRs have taken the world by storm.

JOSHUA: But the Canon 5D MK2 or 1D just clocks off after 12 minutes. Get over the FAT32 filing system; it has to keep rolling. Must have XLR inputs too.

CHRIS: I'm trying to stay away from DSLR market, but so many people have embraced it. People have work-arounds. Clients love the optics, and that it's small, fast, and priced well. But with a full kit, it will cost you the same as a broadcast camera!

JOHN: Can you get a good story with "just any camera"?

ASH: If you have the skills you should be able to tell the story with anything.

JOSHUA: I have carried a camera everywhere for six years. I have a small camera (Canon S90) on my belt always and I can take a shot in ten seconds.

CHRIS: On the other hand I was booked to do a feature film, tight deadline and budget. Then the investors decided it had to be shot on a Red camera and now the movie is ten months late and over-budget. They have



◀ Sony HDC 1500



▶ Ikegami

lost footage. But they are “the money”, and they decided.

JOHN: Can people tell format difference?

ASH: I could pick a DV-Cam on TV on-air, from the noise, light performance, and resolution. DSLR's have a certain look. First time I shot on Red at 4k, it took a week to ingest. I learned that you can't leave it running, you have to stop and start (to conserve file space).

JOHN: What about framing and aspect ratios? In what is now a 16x9 world, are people still looking for 4x3-safe pictures?

ASH: Lately I turn off my viewfinder marker; it frees you up. Let's use the big picture.

CHRIS: Depends what you feel is the best composition.

JOHN: Are there rules that should not be broken?

ASH: I just came off the golf – if I framed 16x9 and the ball ended up in the hole off-camera, that would be a problem. At worst, shoot 14x9. Compromise with the director.

JOSHUA: I don't like to centre shots at all. I like a lot of room. My assistant writes the questions, and the picture needs a lot of talking room.

TAPES ARE FANTASTIC

Hard drives worry me.

In 50 years there'll be a hole in our history (due to disks which are no longer readable). People are deleting rushes and not keeping what could have been important!

C-IRIS: Get a nicely balanced frame, tell the correct story! It needs to lock correct wherever it is delivered. Maybe someone has set the colours wrong, as well as the aspect ratio.

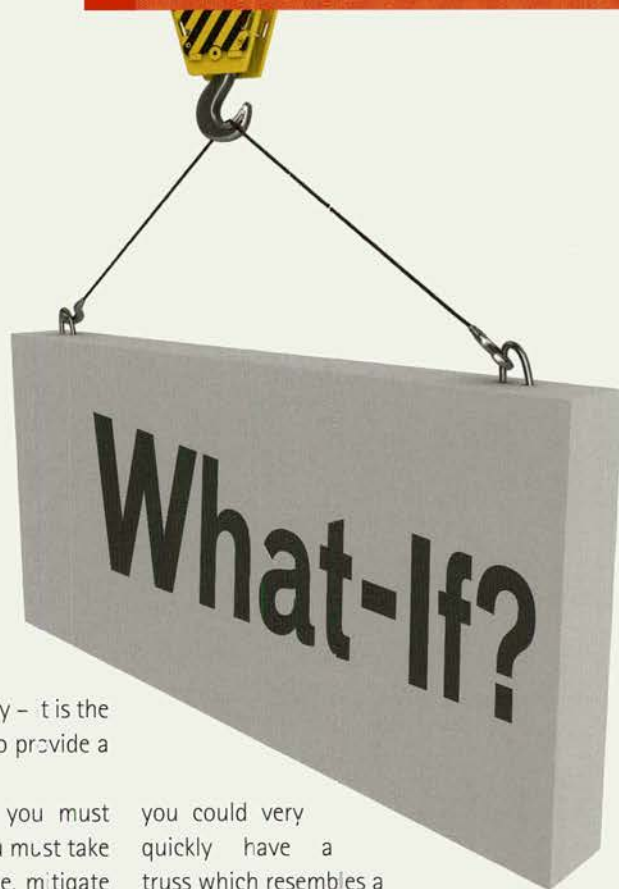
JOHN: There you have it from three working cammos – it's partly about the equipment and a lot about working your craft.

