

# CX

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## MONTHLY TECH NEWS

FOR ENTERTAINMENT AND BROADCAST

CX61, JULY 2011 · \$5.50

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talks about his production crew

### TINA ARENA AND KYLIE:

Live reports!

### CHURCH TV:

a simple rig detailed

### MR LIGHTS:

How the smallest lighting company came to dominate the world!



ISSN 1320-5595



**REVIEWS:** ROLAND M-480 V-MIXER. COEMAR REFLECTION LEDKO. SOUNDCRAFT SI COMPACT. CHRISTIE MICROTILES DIGITAL CANVAS. ETC FIRE & ICE. EV DX46 SPEAKER PROCESSOR.

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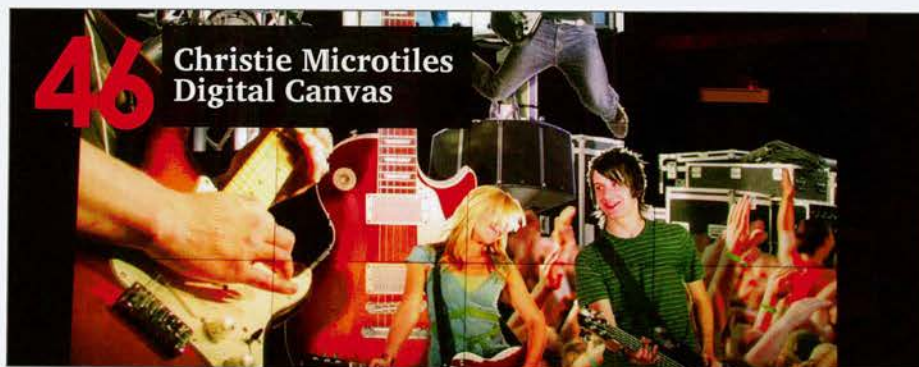
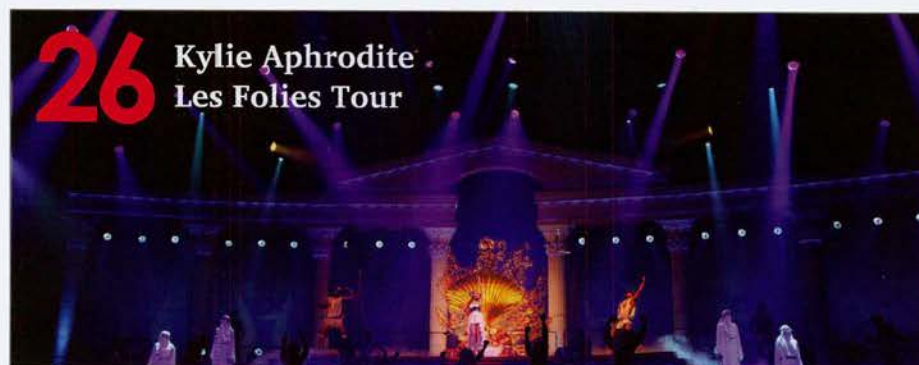
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## CAGEY LD

Usually CX turf is pleasant, but the Emirates Lounge at Auckland turned decidedly chilly at presstime when I encountered a successful show lighting designer. Admittedly he was keen to get home, having been marooned by Qantas for several days. But the 'I can't tell you what I am doing' business was over-the-top. Plenty of people talk to CX off the record, and we don't blow that. It was a shame. I like his work.

## VOLCANO

The Chile volcanic ash event was a show-stopper at airports almost everywhere we go - and what a difference between airlines. Qantas just shut down, Air NZ flew lower, and CX spent a spare four hours delayed on the Tasman route. Others were way less lucky - but it shows what can come from left field. The airport vibe for Qantas was like when you cancel a tour and don't answer the refund line. It looked terrible.

## SOUTH ISLE

The general mood in NZ is so despondent for the Canterbury folk from Christchurch. Most people I met thought that the city would need to decentralize or move after the third earthquake or 'aftershock' happened on my trip. All this after the coalmine disaster on the other side of the island. A telling tale - the economic hit on Japan's GDP is less, by percentage, than that on NZ. Spare a thought for our brothers and sisters over the ditch.

## TRADE SHOW CRUNCH TIME

Make your choice: it appears to us that production firms and venues will go to ENTECH, TV and video dudes to SMPTE (as always) and installers will go to Integrate. Now vote with your feet, then settle back and watch the recriminations as exhibitors compare fruit. ENTECH added on an INTECH, SMPTE wisely doubled up with them, and INTEGRATE sold out. Now it's up to 'the industry' to decide on the way forwards.

## ACETA NAMES BOARD

Speaking of 'the industry', it is great to see the industry association representing distributors and manufacturers has been incorporated. The board are:

- \* **Leon Hart** at Amber Technology
- \* **Frank Hinton** at ATT Audio Controls
- \* **Paul Mulholland** at Jands
- \* **Stephen Devine** at Meyer Sound Australia
- \* **Tony Hambling** at Murray Tregonning and Associates
- \* **Shane Bailey** at National Audio Systems
- \* **Frank Andrewartha** at Quest Engineering
- \* **Marc Allen** at Roland Corporation Australia
- \* **Robert Sloss** at Syntec International

The first Board meeting was held immediately after the AGM and the following office bearers were appointed: President: **Frank Hinton**, Treasurer: **Steve Devine** and Secretary: **Frank Andrewartha**.

Better still the association is being managed by The Morton Group, aka **Ian Harvey** and **Sara Hood** who have skillfully managed the Australian Music Association for many years. They have resigned from the AMA to drive ACETA, which is a massive vote of confidence.

Frank Hinton deserves praise for relentlessly making this all happen.

## WIRELESS BOOM COMES WITH TV SHUTDOWN

This may sound strange but the closure of analog TV in 2014 will provide a boost for pro audio sales. Older wireless devices unable to access the yet-to-be announced 'legal' white spaces somewhere in the 520 to 694MHz area will need to be replaced, that will mean up to 160,000 systems at a cost of over \$100m. What is known? SAFE: Frequency agile systems between 520 to 694Mhz. SAFE: Digital systems in the 900MHz space. OBSOLETE: Anything else.

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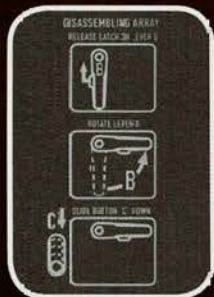
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# CX News

DEVICES, PEOPLE & CONCEPTS

Issue: Vol 3, CX61 July 2011

## VALE GREG CLARKE

Winter brings bad news

Sound engineer and tour guy Greg Clarke died suddenly in June of a suspected heart attack at age 50. His funeral and wake was at Geoff Trio's lovely Notes Nightclub, almost opposite Sydney's Enmore Theatre on a cold Wednesday. We filled the joint.

Inside, the casket was beautifully lit on stage. Industry people filed up and paid respects, as did Greg's wife Sarah and sister Kendall. It was the proverbial full house - musicians, managers, crew and associates. Sarah and Greg's puppy Chai was front row, and took to the stage looking for his master. "Don't wee", Sarah said. He didn't.

Greg was renowned as a live sound guy. But he had a studio life as well - and once mixed the mashed up theme tune that radio network JJJ still use for the news. He worked the loud acts - Billy Thorpe and Rose Tattoo most prominent. From the latter camp singer Angry Anderson entertained proceedings with anecdotes ranging from German tour busses to whether chick bands had the same membership rites that he enjoyed with the Tatt's. But it was always referenced back to the essential Clarkie, regarded as a member of the band.

Steffan the Hamburg based beer tech, and crew member The Fridge sent their blessings by email.

But this didn't reduce Greg Clarke to just a mere roadie - his was a cerebral existence, and as Sarah tearfully recounted, he was freaking funny. Her dad, by the way, said he never had a son or a brother - but in Greg he had both.

Aiz Lynch said that Greg generally looked like he had been picked up loitering outside a child care centre. He lamented not being able to tweak his chubby cheeks and that the 'Disaster-Caster' guitar project would not be finished.



"If it wasn't supposed to be flashing red, it should have been another colour", he recounted Clarkie saying.

On this note, Greg was known to push those live sound boundaries. "He had an insert on the bass guitar, +20 dB at 20Hz", Chris Clough told me. "You could feel the air move in the room".

"We had to smuggle him into some gigs because he had been banned for blowing up the house PA", Gavin Hansen from The Poor alleged. He spoke on stage surrounded by his fellow band members, a reminder of this clan culture that Angry Anderson laid bare.

But of course it is the family to whom your heart extends at these times. Sister Kendall said that Greg's mum once purchased him a Savage Garden CD as a gift. She then recalled the facial expressions of Greg, who had been expecting a Soundgarden CD. The laughter this provided was well worth the mistake. Greg's dad stood mute on stage alongside his daughter as she spoke.

A floral tribute was conducted, where people filed on stage to lay flowers on the casket. When done, the sound system cranked into life with 'One Of The Boys' by Rose Tattoo. "Turn it UP", yelled someone and it became way loud as the coffin departed the venue.

At lunchtime, the bar opened and the footpath clogged with smokers. Chuggie and his people were outside, with the rest. We raised a glass and lit a smoke for the guy in the black wagon, on his way to rest.

## INTEGRATE CASH OUT

Trade show battle gets ridiculous

The international trade show firm behind the PALM sound and light tradeshow in India, and the Boston Seafood Show (amongst many other trade shows) will purchase the INTEGRATE trade show in Sydney.

With just weeks to go until ENTECH and SMPTE co-show in Sydney at Darling Harbour (starting July 19), followed by INTEGRATE at Moore Park (August 30) across town, the trade show climate is red hot with discontent across exhibiting trade at being asked to go twice in one town. While SMPTE and ENTECH together boast an impressive exhibitor list, the outcome for Staging Connections subsidiary ETF, owners of ENTECH, is not so pretty this time around.

But INTEGRATE, founded by a disenchanting ENTECH employee, can't claim the mantle as most popular event either, since many lighting exhibitors have shunned that show. The magazine group behind INTEGRATE hopes to address this by launching a lighting magazine. This would add yet another title into the Alchemedia group, and create still more tension within marketing budgets pulled taught by so much competition.

The purchase of INTEGRATE by Diversified Exhibitions was hurriedly announced as 'a partnership' after CX made enquires, but is ultimately a majority buyout. Under the terms of sale, Alchemedia Events (the events arm of Alchemedia, publishers of Audio Technology Magazine, AV Magazine, Venue Magazine, Digital Signage Magazine, and the Guerrilla Guide to Recording & Production Magazine)



Continued Page 10 ----->

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sure, cases with 2 or more of the same gear inside the case save money. dual cases typically save about 25-30% in bucks [compared to 2 single case prices] & around 15% in mass: meaning cheaper or slimmer transport



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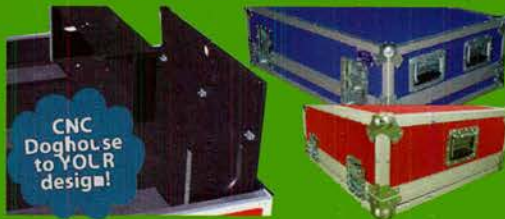
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-----> Intergrate Continued From Page 8

will provide transition assistance to Diversified Exhibitions in exchange for further earn-out and media payments based on future show earnings.

The new deal will see INTEGRATE staged at Darling Harbour in 2012. The conglomerate say that there will be more space for expansion there, which is logical since the INTEGRATE venue at Moore Park is essentially an entertainment venue, isolated from hotels and distant from the city. However INTEGRATE have used the boutique location of Moore Park as a sales pitch - until now, when it suddenly has become obsolete.

Meanwhile ENTECH promoters ETF promise the combined show with SMPTE this July will be the biggest yet, occupying 17,500 square metres at Darling Harbour. By way of comparison, INTEGRATE sits within around 7,000 metres at Moore Park.



## VIVID WARMS INDUSTRY

For a couple of weeks every winter Sydney is transformed into a spectacular canvas of light, music and ideas when the Vivid Sydney Festival takes over the city after dark.

Vivid Sydney colours the city with creativity and inspiration, featuring breathtaking immersive light projections on the iconic Sydney Opera House sails, performances from local and international musicians as part of Vivid LIVE and a free outdoor exhibition of interactive light sculptures.

This year saw the launch of Skyscraper Illuminati; a theatrical transformation of Sydney's Circular Quay with building illuminations coordinated with next generation animated lighting. These giant facades form one large canvas and present a regular twenty minute show presenting the very latest in low energy LED colour lighting and projection technology.

Sydney-based 32 Hundred Lighting won the contract to design, install and operate the nightly Skyscraper Illuminati spectacle.

32 Hundred's managing director Iain Reed selected the Clay Paky Alpha Profile 1500 for the job. "They are very, very, very bright and



## FIRST KARA SYSTEM ORDERED

Novatech Creative Event Technology has purchased the first L-ACOUSTICS KARA line source system in Australia.

"Our decision to purchase KARA was an obvious one," says Leko Novakovic, Novatech's Managing Director. "As an L'ACOUSTICS Rental Network Partner, we felt there was a spot in our L-ACOUSTICS inventory that KARA has filled perfectly. It ticks all the right boxes in terms of performance, size, weight, rigging and flexibility and compliments our extensive range of hire inventory which now exceeds more than 300 cabinets".

The world-wide demand for L-ACOUSTICS KARA has been strong. Novatech's recent purchase of a K-Standard system includes 24 KARA cabinets and 16 SB18 sub cabinets with appropriate quantity of LA-RAKS and rigging to suit. The shipment is expected to arrive in time for a busy summer.

"We are very excited to be able to provide our customers with the latest and greatest product from L'ACOUSTICS" added James Sacca, Head of Audio at Novatech. "KARA is an incredibly powerful and versatile system with an exceptionally high

I'm extremely happy with them. Their sheer intensity is brilliant and the classic Clay Paky eye for detail with the optics is amazing. I love the auto focus, vast colour mixing, gobo selection - really they are the Ferrari of moving lights!"

For Skyscraper Illuminati the Clay Paky Alpha Profile 1500 fixtures are combined with forty-four LED fixtures to paint three prominent city landmarks: the AMP building, the Four Seasons Hotel and the Marriott Hotel. Whilst the LED provide general colour wash, the Alpha fixtures provide texture and movement. Each of the twelve Alpha fixtures is housed in a custom-made perspex housing, designed and constructed by 32 Hundred Lighting.

Iain is delighted to report that there have been absolutely no problems with the Alpha Profile 1500 fixtures and that they have added an extra dynamic element to the lighting display.

"I have been blown away by their optics," he added. "You can light a twenty-storey skyscraper with just four of them."



level of intelligibility. The new rigging system is simply brilliant, cutting rigging time by half and being such a compact cabinet. I have no doubt that KARA, like its predecessor dV-DOSC, will be respected for many years to come."



## EXHIBITOR LISTS EMERGE

Just like a closely played game of poker, the dueling trade show promoters have finally started to reveal their lists of confirmed exhibitors.

ENTECH and SMPTE have 114 signed up, across a minimum of 15,000 square metres at Darling Harbour. Meanwhile INTEGRATE haven't yet shown their hand, but their website says they have in excess of 60 signed exhibitors, across the 7,000 metres at Moore Park.

ENTECH generally always hosted between 100 and 110 exhibitors averaged across the 17 years of its history. Of the 114 now on the floor across ENTECH and SMPTE, about 50 will sit on the ENTECH side. So have the 60 exhibitors at INTEGRATE all come from ENTECH? Not quite - some of the ENTECH exhibitors are 'over the wall' in SMPTE, such as Amber, Avid, Production Audio Services and a few others. And INTEGRATE, like ENTECH, has attracted a few unique exhibitors.

In the trade show biz, last minute bookings are common, so there will be additions on both sides.

Neither show has landed a killer blow on the other - and neither show has a clear mandate. The final countdown now is all about visitors and afterwards - how the exhibitors analyse the return on investment.

How the two promoters handle themselves will be critical to their future. If they put pressure on exhibitors 'on the floor' to re-sign for the next show, without proper analysis and industry consultation, there could well be a backlash larger than the one that has already spawned the incorporation of an industry association called ACETA.

*Photo: A previous ENTECH Seminar. The show attracts production companies and venues, while Integrate attracts installers.*



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# NEW DEVICES



## ArKaos Media Master Express

MediaMaster Express allows anyone to exploit the possibilities of a powerful media server. It combines ease of use and high performance for an affordable price, making it the perfect solution for quick media management and playback from a DMX or MIDI controller.

Features include 50+ text animations, 60+ effects, 8 independent video layers, advanced graphic engine, audio visualisation generators, and the ability to control video layers with just a few DMX channels or MIDI notes. It's also optimised for HD movies, and supports HD output.

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## RTS Zeus III-LE Digital Intercom Matrix

Zeus III-LE is the next generation of condensed intercom system units, giving compact systems more options for their intercom configurations. We now have 16 channels IN/OUT and two (2) configurable party line interface channels. Its compact size is perfect for environments with limited space. With the addition of Ethernet, the Zeus III can be configured from virtually anywhere on the network using AZedit Intercom software. Alternatively, the Zeus III-LE can be directly connected to AZedit through the use of the USB connector on the front panel.

The system has 16 standard RJ45 connectors making it easier to connect your intercom system with audio lines and keypanels by keeping the RTS wiring scheme.

The Zeus III-LE makes digital matrix comms a viable option for users with limited budgets.

RRP around \$11,000

Distributed by Magna Systems -  
[www.magnasys.tv](http://www.magnasys.tv)



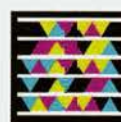
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To learn more about the comprehensive range of Philips Selecon entertainment lighting or to arrange a trial in your venue please contact your local dealer or sales manager: [www.seleconlight.com/dealers](http://www.seleconlight.com/dealers)



**PHILIPS**  
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# BROADCAST WIRES

## Here comes SMPTE!

Les Bishop previews the broadcast industry trade show, held sensibly each second year and this time alongside ENTECH. (19 - 22 JULY but note ENTECH ends on 21 July).

My mates and I look forward to this for months, getting ready for all the tech eye candy we can take in.

SMPTE is big. We normally spend two days there just to get through all the things we want to see. First: a quick visit to all the big flashy stands to see all the coloured lights and new toys that we wish we could buy. Then we head to the **Cable Labels** stand for our sample bag.

Down the back you will always find a number of small exhibitors that have interesting products. Then after our first coffee we head off to the ever impressive **Sony** stand. Sony has a large range of HD product and this year will be no different. Sony will show the new XDCAM cameras and media recorder range for production, as well as some 3D technology.

I am always on the look out for new vision mixers and effect units at affordable prices. Now I have a good wish list, it's over to the **Quinto** stand. They have all those extras that you need for production. From true high quality teleprompters, batteries and encoders to the highest quality converters from Snell and Wilcox.

Next to **Techtel** for a great range of vision mixers to suit any budget. From control rooms in a box to lower priced high end vision mixers - usually a great range of technologies that I just want to take home.

Usually from there we all catch up and spend time saying hi to fellow broadcast folk. It's a great way to see every one you grow up with - call it "Analog Facebook time". One of the



best things about SMPTE is the fact you catch up with all the people you have ever worked with, who have the same obsession with technology as you do.

After handing out our contact cards and getting some fresh air, we go back inside and hit the longer form stalls before our brains burn out from input overload.

The sugar hit from earlier is starting to wear off, so its time for a sit down lesson at one of the several stands running tutorials.

Day 2 of the show, we go in search of items on our wish and purchase lists. This time we ask the support teams on each stand about what we want and need. If you can get past all the kiddies from media school that think they are film producers, it's an informative day. Make sure you look at all the smaller stands, as you will find amazing things.



## EXHIBIT ROUNDUP:

**Digistor / Adimex** offer HD studio control rooms in a box. The new and improved series of TRICASTER (850) now bring full HD switching, graphics, replays and effects into a single unit. Tricaster has been around for a while now and has continually improved its stability and the quality of its work flow. For small churches and local video producers this is a must to see.

**AJA Systems** have released the FS2. This multi standard up-down and cross converter is now a 2 channel device capable of embedding and/or format conversion of 2 HD signals. Very impressive. Also from the AJA stables comes the KI (pro and portable) - one of the best products of the year. This is a unique recording device designed to streamline post production workflow by simplifying video acquisition.

**Quinto Communications** have a whole range of equipment including the newly released Microlite SD/HD broadcast camera link. The award winning ultra-compact MPEG-4 COFDM digital transmitter can deliver up to 200mW from a package of less than six cubic inches and features superb H.264 HD and SD encoding capabilities while operating in the standard 2k DVB-T COFDM mode. Also look for EVERTZ (channel in a box - station in a rack); OvertureRT LIVE; Decklink - Black magic distributor; and HyperDeck Shuttle.

**JVC Professional** will show HD cameras, monitors, switchers and related accessories. There is high interest in the GY-HM750E compact shoulder mounted camcorder and the GY-HM100E compact hand-held 3-CCD camcorder. Both of these record 35Mbps high definition video and uncompressed audio directly to inexpensive SDHC media cards in both the native Quicktime MOV format (as used by Final Cut Pro) and MP4 format for other popular editing

-----> Continued on Page 16



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-----> Continued From Page 14

software. The highly acclaimed GY-HM790E studio & ENG / EFP camcorder will exhibit the fibre optic system in a studio configuration.

**Magna Systems** will show Miranda's iTX - the most sophisticated, multi-channel content delivery platform for linear and on-demand television. Also see the TVUPack for un-tethered broadcasting - no van required. It's light, weighing only 6 kg. It's a fully self-contained content capture and broadcast solution with its own on-board power and data transmission capability.

**Techtel** have WO Automation for Radio 3.0 - the industry's most modern and powerful radio automation system, making sure radio stations are on the air and sounding great every minute of every day. Also see Telestream Vantage, which combines media capture, transcoding, clip management, analysis, QC, and metadata processing into a unified workflow framework. Vantage also integrates

with all the major broadcast servers, edit systems, streaming servers, cable VOD servers, SANs and virtually any network digital device in your facility. Look for Ross and TV Logic as well.

**The AV Group** always had a good representation at SMPTE. Highlights include the ScanDo HD Scan Converter, which converts Digital DVI and Analog RGB, at resolutions up to 1920 x 1080, to 3G/HD/SD-SDI output, providing broadcast-quality video images. Of course Grass Valley is massive - the T2 iDDR is a complete and self-contained SD and HD audio/ video playout centre which delivers superb image quality, versatility, and usability. Also look for the Abekas Mira Server - available in two models to best match your live television production needs.

## QUICKIES:

Make sure you see **Amber**, **Panasonic**, **Sony**, and **Panavision** if you love a good camera crane. Go to

**Gigasat** to see how small a satellite uplink can be. Visit **Videocraft**, **MTAA**, **STAGETEC**, **Gencom** and **Digistor**.

At **cases.com.au** you can you get 4 big drawers, a tray top workspace and a whopping big "lid becomes table" into a packed up dimension of 55 x 50 x 102cm.in under 1 minute for \$1095rrp!

Visit **Digistor** for your chance to win an electric bike packed with the leading tools for digital media production.

**JANDS** will be showing a range of audio, lighting, staging and rigging products - always worth a look in!

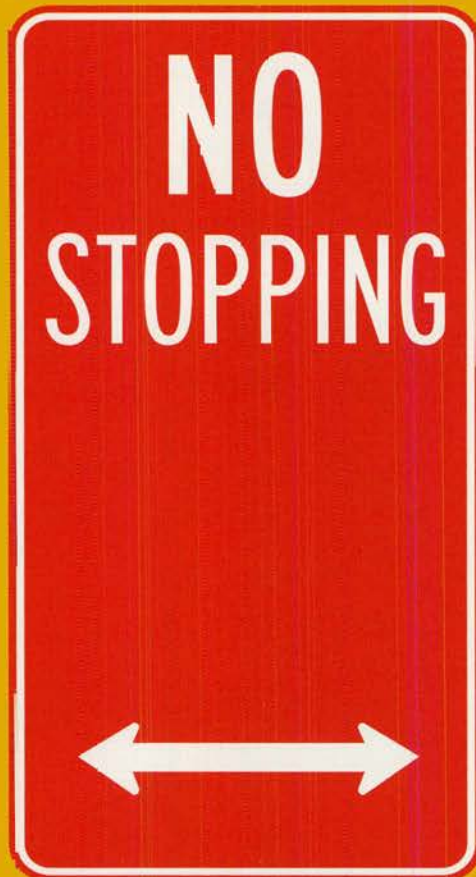
**Olympus Australia** show the high speed video camera ISPEED which is able to capture images up to 1,000,000 fps. Already used to record high speed events in series such as Top Gear and Animal Planet.