◀ Red



What If I'm lifting a truss with 4 chain hoists?

By Andrew Mathieson



The recent spate of rigging accidents in the news has spawned numerous discussions with clients regarding the risks involved in moving and hanging loads overhead, how to minimise these risks, and who is ultimately responsible for the safe operation of a rigging system.

Let's look at a hypothetical case where we have a convention centre style venue that has several 6m x 9m truss frames built from 400mm alloy box truss, each lifted by 4 x 1t chain hoists and rated to carry 2,000kg.

These trusses are going to be raised and lowered during the hectic and noisy bump-in and bump-out, they will be operated by fairly inexperienced crews, and there is the distinct possibility that one part of the truss will be heavily loaded and another part of the truss will be unloaded or very lightly loaded.

Clearly, in this hypothetical example, there are numerous opportunities for things to go wrong, with consequences ranging from inconvenient to catastrophic.

Who is responsible for making sure that it is safe to operate and is operated safely?

As we all know, the Workplace Health and Safety Regulations are being harmonised and will (allegedly) take effect in early 2012, but regardless of any changes, one

fundamental "rule" will still apply – it is the responsibility of the employer to provide a Safe Workplace.

To make a safe workplace, you must know what the risks are and you must take all reasonable steps to eliminate, mitigate or minimise these risks.

If you are unable to make a thorough assessment of the risks, then you have an obligation to engage someone who is qualified to make a risk assessment and provide a risk minimisation strategy. You just cannot get away with saying "I didn't know" any more – if you don't know you have an obligation to find out.

Looking at our example, what could go wrong and how could you eliminate or minimise the risk?

When raising or lowering a loaded truss, a motor could stop. Whether this is caused by the motor overloading and stalling or it just simply deciding to stop is irrelevant, but what happens next is very relevant.

If you have chosen simple chain hoists with no form of monitoring, then you'll only know the motor has stopped if you knew what to look for and were paying close attention – remember, in our hypothetical case, we have fairly inexperienced operators working in a hectic noisy environment with a lot of distractions.

If the failed motor goes unnoticed, then

you could very quickly have a truss which resembles a pretzel – we've seen the videos of recent truss collapses and know what can happen next.

So what could have been done to prevent this happening?

A simple risk mitigation strategy would be to have the hoists monitored and controlled by a system that stops all the hoists in a group when one hoist in the group decides not to move.

A system of load cells reporting to a controller that initiates a group stop when a motor overloads (or under-loads) is another workable risk mitigation strategy.

So, regardless of what German, American, Australian or Outer Mongolian chain hoist standard was asked for by your expert advisor or recommended by your friendly chain hoist vendor, the responsibility to inform yourself of the risks involved and to minimise or eliminate these risks is yours and yours alone, and if you choose to ignore the risks then when an accident happens, you should have a good suit available and practice answering to "the defendant".

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





100V

LINE SYSTEMS

part 7



By Paul Matthews

Bread and Butter - The Customer is always right. But are they?

There's a lot more to being a PA contractor than just using impedance meters and ladders. The most difficult thing you will ever have to learn to do is to **read the mind** of your customers. In commercial contracting *your customer knows NOTHING about PA*. They make their decisions based on feelings – and the prize will always go to the guy who can give the customer the warmest and fuzziest "yes I like this" feeling inside.

Business wise, every time you answer the phone or turn up to a venue for the first time – you need to very quickly work out what your customer wants you to do. This will depend on their available budget and how important the PA system is to their daily business work flow. Customers likewise also fall into categories – we'll look over those later.

PA install jobs can be either "Repair", "Renovate", "Rebuild" or "Replace".

In a **"repair"** you have an existing PA system which has already been designed and installed. You find faults and restore the system back to more or less to the way it worked when it was first commissioned. Repairs are only likely to work when the original system met the customers' needs before it broke. For a "repair", you're relying

on the intelligence of the original designer to keep your customer happy.