**Professional Audio Technology** will display the new LAWO MC2 66 MKII - Come and see why the Soccer World Cup, the Olympics and even the Rugby World Cup in NZ rely on LAWO equipment to deliver the broadcast audio world wide. Stand D10.

**Sonodyne** show off a compact speaker, and **Syntec International** have the KH 120 A studio monitor - the first product in the new line of Neumann Studio Monitors.

Oh, and did we mention another 50 exhibitors across in the ENTECH hall? Something for everyone...





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# FROM NOWHERE AT THE END OF THE EARTH TO GLOBAL DOMINATION

The rise and rise of Selecon - as CEO Jeremy Collins retires

By Julius Grafton

Back when Selecon Reid imported CCT theatre lights, a young Jeremy Collins dabbled in lighting design and travelled around the NZ schools and theatres selling lights and Rosco gels. It wasn't long until the firm started to make fresnels, boosted by the rampant tariff protectionism of the 1970's. In the mid 1980's, Jeremy and his partner Andrew Nichols bought the firm from its founder, Walter Coleman.

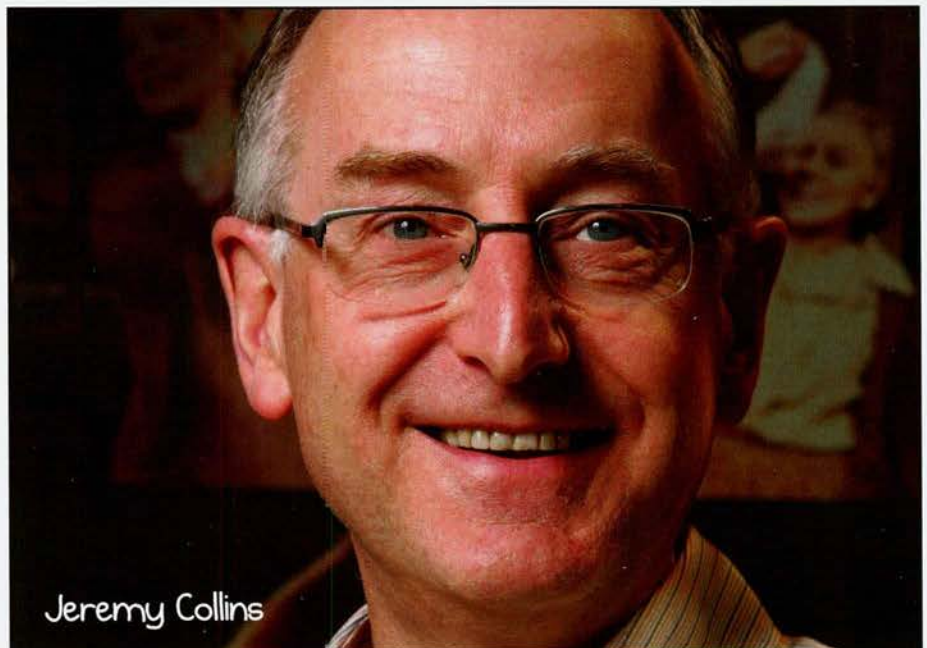
They had a clear target: export. The market leader in Europe and Australia were Strand Electric and they were highly dismissive of Selecon. In the 1980's it was common to hear sledging and derogatory misinformation across the industry, coming from what was then a massive and apparently invincible brand. Paying out on a small NZ company, like a Silverback Gorilla bullying a baby.

Fast forward to now and Philips Selecon is a cornerstone of Philips Entertainment Lighting - with Vari\*Lite, Strand and NCW China the other brands within the group. Together they make arguably the strongest, largest entertainment lighting firm in the world. Jeremy Collins number two at the top: deputy to Steve Carson, VP/GM of the group.

How did Selecon rise so high, to eventually be acquired by Philips - one of the iconic manufacturing giants of the world? And how did Strand itself collapse into bankruptcy, to end up a junior brand to Selecon in the new world order?

## FACILITY

CX went to Selecon HQ and manufacturing plant in Auckland. It is a modern facility with around sixty staff. Enter via an open showroom, with meeting rooms on the right and a sweep of open plan office to the



left. Turn right to go onto the factory floor, or go down the end to the R & D room.

Every impression is positive. With complete access to the facility, CX formed the view that morale was very good, conditions were excellent, and a modern manufacturing miracle was indeed occurring.

"Of course labour costs here are much higher than China", Jeremy said. "And nothing is sacred - internationally you have to be competitive". But it works well - a lean manufacturing model has been developed over decades at Selecon, and teams are empowered to make decisions and work efficiently.

**“Selecon refused to install an enterprise technology platform like SAP, instead they rely on systems where each component has a code that makes sense.**

"When Philips did their due diligence they said they were impressed with our team model", commented Jeremy. To underscore this, as we talked one team clocked off for morning tea - and actually turned off the worklights above their work stations.

Selecon refused to install an enterprise technology platform like SAP, instead they rely on systems where each component has a code that makes sense. A job card for each item is attached to its parts bin, and when empty goes onto a board in plain view of the controller.

Parts come in from around New Zealand - including aluminium components forged in earthquake stricken Christchurch - and around the world. The finessing of component supply lines into completed goods has been endless. "We were able to cut half a million dollars out of the stock lines just by reworking how we do it", a proud J.C. says.

So what happens to this now that its leader is to retire? "Nothing is ever guaranteed", he says, "but ask around. See what people think." I do, and it appears that the status quo will be maintained for the

foreseeable future because it works.

To underscore: a team are building profile spots. Lurking nearby I watch unobserved. They are the ethnic mix that makes NZ great - Islanders and Asians. It's said that NZ has a more Scandinavian undercurrent that enables teamwork.

Ten of them wire, assemble and finish off the profiles. The guy at the end of the line puts a lamp in, hangs it on a bar, points it up at a white screen, and tests the optics. He is thorough. They all are.

On the production whiteboard:  
Problems: none. Issues: none.  
Production: All good in the hood.

## POLITIC

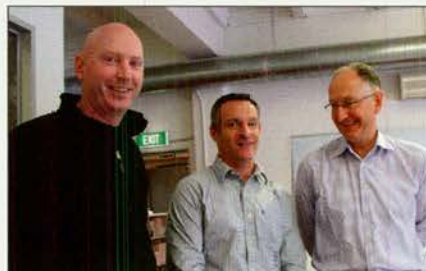
Before Philips came knocking several years ago, Selecon had already established its own facilities in Europe and the USA, and positioned loyal staff. They assumed the Australasian marketing model that Selecon had used to beat Strand -



Top: Marie Southwood & Mike Pak

Middle: Selecon

Bottom: Paul Freestone, Bruce McCallum, Jeremy Collins



travel, show product, evangelize the brand. Then repeat.

"I saw (another distributor) at PLASA (London) years ago, and he said he saw me more often than the guys from Strand UK, who were in the same city as him", remarked Jeremy Collins. He spends around a quarter of his time overseas, and presumably will not miss all that business travel.

Philips were smart, they have made theatre and specialized lamps for a very long time, but saw that business would diminish as the LED ascended. "We had a break through before we designed the Pacific, where they (Philips Lighting) started to talk to Andrew and myself about lamps", said JC. "At the time they had released the Bluepinch 1k lamp and it did burn hot. We designed the Pacific to get the heat out the

-----> Continued on Page 20

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S/WIRE



Phil Sargent  
(Asia and Middle East  
Marketing Manager)



Bruce McCallum, Andrew Nichols



Continued From Page 19  
top of the fixture, not out the lens. It turned out the other manufacturers (like Strand) would churn through their design teams, whereas we were always around".

Selecon had ongoing hassles convincing suppliers they were a serious concern, located at the end of the world, exactly equidistant from London.

But the persistence of the people at Selecon slowly bore fruit. Strand released idiotic luminaire models with confusing names and no family connection, designed apparently by different people in different places. "They were never really interested in lights, rather the Strand business was all about large (and expensive) control systems, like MMS. With the 500 series (of theatre consoles) they really did well", says JC.

Genlite bought Vari\*Lite and the wreckage of Strand, Philips then took over and acquired Selecon. At roughly the same time, they also bought Dynalight in Sydney, which is now part of another Philips group, along with Color Kinetics, a giant in LED technology.

## PRODUCT BOOM

"We went over to Vari\*Lite and compared technologies", said JC. "The engine from the VLX is what now powers our PL1 LED profile and PL3 LED wash". With Selecon and

Vari\*Lite combined into one group, the market quickly responded favorably.

Now the digital lighting revolution is underway.

Back in 1988 Jeremy was asked to design the lighting within the New Zealand pavilion at Expo 88. His investigation of the architectural display lighting market astounded him. "There was no way to put a gel frame on anything", he says. "The retail and display designers didn't work with texture, no beam shaping. That's what led us into that market".



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"I've really enjoyed the combined benefits of bringing all that into the display market and I think we did it better than some others. We've brought theatre techniques across segments like museums and retail. There are so many opportunities!"

As we visit, a new cyc light with an asymmetrical reflector and a LED source was released, the Wing range. A LED spotlight for TV was in the R & D lab. And the Strand power, data and dimmer bar was being released.

"The future of control is interesting. Essentially we don't see a big future in big control - there are APPs and

everything is going digital".

### SAIL INTO SUNSET?

So what is it about the lighting business that's been the crowdfcard for Jeremy Collins, aged 58 with a wife, two adult kids, and a new house by the lake?

"We want to be affected. A story creates an emotional response. Tell a story - that's what we're about. Light to tell a story".

"I've achieved more than I hoped", Jeremy told CX over breakfast early in the day. "I'm not a corporate type,

but saying that, Philips have been great. I've learned a lot, and will keep on learning."

But there's more to life. I've joined a technology incubator associated with the Uni here. I just want to go out and see what is out there".

### Will you return?

"There's a non compete period obviously, but I don't think so".

"Someone once gave me great advice about business. Let a company have its own existence, its own life. You have to give it space".



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## AUDIO HELP

'Behind The Mixer' is a handy website run by Chris Huff in the USA. He has a training video to sell you, but plenty of free articles that carry the CX tick of approval. One of them is headed 'You want me to play music from your phone?' and it hits the nail on the head.

I don't know how many times I've had a space cadet rush up just before service to breathlessly tell me they have a segment with a music track on this phone, here. In anticipation we always have an iPod cable handy, which runs into the line input jacks of a stereo mixer channel.

Then I insist the segment provide an operator to cue the phone. And remind them to switch it into airport mode, which usually produces a blank stare. Nothing quite like a phone call to interrupt the dance sequence, is there?

Chris has some other pointers in his article, which is at [www.behindthemixer.com](http://www.behindthemixer.com)

## FRIDAY MADNESS

Nothing is quite as erratic as youth night at our church. Happens to be Friday, which means rolling up at 3.30pm direct from work to handle the soundcheck - slash - rehearsal phase.

Here's where all church technicians get to assist the band get on with the rehearsal. It really helps if the sound operator drives proceedings. Are we there for a sound check or a rehearsal? It is almost always a

rehearsal that requires a soundcheck at the start, to get the stage monitors right.

I've noticed church bands operate different to the secular bands at the other venue I work. All bands set up their stuff the same, which is usually at or after the appointed hour and never early. There is always one missing member, and there are always calls made.

As the audio engineer, I insist on whipping the band through soundcheck for their own sake. The times I observe young engineers who don't do this, are the long and pointless waste-of-times. No one is in charge, not even the worship director or the musical director. Without firm engagement with the audio dept, they wallow in a flat-infused mess of riffs and blunder, looking around trying to figure why their wedge or in-ears doesn't yet work, or indeed where to connect to stage mains. And who is there to help? A gaggle of rudderless people, not guided by firm-but-accurate direction from the front of house position.

Youth nights are different again due to the possibility of a random appearance by absolutely anything from a dance act to an entire band, who can come rushing through the doors in a cavalcade of equipment, people, and confusion to descend on your orderly stage and create havoc. I kid you not - someone has a revelation, and before you know it, the Next Big Thing are rushing at your stage for a changeover you didn't expect. Just when you planned to decamp for a coffee.

Then a smiling assassin turns up at the mixer and announces he/she will mix this unannounced (to you) but long planned (oops, says Pastor) band and sets about doing things you'd never attempt at sound pressure levels that would make the average 'screamo' blush.

*Gotta love them Fridays!*

### Church Audio. Quiet, huh?

*Generally Sunday morning church is not earth-shockingly loud. Even with modern precise and worship (a band and singers) the general idea is clarity and family friendly. But other services can differ. Nights are more often youth based, so the factors can rise.*

*It's difficult: getting a lot of people balanced while maintaining a sedate 90dB. Almost every church encases the drummer behind a Perspex screen and encourages the drummers to go easy on the cymbals. Although most drummers seem opposed, electronic drums (hello Roland) are awesome.*

*So you secular soundies can stop sniggering - our (church) audience are usually all seated and well versed with what they think sounds right in the venue, on Sundays. We often start work or volunteering very early on a Sunday. It's not an easy gig! You guys get right audiences who are loose at the end of a day. We often get people at breakfast time. Discuss.*

## CHURCH TV

'How to do it' without spending too much...

New broadcast gear is sometimes crazy priced, but many churches now want Church TV. Hillsong and C3 have set the standard in Australia, and it's a high standard. There's two flavors of Church TV.

First is the big screen watched in the venue to assist viewing the message, show video, and roll some scriptures and song lyrics. If you want to image or show the pastors and the worship leaders in real time, you will need a system that has very little latency, or frame loss.

The second flavor, which should go with the first, is to show your church on TV later. If you score a community or cable channel deal that's great, but in recent times you can put a high quality show on the internet, using YouTube or better still a commercial video hosting site like Vzaar or Oculu. Vimeo may also be an option, if your content fits their model. More on this later.

*We've put two sets of options up here for you.*

## NEW AND USED

You could go second hand for the cameras and choose either Canon XL2 or Sony Z1P. This gives you prosumer level widescreen HD - with no remote control. Why remote control? Colour balance is done from a camera control unit (CCU) and in this cut price TV facility you'd better train those volunteer camera operators well because they will need to do colour balance and iris on the fly.

Expect to pay up from \$2.5k per camera on Ebay. The other issue with these is that they don't have SDI output, which makes long cable runs in digital difficult.

If you want new, you can't go past the Panasonic HPX 172 EN, and these babies cost north of \$5k each. Plus they do digital SDI output.

Just remember what we said about no remote control - professional church TV has camera chains with CCU, and if you go that way expect to pay and pay some more. SMPTE trade show is on this month in Sydney (Darling Harbour) where you can see professional new equipment.

Tripods: you need a fluid head unit like a Miller DS5 or a Vinten equivalent. Budget \$800 second hand or double that for new.

Don't use second hand cable - budget about \$140 to \$170 per camera for cables, depending on length. You'll need mains cable out to each camera as well, since you really don't want to rely on camera batteries.

Mixer: A Roland V4 will do the business, we found these at around \$1k on Ebay. The problem with this is that we do not have SDI digital input, so we have more latency (delay) from composite or

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component inputs than with a newer solution. The V4 or Ebay cheapies like it may well provide too much frame delay for live imag, but if the objective is to capture live and edit for ipTV later, then game on.

If you want a new mixer with SDI digital input, look at Panasonic AW HS 50 and allow over \$4k for this one.

## MONITORING

At the mixer you'll need to monitor proceedings, you can get a low quality CCTV type quad split and run some old CRT or LCD screens to see each camera, and one for the mixer output. Allow a grand for all this stuff used, but if new the AW HS 50 has one monitor out so the setup is simpler. Allow \$1k new for a good single screen, onto which you'll have a multiview.

Comms: You really have to talk to the camera ops. Used comms are always problematic, allow \$250 per station, \$500 for the base station, and \$300 for cables. I'd buy new and allow at least \$4k for a basic system.

Then you need to record the output, after sending it to screens in the venue for live coverage of the service. Second hand you could use a Sony DSR11 DV recorder, we've seen these at about \$500 or a new Black

Magic Hyper Deck Shuttle which will probably cost \$800.

Whatever storage device you use you still need to get the material into Final Cut Pro on a Mac (or whatever else you like) to do edits. Final Cut express doesn't do HD, but will do SD for your second hand solution.

## EDITING

This whole article is working on the premise that you'll switch the camera's live, as the action happens. That's what imag is all about - select image, switch camera, select next image, switch. Stay ahead of the bad shots and communicate with the camera operators.

The way-more expensive and slow option is the way they make pre-recorded TV and movies, and that is to capture images from each camera and splice the thing together using time code later on. Slow, expensive, and not realistic for the average CX reader.

As the live imag stuff happens, you've saved the output images and later on need to put them on the Mac for edits, like trimming between segments and inserting titles.

This will surprise you: a regular iMac 21" running a 2.7mHertz processor (up-spec from the base model) will

easily do the work! Pay \$1,698 for the Mac (new) and Final Cut Express will cost just \$268. It does not do HD, so you will be in the world of widescreen SD, which is 'good enough'.

For HD get an iMac 27" top of the line model (up-spec processor, regular RAM) at \$2,299 with Final Cut Studio software at \$1,499. This is still way, way cheaper than our options just a few years ago, when we wrestled with a proprietary AVID suite or an Adobe solution using bespoke heavy duty computers with expensive video cards.

When you decide to put your material online, there are four choices. YouTube comes with complications in the form of suggested sites at the end of your video, and you'll probably want to turn off comments. Vimeo, Vzaar and Oculu are all comment and advert free, but the later two carry a cost. You can embed a video into your website using all of these, including YouTube.

We strongly advise you allow a realistic budget for help and training, so the table below has an allowance. Don't forget we have not priced the screens around church, whether they are flat screens or projection, these plus cables and installation are a considerable extra cost. α

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Monitors	1	\$1,000	\$1,000	\$1,000	\$1,000
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Mac	1	\$1,698	\$1,698	\$2,299	\$2,299
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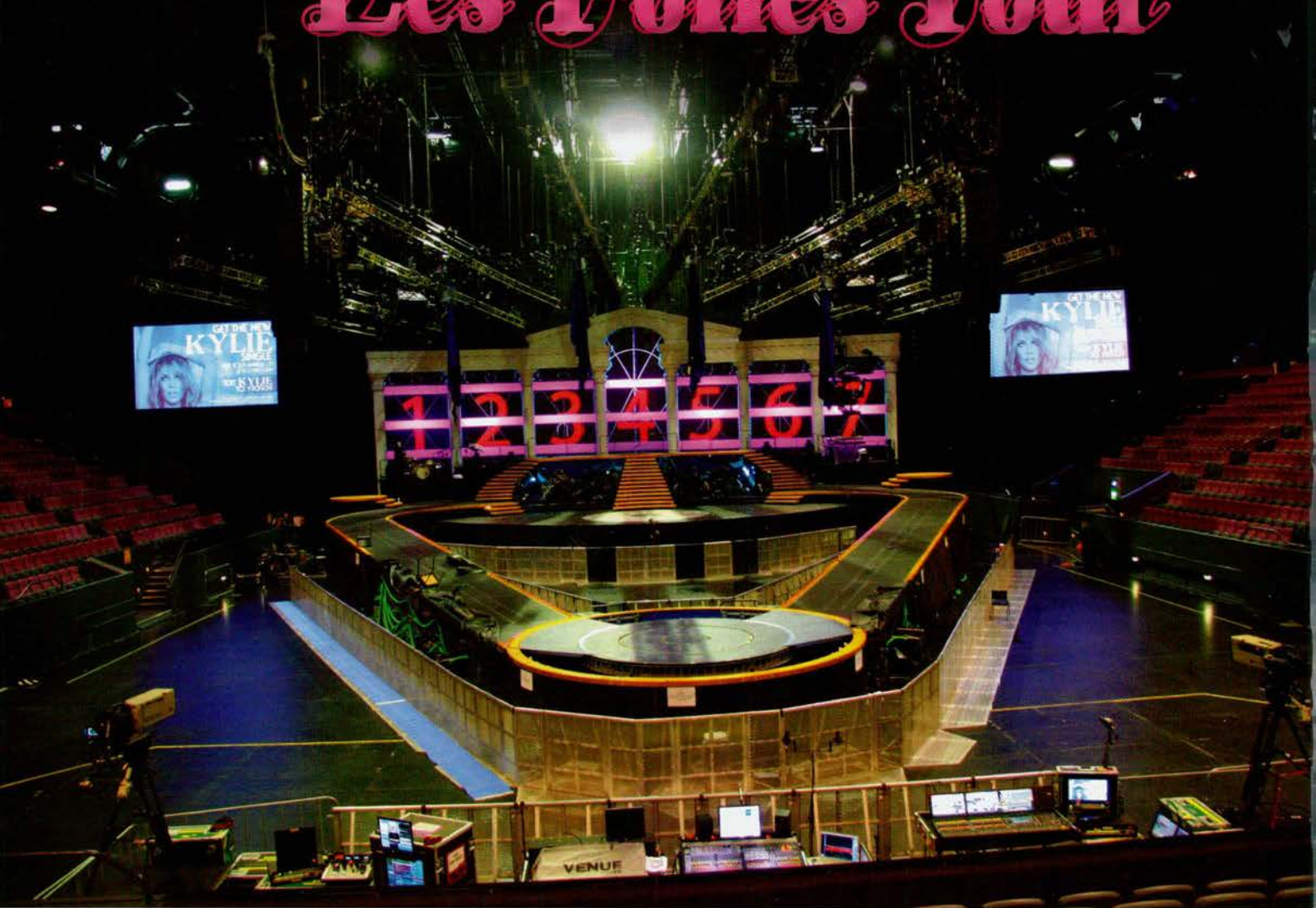
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# Kylie Aphrodite Les Folies Tour



**K**ylie Minogue has invested heavily and produced a theatrical arena tour that sets some new boundaries. Hiring Tait Towers to build a mammoth set that includes a ridiculously-over-the-top water system, the show dazzles and impresses.

Technically some almost-firsts were rolled out for Australian audiences. The new K1 line array system from L-Acoustic was featured, this is the front edge of current line array technology. A Harkness Translite Midnight PVC rear project screen system that is virtually black when no image is projected, displayed super crisp HD imagery, courtesy of seven Christie 24k projectors. No pixellated LED walls or curtains here.

200 Vari\*Lites did the business, with an impossibly rich visual canvas where the stage set sucked up most

of the floor area at the Sydney Entertainment Centre - making that venue look intimate.

All technical production came from Solotech, the French Canadian colossus that now are one of the major full service suppliers of turn key production. They provide rigging, lighting, video and audio and promise greater efficiency because they have one integrated crew, albeit a crew who still work in departments, but who are ready to support each other. The other Solotech selling point, aside from state of the art equipment, is one account manager to deal with. In this case, the continually travelling Richard Lachance invited CX to view the production.

Lachance is thorough, and has every critical email or list printed in hard copy in date order in a folder he

carries everywhere. He has hotel front desk staff run ragged with his printing requirements, but it means he is one step ahead of computer outages.

It should also be said that the Australian production industry detest an international firm working Australian soil, but it's a story old as time. CX recalls the INXS X tour in the early 1990's, ironically at a time frontman Michael Hutchence was involved with Kylie Minogue. INXS imported sound, lights and crew and the local industry were incensed.

But read on: it is simply not possible to break the contracts in place for a one year world tour, to hire local production while the international equipment sits in storage. Not to mention breaking down the touring elements. These days a world tour is a massive integrated machine.

## BARRIERS

It was the water world that broke boundaries with this tour, because most water shows are installed, not toured. The show needs a set up day, not the least because two water tankers must come in to deliver the H2O. Then it must be heated to 110 degrees F, at the tanks, to emerge at 80 degrees from the fountains.

The VIP tickets are in the Splash Zone, and those punters pay \$400 for the privilege. They get a poncho, and they get wet. A pool along the front of the stage has fountain lights under the water. The rest of the water action is out on the curved catwalk, which is perforated under the rubberized flooring, to return the water.

Under the catwalk and the stage lurk tanks of water, three phase heaters running 24/7 to keep the temperature up. It's like a little rain forest under there, minus the green stuff. In the northern world many arenas are used for ice skating, so they have industrial quantities of hot water on tap to melt ice with. But down under the water is trucked in, and heated.