Will a repair keep smiles on faces? That depends on your ability to very quickly size up your customer's opinion of the system you're trying to fix! It can also have a lot to do with the age of the existing system because naturally the older it is, the less likely it will do all the things current staff might want it to do. Comments like "Oh it's never worked properly" or "We've always had problems with that", are clues that the original designer and system were both lemons – and any time spent by you repairing it is going to waste the customers' money. It will also make you look like a bad tradie because no matter what you do – your customer still won't be happy.

In cases where the system is very old but

still more or less seems to work the way the staff need it to, a **"renovation"** is in order. This is where you preserve the original design – but replace physical components. You go over the whole system step by step, test the condition of each component and assess it's likelihood of being able to survive in service for another 20 years or so. You then replace the "weakest links". The important thing to remember is that even if you end up replacing the whole lot – you still preserve the original design.

Will this keep 'em jolly? That depends on whether you read the customer correctly at the start. If neither you nor them can understand the existing design and how it works then chances are that a renovation will not be a good idea. Next step then.

As a PA contractor the most common work you will end up doing will be a **"Rebuild"**. This is where you quickly sum up that the customer does not like the original design – and never did – and neither do you. It could be that it's just a victim of architect and builder incompetence, or it may have crucial components within it's design which are computer based, use proprietary software and thus have become obsolete very quickly. Whatever the reason – it's a lemon. But the system's not that old – and the "nuts and bolts" gear (speakers, amps,

...YOU NEED TO
very quickly work out
what your customer
wants you to do...

racks, cabling etc) is still in good condition.

In a rebuild you deconstruct the existing system back to its basic components, then decide which ones to re use and which ones to toss. Next you create a completely new design based on your best opinion of what the customer actually needs. You specify new components where needed, then rebuild the system to your own design – not the one you found when you first walked in. You then invariably have to be prepared to offer a full warranty on your completed rebuild.

One advantage of a rebuild is that it gives your customer a "new" system without having to max the overdraft to pay for it. Your suppliers will hate you ('coz you haven't sold lots of their gear) but your accountant will love you ('coz of all those long hours charged at full rates). A rebuild is like a dragnet which hopefully catches every problem that existed in the original system. The key to getting a good rebuild is very thorough testing and commissioning.

The best advantage of a rebuild is that it hands control of both design and install to you. If you do your job right then you've kept your customer happy for a fraction of the cost of your competitors' quote. The boss is bound to let all his management friends in other venues know who came along, gave him this great feeling inside and then "made her problems go away".

Finally there's "Replace". Now this is what your competitors' sales staff try to do whenever they walk on to a new site. Completely ignore the past, take a scorched earth policy and try to sell the customer a brand new system. Of course this is also what you do when you install a PA in a new building or where previously there was none at all.

Competition is fierce. In cases where the PA is not "crucial to workflow", you risk wasting all your time and effort trying to clinch the sale only to find the customer long ago decided they do not have anywhere near enough money to fund your grand plans. They'll either get someone else to patch it up, or decide not to do it at all and just persevere with the crappy system they've already got. Instead they spend what little spare cash they had this financial year on something else easier and more important to their core business – that new phone system, rubbish compactor or neon sign.

That's not to say that "replace" isn't ever a viable option. It certainly is – but generally only when the original system is non-existent or just so old that it has no useful parts left that can be reused. Or it may be completely unusable – as might happen if the venue has undergone big building changes or growth. In both these cases the customer already knows they're in for a financial slug and are ready with cash on tap. But again – you'll be up against multiple contractors, tenders and quotes to win the job. Only the contractor which gives the customer that warmest feeling inside – is going to win.

Next time – Customers!

**THE KEY
TO GETTING**
a good
rebuild is very
thorough
testing and
commissioning

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run the risk of driving under the influence, they could happily fill themselves full of any mind-altering substances that they could lay their hands on.