-----> Continued on Page 28

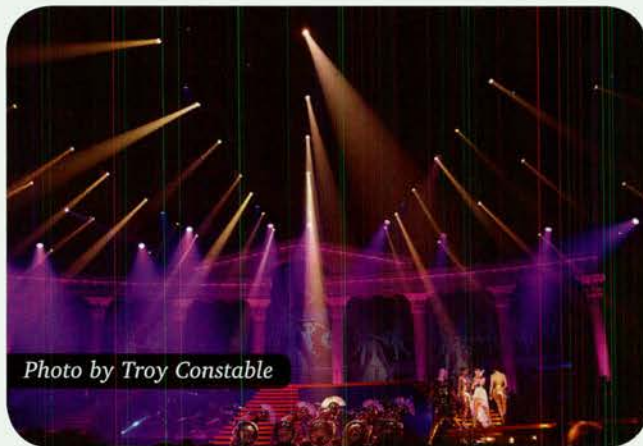
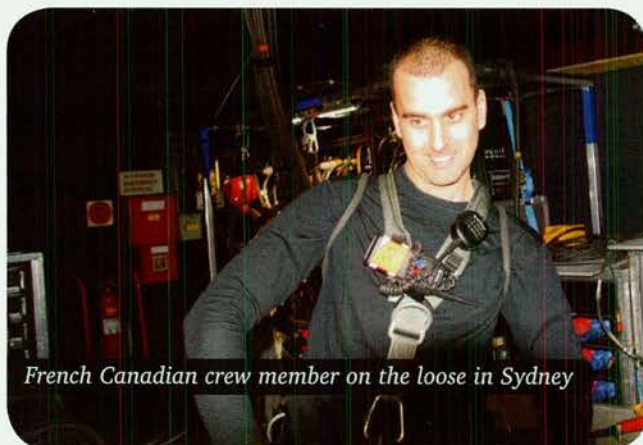


Photo by Troy Constable



French Canadian crew member on the loose in Sydney

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Continued From Page 27

A maze of three inch green hoses snakes everywhere, the occasional drip tended to by a harried group of water techs, crouched low it feels like a submarine. Water water everywhere, mops, buckets and wet vacs battle to get the venue looking dry for doors open.

Water dribbles back down through the catwalk floor, and is caught by big drip sheets that funnel it directly back into the tanks underneath.

**THE K1**

L-Acoustic's K1 is the new top end arena solution, a 3-way active enclosure quad-amplified design using the Wavefront Sculpture Technology and driven and protected by a dedicated amplified controller.

Inside are two direct radiating 15-in LF transducers each mounted in a bass-reflex enclosure, four direct radiating 6.5-in MF transducers, and three 3-in diaphragm compression drivers coupled to individual DOSC waveguides.

The usable system bandwidth is said to be 35 Hz to 20 kHz ( at -10 dB). When operating with the arrayable LF extension and/or the stackable subwoofer system, the usable bandwidth goes down to 34 or 25 Hz, respectively.

Long term RMS handling capacity is 2 x 600 W for both LF sections, 600 W for the MF section, and 220 W for the HF section.

On the Kylie tour, 14 boxes a side flew in front of eight complementary subs, flown behind due to the massive lighting rig occupying most of the roof space.



hunka hunka dimmer beach



Set piece



Wireless city



Monitor engineer position



Photo by Troy Constable

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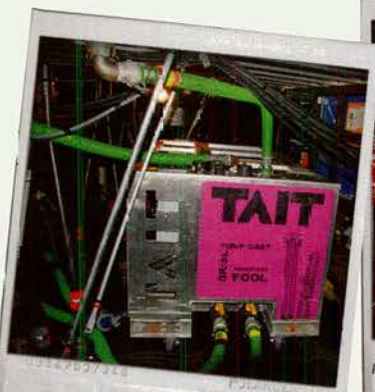
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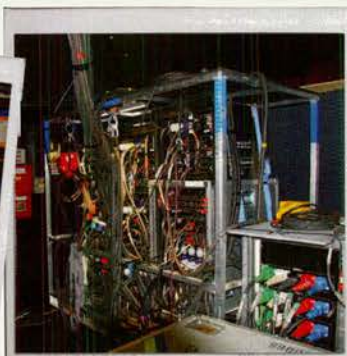


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Tait water tank



Amplifier beach



Our tour guide  
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## KYLIE LIGHTS

By Catriona Strom

Lighting for the show, designed by Nick Whitehouse with Steven Douglas touring as lighting director, relies heavily on Vari\*Lite fixtures: 84 x VL3500 Wash, 84 x VL3000 Spot, 4 x VL3500 FX and 30 x VL500.

The VL3500 Washes were chosen for their exceptional versatility and their extreme brightness.

"With the variety of lenses that we are using - both internal and clear external - we can get everything from two VL3500 Wash fixtures covering the whole stage to really narrow pin spots," remarked Steven Douglas. "The colours are also so rich. It's pretty much the same with the VL 3000 which both Nick and I regard as the best profile fixture on the market. I know that Nick did a comparison with all the latest fixtures on the market, such as the Martin MACIII and the Clay Paky 1500, but at the end of the day we felt that the VL3000 was still the way to go. It has a great selection of gobos which is ideal for a show like this which is all about the big picture."

The VL500 fixtures are mainly built into the set piece that resembles a Roman amphitheatre. In between the columns are black projection screens and three VL500 inset into the header piece. A further twelve VL500 are situated on the floor.

"The VL500 fixtures were chosen for their beam angle, said Steven. "They have a low profile and are small, taking up the least amount of space in front of the projection screens."

The four VL3500 FX fixtures are housed in a custom-made rack which can be wheeled in for special backlighting such as when Kylie appears on an upstage centre lift effectively giving her a 'God silhouette'.

Steven reports that all of the Vari\*Lite models have been really reliable on the road with no major failings at all.

"If there has been a problem it's usually something simple like they got bumped in the truck," he said.



# OCEANIA AUCKLAND



Dorus Hommels, Ops Manager and Bjarne Hemmingsen, Senior Sound

Oceania founders Paul Jeffery and Greg Peacock



David Bull, repair guru knows how to use that tool

CX dropped in to this most excellent 'one stop shop' to find CEO Matt Jones home. There's a big bunch more pix on our Facebook page, see CX MAG for more!

Hamish Able in the lunchroom



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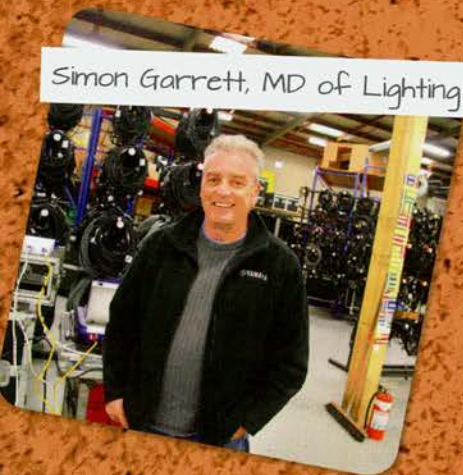


Brook Duncan, audio dude

Niel Heathcoat, AC manager with James Mackenzie Audio GM



Simon Garrett, MD of Lighting



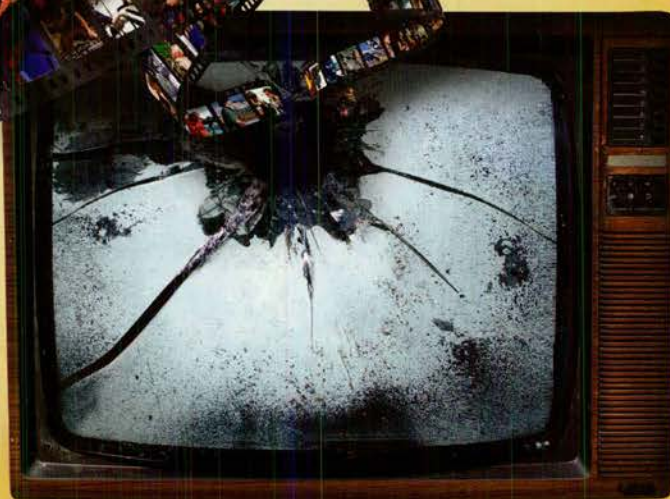
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# TINA ARENA

## WITH THE WEST AUSTRALIAN SYMPHONY ORCHESTRA

Photo by Bob King

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*By Peter Robins*

---

In the first of their 'Contempo' series of concerts for 2011, the West Australian Symphony Orchestra (WASO), under the direction of Victorian Conductor Nicholas Buc, teamed up with arguably Australia's favourite chanteuse Tina Arena, over two dates at Perth Concert Hall.

Recently, Nicholas was conductor/arranger for Tina Arena's concert tour of Melbourne & Sydney, writing new orchestral arrangements for many of her old hits. The Associate Concertmaster for WASO was Margaret Blades.

Contempo concerts are an outreach program of the West Australian Symphony Orchestra to bring classical music to a wider audience in WA, and as such, are consciously designed to attract a different demographic to those who would normally attend a classical music concert.

This month WASO will be presenting Contempo concerts with James Morrison performing Louis Armstrong in July, the Gershwin Greats in November. Past themes

have included Space Classics - Sci-Fi Movie themes complete with the Conductor dressing as Obi-Wan Kenobi and Stormtroopers scrambling up the aisles!

The two concerts with Tina Arena sold extremely well, and the audience reaction was wildly enthusiastic on both nights, as you could reasonably expect from such a powerful mix of musical talent!

### *Preparation*

By its very nature this was always going to be an audio-heavy gig! A full symphony orchestra plus a 5 piece electric/acoustic band backing Tina Arena, with every element amplified and an extensive monitor system of in-ears and wedges with Aviom control, covering all principal performers.

“**The two concerts with Tina Arena sold extremely well, and the audience reaction was wildly enthusiastic on both nights...**”

Extensive planning was performed by the key audio personnel, Chris Ridgway (FOH Engineer for Tina Arena), Guy Smith (FOH Engineer for WASO), Martin Gould (AudioTechnik WA), Jim Bowman (Head Audio Engineer, Perth Concert Hall), Matt Debien (Monitor Engineer), James Newhouse (Monitor System Engineer), WASO Production and Technical Manager David Cotgreave and myself, to ensure that all bases were covered.

Excellent planning and design was also provided in lighting the show by Perth Concert Hall Head of Lighting Peter Rubie, who chose a mainly Martin Mac rig from Matrix Productions, but with 8 of the new Robe Robin 600 LED Wash heads from Clifton Perth, all controlled by a Jands Vista 2 Byron console with outboard wing and our house Bytecraft (now PRG Australia) Bytesize 483 dimmers.

The unusual element to this production though, was the fact the shows were scheduled with a gap day in between, and for reasons which only became apparent later, another show from a different client had been scheduled on the gap day, which resulted in some notable verbal angst from several quarters! It meant we

had to load in on Tuesday, rehearse from Wednesday to Friday morning, do one show Friday evening, bump out most of the gear - changing from a full thrust to a half thrust stage, bump the stage risers, left & right floor stacks, all monitors and microphones, fly the lighting rig to the roof covered in blacks and bump the lights on the deck and around our choir stalls, then allow the client in between full access to the PA for their show, which had a cast of 300 performers, mainly consisting of school children!

Then after the Saturday school show, we had to change from the half thrust to a full thrust stage, rebuild all the risers for WASO, lower the lighting rig back into position and rebuild all the floor audio and monitors! "Warning Will Robinson! Danger, Danger!" (Apologies to all the Gen-Xers who don't understand that quote from 'Lost in Space'!)

Fortunately with such extensive planning, several rolls of white electrical tape and a box of Sharpie markers, all microphones and monitor positions were labelled, as were the floor and choir stalls lighting positions plus every other position and piece of kit that wasn't nailed down!

It also helped greatly to learn the FOH engineer for the school show in between was accomplished live and studio engineer James Hewgill, which made communication and the changeover between shows a lot smoother.



James Newhouse and Matt Debien

## Audio

Chris Ridgway and Guy Smith collaborated on the audio design, with Chris taking the lead role of FOH audio designer and engineer, and Guy designing the orchestral audio build and engineering their mix.

FOH control was via two DigiDesign Venue Profile consoles, one owned by Perth Concert Hall, the other from AudioTechnik, with 3 x 48 channel stage racks, 1 x Avalon 737 and 1 x TC M5000 reverb. The Avalon 737 valve comp combined with a BSS DPR901 for Tina's Vocal Insert and the TC M5000 reverb was used in dual engine mode to provide reverb for Tina, her band and the orchestra.

The main speaker system was a mix of Perth Concert Hall's d&b Q series centre hung line array, with extra d&b speaker reinforcement from AudioTechnik. Jim Bowman, Head Audio Engineer at the Concert Hall, describes the PA configuration. "Due to the high reflective surfaces within the Perth Concert Hall, our PA has been deliberately designed as a single centre hang, with out-fills time-aligned to the gallery seating positions. The d&b Q system is ideal for the Concert

-----> Continued on Page 34

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Hall with its even Hi Frequency coverage and controlled Lo-Mids and Subs."

Speaker distribution was the centre line array of d&b Q1's, with out-fill's of Q7's and Q10's. On the deck at stalls level there were Q1's sitting on B2 subs each side. This is where stereo imaging is achieved most effectively in PCH. Front lip-fill at the downstage edge was via d&b E3's, with delays under balcony stalls level also using installed E3's. All PA was controlled by proprietary d&b D12 and D6 power amplifiers and processors with tablet PC.

Microphone selection proved critical to the warmth and dynamics achieved in the end result. For Tina Arena's vocals, Chris Ridgway chose a Shure KSM9 condenser radio mic, and replicated that choice for two backing vocalists. Chris commented that the tone from the KSM9 was very warm and natural, whilst handling Tina's huge vocal range and dynamics extremely well.

All up there were 31 input lines for Tina's band. Microphones for the orchestra were an impressive array of 30 x DPA 4061's, 10 x DPA 4099's, 18 x Neumann KM184's, 5 x Beyerdynamic M69's, 4 x AT4080's, 4 x AT4033's, 4 x AKG414's and 2 x

Schoeps mk4's, most of which were supplied by AudioTechnik, having purchased many of the DPA's just prior to this show.

The new hyper cardioid DPA4099's were chosen for cellos and basses because of their focused midrange and bottom end, which gave more level to work with overall. Winds, brass and percussion were mic'd using a combination of Neumann 184's and AT 4080's and 4033's.

Over 100 lines were used off the stage, with the Orchestra being mixed by Guy Smith on one Venue Profile console with two stage racks and nine stems sent to the second Venue Profile running a third stage rack, operated by Chris Ridgway for the main FOH mix including Tina and the band.

### *Monitors*

Matt Debien ran monitor land through a Yamaha PM5D RH, with 6 x d&b E3 speakers, 3 x d&b Q7 speakers, 2 for Tina's sidefill and 1 for monitor preview listen, 3 x Shure PSM900 IE systems with PA805 PSM Antenna and Combiner, along with 7 x Aviom A16 Personal Mixers. Matt was assisted by AudioTechnik's James Newhouse.

d&b E3's were a deliberate decision

for orchestra foldback. Due to their low profile, they mount discretely on small round-based stands allowing them to be easily positioned within the orchestra, providing discretion and good levels on a very crowded stage.

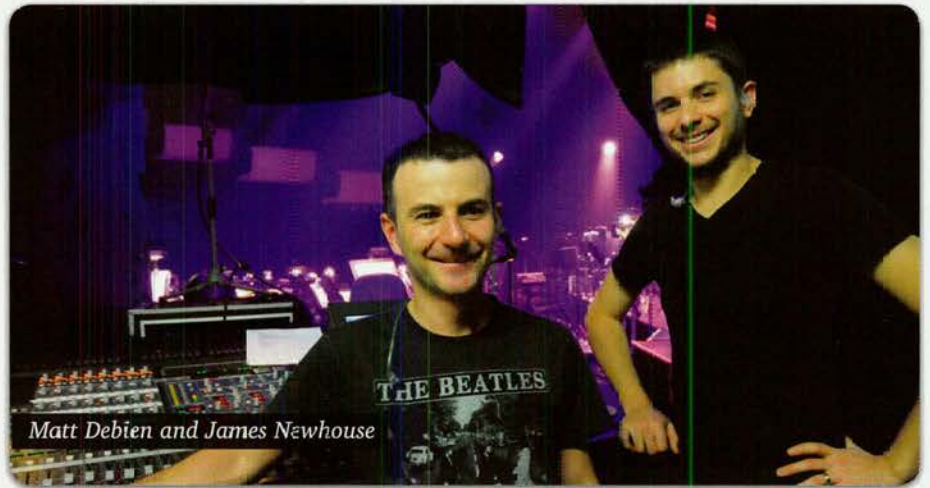
In-ear monitoring for Tina and her band was managed by using the Shure PSM900's along with an Aviom system, which allowed each member of the band to adjust their own mixes.

### *Lighting*

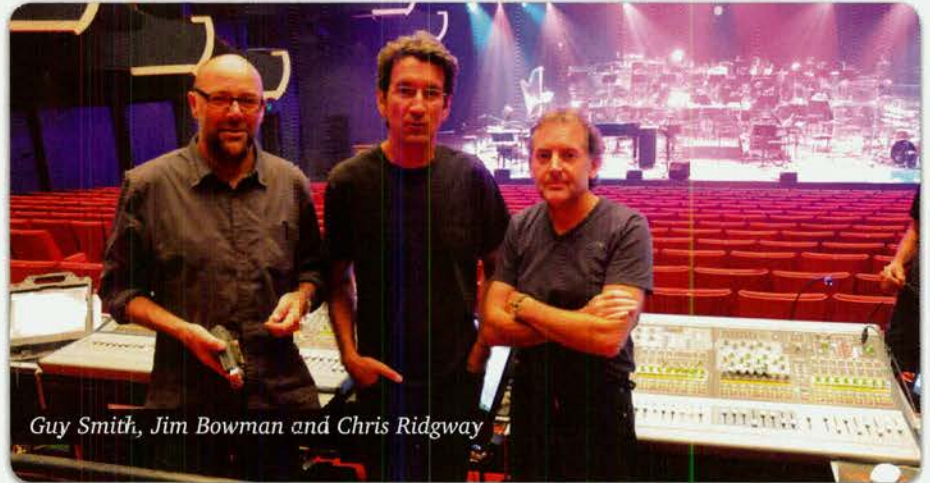
Perth Concert Hall does not have a fly gallery, but we do have a 19 metre high roof. All rigging positions need to be accessed through 150mm by 300mm 'slots' every 2 metres either side of the house lights, so we don't have an unlimited source of rigging points available to us, especially upstage, where the air-conditioning chillers live over the stage, leaving only a small crawl-space for ceiling access.

This in turn presents some challenges when trying to come up with interesting and workable lighting and truss designs. On the plus side, because we have choir stalls upstage, we can use the edge of the stalls as a 4 metre high lighting ledge for shows like this.





Matt Debiem and James Newhouse



Guy Smith, Jim Bowman and Chris Ridgway

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Venue Head of Lighting Peter Rubie designed a rig with a combination of Martin Mac and Robe fixtures. The Macs were supplied by Matrix Productions, and the Robe fixtures by Clifton Perth.

Peter tells it like this: "This rig was a chance for me to combine the tried and true Martin Mac 700 wash and spot fixtures I'd been using for while, with 4 of the new Mac 350 Entour LED's, as well as 8 of the new Robe Robin 600 LED wash fixtures. We had been given a demo of the Robin's by Ed Matthews of Clifton Perth, and this was the perfect opportunity to try them in a concert design.

"It was a bit of a challenge to plot whilst the rehearsal was happening but the speed of programming on Byron and the visual representation when editing blind really helped in that aspect. The Jands Vista 2 Byron has just been released out of Beta and I didn't have any major issues with its stability or otherwise during the show. Being the second time I've used the Vista 2 Byron in a show environment I'm glad I chose to do so, as it has vast improvements over Vista 1. One feature that came in handy with this show was the window themes. Being in the middle of the audience rather than in a bio box, I was able to set the screens to dark colours so they weren't overly bright or distracting to me or the audience sitting behind me.

"This was my first time using the Robin 600 LED wash alongside the Mac 350 Entour LED. The Robes impressed me as much onstage as it did in demo. I used them to backlight the orchestra, and it was nice to have a wash light without the 'smarties' look and one that could reproduce more than 6 colours.



"The 50 degree zoom is particularly impressive and it faired very well in terms of output when put up against the arc source fixtures in the rig. The Mac 350 Entours also impressed me. I've seen a few of the other LED profiles and what the Mac 350 lacked in features such as prism and gobos, it made up for in output, being slightly brighter than a 250 Entour.

"It was perfect for aerial beams shooting up from behind the orchestra and didn't pose any hazard as it was cool to touch, so I could safely leave it in close proximity to the musicians, without fear of any comments about radiant heat.

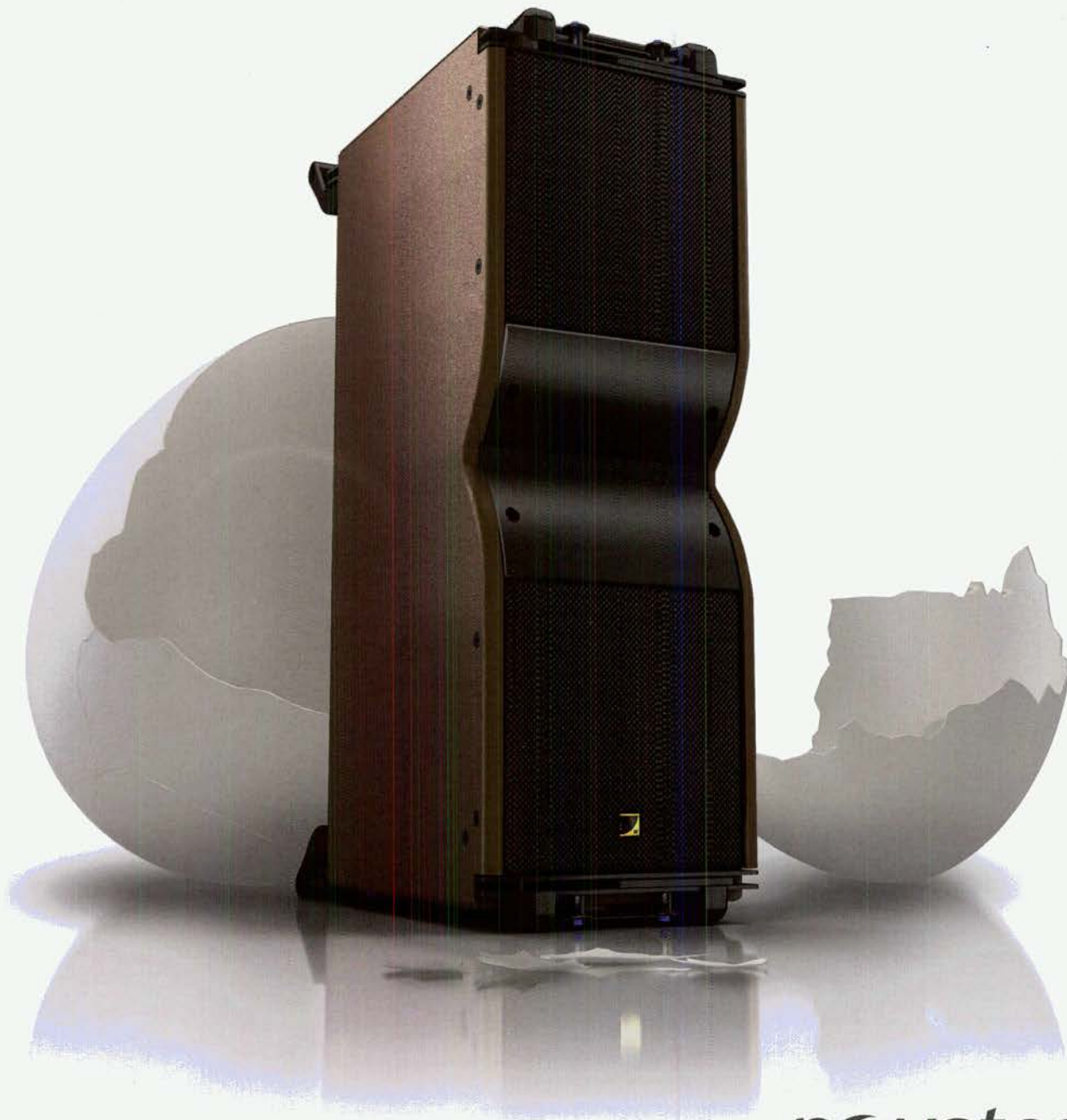
All in all though, the multi levels of fixtures on the floor, the ledge of the Choir Stalls and the pitched truss really helped to fill the air with strong colour and beam looks, and encompassed the orchestra nicely."

### Lighting Equipment List:

- Jands Vista 2 Byron with Outboard Wing
- 6x Mac 700 Spot
- 5x Mac 700 Wash
- 8x Robe Robin 600 LED Wash
- 6x Mac 250 Entour
- 4x Mac 350 Entour
- 4x Molefay Blinders
- 14x LED Par 38
- 2x Robe 400FT Hazers
- Perth Concert Hall's Standard Lighting rig of static theatrical fixtures and Bytesize 483 dimmers.