So, one night they were all away working at a pub in the outer suburbs. The bus was unloaded, and while Monty and the band were inside doing the gig, Sam was waiting in the bus doing his best guard dog imitation. Not a particularly good imitation, since if someone did manage to break into the bus, all Sam could hope to do was trip them up and then lie on them!

Having the attention span of an autistic newt he got tired of being a guard dog after a few minutes, and started snuffling around the bus to see what there might be to eat. Rummaging through bags of old socks and used undies, his questing nose suddenly discovered a tasty, organic smelling chunk wrapped up in aluminium foil jammed behind one of the seats.

He had discovered the band's stash, a big, expensive block of hash! (One of the hidden costs of touring? Ed) Obviously

the stuff had the same appeal to dimwitted dogs as it did to dimwitted humans. Like a truffle hound suddenly set free, Sam tore the foil off the stash and ripped into it with gusto, chomping it up in his slobbering mouth until it was all gone.

Then, as the stuff began to take hold of him, he started to feel ever so sleeeeeepy, so he slooooooowly curled up in the aisle of the bus to get in touch with his inner self and discover canine Utopia. Then he passed out!

After the gig the band came back to the truck, all vibed up and ready for a Post Gig Rap with the help of their Far North Queensland Pink Eye Special. But of course it was nowhere to be seen. Panic stricken they feverishly rummaged through the whole of the bus, lifting the seats up, moving bags, accusing each other, but it couldn't be found anywhere.

Just as some serious biffa was about to start, someone mentioned that young Sammy, who would normally be running up and down like a headless chook, hadn't

moved for the last ten minutes. In fact, everyone had been forced to step over the comatose lump on their way into the bus!

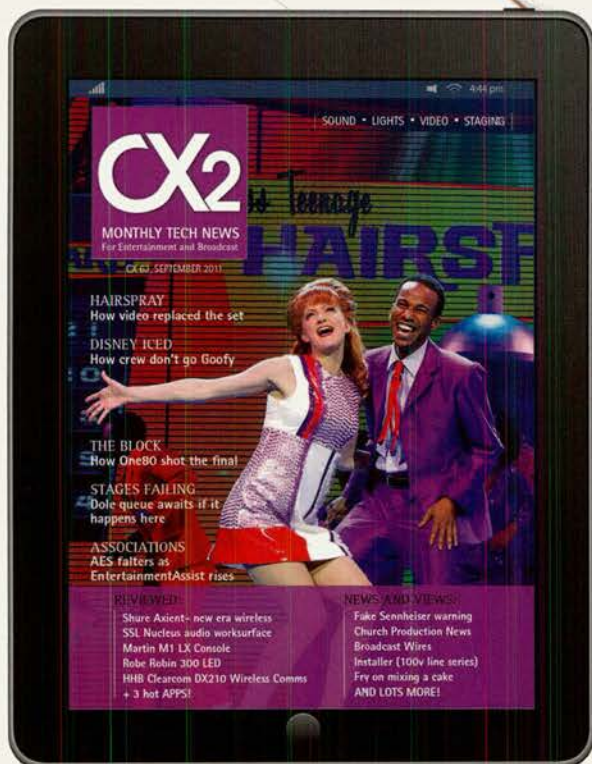
One of them krelt down beside Sam and carefully sniffed his breath. A thin trickle of brown saliva was dribbling from the poor stoned dog's mouth, and his teeth were covered in the remains of the silver foil.

The culprit had been discovered!

Then the shit hit the fan, so to speak! Or would have done, if the dog hadn't eaten it! But it was too late. Sam stayed passed out for three days, occasionally rising to have the odd leak, look around with stoned eyes, and pass out again!

Even when he woke up a few days later, he staggered around like a zombie for a week or so, and although he was never particularly bright to begin with, he was even less bright from then on.

And, desperate as the band was, none of them really felt like smoking the stuff when it eventually reappeared at Sam's rear end!