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# Guy Sebastian

has his Day



By Brian Coleman

Calmly centred in Guy Sebastian's ever-widening windstorm of success is his adept live sound engineer Anatole Day.

"Anatole's great! I've been working with 'Tolly' for years now. He's fantastic," Guy Sebastian told CX, adding, "Tolly just gets it right; he keeps it simple."

Simplicity, of course, is the understatement of excellence that we all aspire to.

It was during Guy Sebastian's Memphis Album tour of Australia in



“**Guy's really easy to work for. If he's upset about something it usually takes him about three days to tell you.**”

2008 with US backing musicians The MGs (formerly Booker T. & the MGs) that Anatole Day joined Sebastian's production crew on monitors.

Previously Day had been touring some 18 countries over a three-year period with the tribute band Queen: It's a Kind of Magic--finishing up in Portugal in 2006 to seek work in London after acquiring a 2-year work visa. London had been on the AIM (Australian Institute of Music) graduate's mind for some time, and his touring reputation gained him work on the summer festival circuit.

"When I arrived in London I called up the company we had used for Europe and they were happy to give me a gig as I knew their gear and crew, and they knew I wasn't going to blow anything up! I got plenty of work doing the summer festival circuit there, doing monitors and

FOH for plenty of good touring acts. I learned a lot about festival touring," says Day.

After his 2008 stint on monitors on Sebastian's Australian Memphis Album tour, Day returned to the UK rejoining the festival circuit until the expiration of his UK visa.

"I returned (to Australia) at the end of 2008 and I started to work with Guy again, this time as FOH engineer and production manager. The tour managing side came with the next tour and has lasted since," says Day.

"Nowadays there is a lot more responsibility on sound guys because of lot of them are taking on that dual role of tour managing," says Sebastian.

"It's not a huge market here (Australia) where you can be on the road non-stop in stadiums and theatres all year round. It's hard sometimes budget-wise to have a separate tour manager, a sound guy, a lighting guy, and a foldback guy. A lot of the time foldback is even getting mixed from front of house. It's a lot more responsibility on Tolly but he does a great job," says Sebastian.

-----> Continued on Page 40



# DVA Digital Vertical Array



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Continued From Page 38

## On the road

When Guy Sebastian and his band toured earlier this year Anatole Day's duties included FOH Engineer for Guy Sebastian, Production Manager, and Tour Manager for the entire tour.

"That's basically the order I like it in," says Day, adding, "Front of house is what I like to do because there's an artistic outlet in there. The

natural progression was to become Production Manager because I could spec the gear I wanted, and then it kind of fell on me to be the TM (Tour Manager) as well," says Day.

"We're basically travelling with four guys.

We've got 2 back-line techs: Marc Dowell-Hentall (first half of tour), Cameron Batten (second half of tour); and then there's monitor



engineer Justin Harper and lighting engineer Stefan Wronski, and myself," says Day.

Day welcomed the chance to revisit the intricacies of Digidesign's Venue Profile console on the Australian tour.

"I hadn't used it (Venue Profile) a lot, but I was eager to use it on this tour because of the opportunity to learn some of the tricks, which I hadn't had time to discover before. When you're a walk-in operator it's usually all set up and you just play with the surface layout and never really get the opportunity to go any deeper. So this

tour was a good opportunity to play with some of the plugins etcetera," says Day.

From day one Day basically operated the Profile without a specific Guy Sebastian show file, but as the tour went on he effectively created and used his own show file and plugin list.

## The other Day

"I started playing drums when I was 16; I always wanted to be a musician. The engineering side of it came about because I needed to

Continued on Page 42

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-----▶ Continued From Page 40

make money--unlike playing where I just spent a lot of money," says Day.

When Day graduated from AIM at the top of his class in 1997 he began studio work but soon came to realise that there was a void of studio mixing opportunities in Australia.

"It became quite apparent that there was a lot of live work and not a lot of studio work. I used to work almost every night just doing little pub bands. I basically started off doing band competitions really," says Day.

up there (Guy Sebastian, Carmen Smith & Gary Pinto) have amazing voices. And Guy's really easy to work for. If he's upset about something it usually takes him about three days to tell you," says Day.

"Obviously you want the vocal up there because that's who they've come to see. But because audio's quite psychosomatic, I want the instruments to be sitting in the mix at such a level that when you look at them they becomes more obvious--seemingly louder. I don't necessarily

able to hear them all, and I'll also compress the kick drum. But with vocals, when they go quiet you want them to be quiet, and when they go loud you want them to be loud. It's a fine line, and all these digital consoles are different in their compression".

## Consoles

"On my spec I usually say that any console is fine. On an analogue desk I'll specify 6 channels of compression, which covers bass, kick drum and vocals. I don't spec any noise gates because I don't want to lose any of those subtleties. Then I'll spec a couple of reverbs and a tap delay. Usually a Yamaha SPX 990 for reverb; they're nice.

"Sonically I like the Yamaha PM5D, but for ease of use I like the M7. The M7 is a lot cheaper and easier to find. So if you spec an M7 you'll probably get it. And it takes up a lot less room than the PM5D, which is a lot bigger. I'll even settle for an LS9 if I'm squashed in the corner of a room somewhere," says Day.

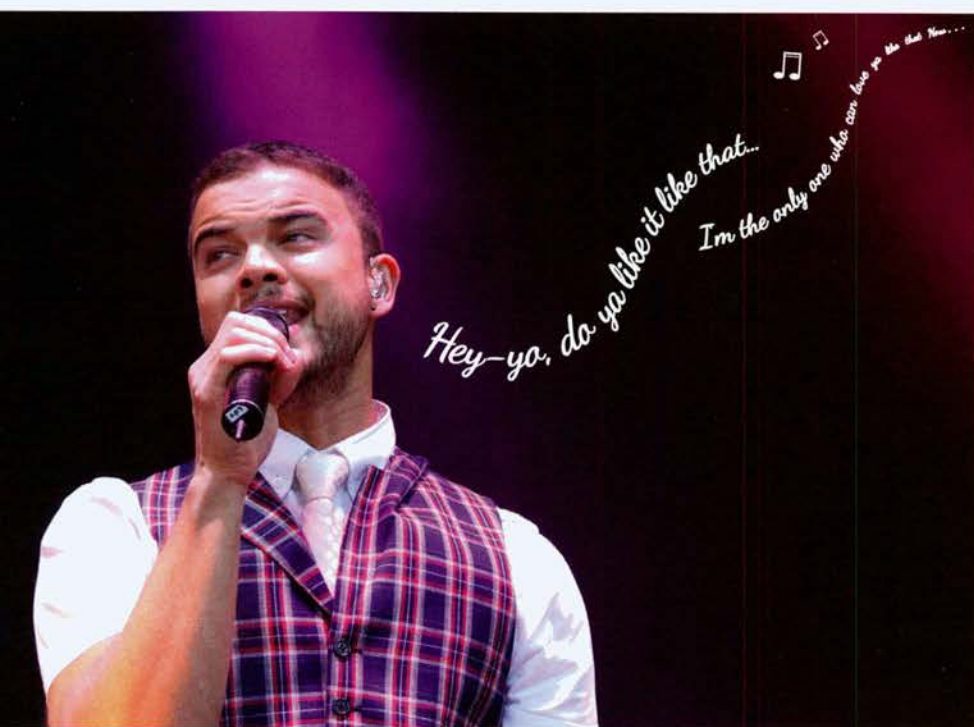
## Monitors

"I really only have Guy and the two BVs on in-ears; the rest of them are on wedge monitors because they're more used to playing quite close together and having that bigger stage sound. They (the band) don't really like in-ears. The BVs really have the in-ears to get a little more clarification out of the vocals.

"Guy does have everything in both the in-ears and in the wedges. Guy's quite different in that he has almost identical mixes on the floor and in the in-ears. You can't really get the same feeling out of in-ears as you can in wedge monitors. You lose all the bottom end. You can get a pretty good representation because they're so close to the ear drum but you never really get the feeling with just the in-ears," says Day.

## Mood lighting

"I've got a couple of lighting guys that I use. I'll usually have a chat to them and see what they're comfortable with. My guys have a similar attitude to me regarding technology: basically we'll use



## The mix

"Tolly's a drummer and he pulls a great drum mix," says Sebastian. But whilst Sebastian acknowledges that Day has a strength in mixing drums, this expertise is far from lost on vocals and instruments, however Day exhibits a certain humility here.

"I'm very lucky that all three singers

turn up solos because the attention is focused there anyway. If it's sitting in a nice mix you don't really have to; and these musicians are so great they just know how to tweak their solos slightly. If you get a good balance the attention should be drawn to whatever's happening at the time and you automatically hear that a bit louder anyway. If you can't then there's probably something not quite right with the mix," says Day.

"I don't use a lot of compression on vocals because it tends to suck the life out of it. I try to stay dynamic, and Guy and the two BVs (backing vocalists) are very dynamic so I'm not compressing them a lot--at the most maybe 4db. I'm compressing the dynamic range of the bass guitar because some notes are much quieter than others and you still want to be

**“I don't use a lot of compression on vocals because it tends to suck the life out of it.”**

anything that's out there - if we don't know it then it's a chance to get our hands on it and learn about it," says Day.

"I love it when a lighting tech knows what is musically going on and thinks about mood," muses Sebastian. "At a lot of my shows I'll just throw stuff in or I'll just do a musical section where we adlib a bit and there's a lot of atmospheric stuff going on and we'll just build it up. It doesn't work well if the lighting guy isn't there building it up with you. He's just as important as the band members," says Sebastian.

Stefan Wronski has a 'busk it' page specifically for these moods.

"If the band start to adlib or play a new song, which I haven't programmed a page for, I can grab this 'busk it' page and there is enough on it for me to busk my way through once I get a feeling for what's going on," says Wronski.

## Sound checks

"At the arena concerts we have the time to do a decent sound check, and we have an hour to pull the mix up," says Day. "But with concerts where there are other bands on before us, all we do is a line check where basically you start at the beginning with the kick drum and work all the way through to the last of the vocals; I've got my backing vocals at the end. We just go over every single mike where I just PFL (pre-fade listen) on the console with headphones, and Justin (Harper) on monitors will do the same. We know we're going to be 90 percent there because we've usually got it from a show the day before anyway. As long as we're hearing everything coming down the correct channel then we know we're in the ballpark."

## At the end of the Day

Guy Sebastian understands the

complexity of audio engineering; his studio prowess is well known and respected in Australia and the US.

"Over the last couple of years in the States I've done small gigs like hotel cafes where I've had to do my own sound, which was kind of difficult. I would EQ and tune the wedges and get it so that we could hear ourselves on stage, and also so that there was a decent mix. Only now have I got a sound guy and a tour manager over there.

"Mixing a live gig is not easy, and it varies from room to room. I've worked with other engineers and I've always had 'comments' from family and mates who are musos and engineers.

"But with Tolly I've never ever had any of my relatives or friends come up to me and say that the mix is terrible - ever," says Sebastian.

*There is a lesson or two in all of this!*



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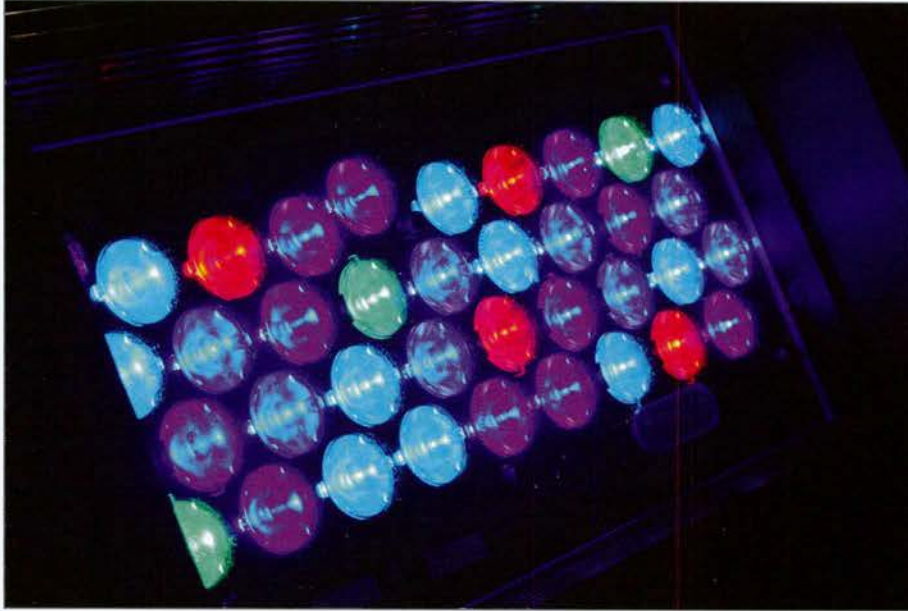


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**NEUTRIK**

## ETC FIRE & ICE

Theatre often calls for loads of deep, saturated colour. ETC now answers this cry.



one show my mate once did, each interval).