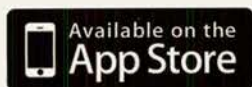


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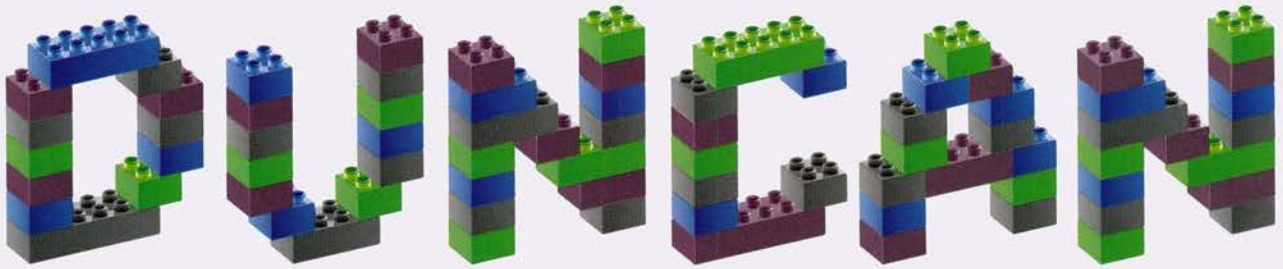
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FRY



Let's smoke the dog

A cautionary tale

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I've had a busy few weeks, gigwise, and have been struggling with the problem of how to get a decent sound out of a small system in a highly reverberant space, ie. a 'turn of the previous century' Town Hall.

And also struggling to keep it at a comfortable volume for an ageing audience, for whom anything louder than conversation level is TOO LOUD!

But that's a fairly intensive subject for a story, and since I have one more of these gigs to go, I thought it might be better writing about them in the New Year, once they're all over.

One of these gigs involved a Trad Jazz band, with the obligatory banjo player.

Ah, there's nothing I like better than the sound of a banjo, unless of course it's the sound of a chicken caught in a vacuum cleaner.

Which brings me to the least-used sentence in the English language – "Isn't that the banjo player's Porsche?"

It's been pointed out to me, by several people who lived through the era, that in the recent article starring Monty and his dimmer racks, I neglected to relate a major incident in Monty's lighting career. So, since it's the festive season coming up, here's the tail end (pun intended!) of the 'Monty and his dog' story. Just don't try this at home, kids!

To briefly recap for anyone who missed it, Monty was a lighting guy that we

shared a factory with in the early days. In order to carry his lighting rig around from gig to gig, he had bought himself an old orange schoolbus at an auction. He then modified it by removing the back window, cutting a big hole out of the back wall, and replacing it with a roller door for relatively easy access to load the equipment in and out.

It was like a low budget version of those enormous tour buses that you see

someone to fix the multitude of engine/transmission/ brake problems that arose from not having the thing checked! I don't think a day went by when the thing wasn't jacked up, with Monty crawling around underneath going 'Shit...shit!' Much the same as working on his dimmer racks!

But I digress. To guard the bus while it was unattended at the gigs, he had bought himself a dog, a Labrador called Sam who just grew and grew into a giant lard-arse

MONTY WAS STRAIGHT AS A DIE, didn't smoke and rarely drank anything stronger than Coca Cola, especially as he had to remain sober to drive the bus. However the same couldn't be said of the bands he worked with.....

on US tours, all chrome, tinted glass and purring diesels. Monty's was just the same, minus of course the chrome, tinted glass and purring diesel!

In this way he, the band and the crew could travel to the gigs in relative luxury, plus transport the complete PA and lighting production in the one vehicle, theoretically minimising the travel expenses. That was the theory; in hindsight the money spent modifying might have been better spent (a) getting a full mechanical check on the bus before buying it, and (b) paying

whose skin would shimmer like ripples on a pond whenever he moved, so we nicknamed him 'Sammy the Walrus Dog'.

Monty was as straight as a die, didn't smoke and rarely drank anything stronger than Coca Cola, especially as he had to remain sober to drive the bus. However, the same couldn't be said for the bands he worked with. Since they didn't have to

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