These fixtures aren't for everyone. There are a lot of applications where other luminaries will be better suited. But where they will shine is in the theatre and opera markets, where not only the cost savings but also the quality of the light will see them shine.



### By Jimmy Den-Ouden

Fire & Ice are a pair of LED fixtures from ETC, designed with the sole intent of providing the deep saturated colours often required in theatrical applications. Fire is designed to produce warm colours, and Ice does cool ones. There is a bit of crossover between the two, the mix of LEDs is just different. For instance, Fire has many more red LEDs than Ice does.

The fixtures don't actually ship as a pair - you just order whichever one you need. In reality you'd probably order more than just one. The thing which is most immediately cool to me about these fixtures is that you can treat a whole batch of both Fire and Ice units as one fixture with 8 DMX channels. The fixtures have the same DMX channel allocation, and just skip the channels for which they have no corresponding LEDs. So hang your rig, program your 8 channels and be done with it.

The units themselves are compact and pack a mean punch for their size. Just like nearly every other thing I've looked at lately, power input is on Neutrik PowerCon, though in this case there is no loop through.

DMX input and loop through is via 5 pin XLR. Setting the address is done via simple up/down keys which you actuate with a small pointy thing. Readout is three digit LED which fades after a period of inactivity. There are no menu options or indeed any configuration choices to make beyond addressing.

### Solid

The housing is nice and tough without being overly heavy. An arrangement of slots allow the various frost and diffusion filters to be inserted into the beam, and these lock in place with a rotatable metal plate on one end. Firing up the fixture, we liked the output. The colours are everything you'd expect from ETC, especially with their recent acquisition of Selador in mind. The in-built cooling fans generate a negligible amount of noise and really these are very usable fixtures.

The benefits here are pretty simple. Less power consumption, less heat, and all the good stuff which goes with these. We figure the output from one Fire or Ice unit to be roughly equivalent to a pair of 64 cans running the same colour. The big difference is that you can kiss goodbye the notion of replacing the gels each show (or in the case of

### What & Where

**Brand:** ETC  
**Model:** Fire & Ice  
**RRP:** \$2400 inc GST  
**Ice:** \$2400 inc GST

Online readers click [HERE](#) to see the **GEARBOX TV** review of this device!

**Product Info:** [www.etcconnect.com](http://www.etcconnect.com) **Distributor:** [www.jands.com.au](http://www.jands.com.au)



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Getting the content right is critical

## CHRISTIE MICROTILES DIGITAL CANVAS

How many pixels would you like?

By Jimmy Den-Ouden

Perhaps the more relevant question is how many you can afford, since that's ostensibly your limit with the MicroTile system.

MicroTiles are a modular LED DLP rear projection based display system. You can stack and join tiles to form any shape you can imagine, with the only real limitations being those of budget and the laws of physics. Each tile is 408(W) x 360(H) x 260(D) mm. Each tile draws 130W so even a large wall uses relatively little power.

There are a few key things to know about LED DLP, the first of these being that it's extremely bright. 800 NITS in the case of MicroTiles. The MicroTiles are specified at 65,000 hours run-time till half-brightness - that's about 7 years if you're running them 24/7. It has excellent depth of colour, and of course being rear projection technology it works extremely well in environments where ambient lighting levels are high.

Each tile has a native resolution of 720x540 pixels, and each time you add tiles the resolution of your canvas increases. The system requires an "ECU" to control the tiles and tell each tile what to display. You can run up to 6 tiles per ECU if you want full res, or more if you don't mind sacrificing some pixel tinyness.

### Big Lego

MicroTiles sort of assemble like a big Lego set where all the pieces are the same. The assembly process is admittedly a bit fiddly, but it's worth taking the time to get it right, the consistently minimal 1mm gaps between tiles being the payoff. Each tile clips to its neighbour on top with a simple spring clip - this bit is easy. Then the front faces attach with two screws through the mullions. A bit fiddlier. Then the next row goes on top, and each tile attaches with 3 very long bolts into the tile below it. Finally the projection screen surfaces attach with magnets into the tiles. Getting the first row right is really important, because without this everything else will be

out of kilter.

Once the wall is built, hooking it up is pretty simple. Each tile has an IEC power input, and a pair of video inputs. Video feeds in on a connector we've never seen before - it sort of looks like a lopsided HDMI plug. A standardized connector would have been good, but at least the proprietary ones have a locking clip. The video feed originates on the ECU, daisy chains through each tile, and then returns to the ECU.

This works as a redundant path so if you lose a link you don't lose the screen. Clever.

Upon powering up the canvas it's time to map the content to each screen. You do this by switching it on then going off to make a nice cup of coffee. Each tile has IR ports on the sides, top and bottom and it uses these to get to know its neighbours



MicroTile with screen removed

as well as figure out its place in the world. In other words, the tiles auto-map. The only time this won't work is when you have gaps in the wall because you've built some really funky screen configuration. Sorting this out isn't hard - there's web based IP interface which you access from a laptop attached to the Ethernet port on the ECU. If you have problems with a wall, the folks at Christie can access diagnostic info via the same port - you just need to hook it up to the net and map the right ports to the ECU's IP address.

Speaking of problems, we didn't have any. But if we had, we wouldn't need to tear down the wall to fix them. We wouldn't even need to go behind the wall - save for the cooling fans every part of the tile can be serviced from the front. This is a really smart move and makes this technology very install friendly, especially in situations where access is problematic due to height and such.



*Ben from VRS builds the screen while Jimmy interferes*

-----> Continued on Page 48

# Roland

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-----> Continued from Page 47

## The verdict

We ran 14 tiles off one ECU and couldn't see or make out individual pixels even when standing directly in front of the wall. That's pretty impressive stuff. We had a Mac Mini feeding in demo content from Christie, and seriously it looked stunning. We used the tiles as a background for our Gearbox show and I had to dial the output down to 15% because anything more than this was too bright for our cameras and studio.

This technology is bright enough and the colours rich enough to make it engaging from a distance. There are a lot of screens out there which can do that, but the difference with the MicroTiles is that when you get up close the image still makes sense. You simply can't get that on a screen with bigger dot pitch.

The biggest challenge with MicroTiles is not going to be anything to do with the install or setup of the system, it's going to be finding content of sufficient quality to take full advantage of the display. The product is a massive win for the

### What & Where

**Brand:** Christie Digital

**Model:** MicroTiles

**Pricing:** Around \$5000 per tile in our test configuration, plus the ECU.

#### Product Info:

[www.christiedigital.com](http://www.christiedigital.com)



#### Distributor:

[www.vrs.com.au](http://www.vrs.com.au)



Online readers click HERE to see the GEARBOX TV review of this device!



Simple build and tear-down



The back of one MicroTile with a pile more sitting behind

install market because there's nothing else like it. Currently there's not a wall for hire in Australia, but given time this may change if the production market wants it enough.



Our test canvas in "skyscraper" layout

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## SOUNDCRAFT SI COMPACT

A 16 channel digital audio mixing console from the conglomerate that includes Studer



on a digital console with the Spirit Digital 328 disaster. It didn't work very well, and certainly didn't sell very well either. But it got one thing sorted, and that was that you need to have a rotary control for all the channel strip functions, WITHOUT messing around on screen.

Speaking of screen, the small touch screen on the Si is not essential for operation. Which means that you should not be head down inside the screen while mixing your show, like we see so many engineers doing these days. Get out of that screen, kids! Head up, watch the stage, and mix by feel. Si will let you do this more effectively.

Gosh I like having the 48v phantom switch on the front of the console, instead of lurking in a screen somewhere. Likewise my noise gate and compressor controls all there.



Rear panel



Eq stage

### By Julius Grafton

A lot has changed since I was Soundcraft Dealer Of The Year in 1986. Back then we could not get enough Soundcraft 500 consoles, and had to dabble in strange turf by ordering some Soundtracs M Series instead. This was the start of the big live console era, in 1980 12 channels were regular and 16 were a lot. Then 24 channel consoles were routine, with 32 a lot. By '86 we wanted 40 inputs.

Soundtracs went on to become Digico, and only Soundcraft and Yamaha remain as major brands from those days.

Now Soundcraft and Studer have a console format to cover every need with the release of the baby Si Compact. Jimmy and myself spent an enjoyable afternoon here at CX HQ poking and prodding the little Si to see what we liked and what could be improved.

Did I mention how sanguine this life at Chatswood has become? Now we venture to HQ sometime around morning coffee time. Steve tends to arrive first, then Jimmy will emerge for the first coffee of the day.

Les Bishop wanders in and out, and all kinds of industry folk drop by to sit on our lounges or smoke outside. Very unlike our strictly timetabled life at the Rydalmere campus, which

was too far west to attract visitors.

### SMALL MIXERS

90 percent of all audio tasks need 16 or less inputs. Take the average band with four vocals, four instruments and a set of drums. Easy fit on 16 inputs. So why does the Si only have 14 faders on the front? This flummoxed me for a mo.

On back are 16 XLR inputs each with a phantom LED to show whether you've got 48 volts enabled. I like that, a lot. Under are 16 XLR outputs plus two sets of stereo inputs on 6.5mm jacks which makes life easy for inputs from iPods and such.

The 14 faders have two pages, so IN B gives me XLR inputs 15 and 16, plus four stereo inputs. Soundcraft have an incredibly sexy fader glow thing happening, so when you choose the B inputs, your eyes tell you that the six faders on the left are the ones to use because they are all lit up.

So because of all this we actually have 16 mono and four stereo channels at input, and 16 outputs that can be made up of auxiliary sends, main outputs and matrix outputs.

### GETTING AROUND

I think the digital console user interface has settled down now, after some very strange ideas. Funny enuf, Soundcraft's obsolete Spirit brand pioneered the 'one channel strip' idea

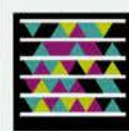
### What & Where

**Brand:** Soundcraft  
**Model:** Si1 compact  
**RRP:** under \$10k

Online readers click HERE to see the GEARBOX TV review of this device!

**Product Info:**  
[www.soundcraft.com](http://www.soundcraft.com)

**Distributor:**  
[www.jands.com.au](http://www.jands.com.au)



And of course all the EQ is represented without button pressing or find and seek. There is even an output delay control, and you can also delay any input. On this subject, the control is properly weighted so that one entire turn only represents a fraction of the available delay, meaning you can't oversteer the thing. To get the maximum 500 milliseconds of delay (half a second), you do a lot of knob turning. Which is good.

## BUS TIME

Fourteen bus buttons make an immediate 'send on fader' function, and the fader glow turns green to remind you that the faders are now controlling level to the one selected bus.

Hit on the GEQ LO or Hi button, and zap - the faders go red, a centre detent (click) at the middle, so that 14 faders operate the low end of the third octave output equaliser on the bus, and then by selecting GEO HI they switch to control the other 14 equaliser frequencies. Intuitive! So rather than a rack of - say - four equalisers, the Si has an equaliser for every output.

There's four Lexicon effects processors too, with a TAP button for each one. At this point, I should mention we did this whole review without having to reference the users manual. Which is a good thing.

So what's not to like? On screen there is a patch option for insert points but these don't actually exist on the baby Si, so there is no obvious multitrack recorder hookup interface. Also no multitrack recorder software bundle either, something that is becoming standard with some brands, and soon we guess an essential offering.

The boot time is longish, at 1 minute and 12 seconds. But we always use a UPS (uninterruptable power supply) don't we? Don't we? The BNC desk light socket on the front is both fragile and ugly, but I guess there is no space on the back for it.

The USB socket had me thinking maybe there are multi-level access permissions, which is a major asset when I mix on a Yamaha desk as it prevents the space cadets from using the EQ or effects when I'm away. But Si does not have this feature - instead, using reverse logic, I figure that the easy to load and recall show file feature means more experienced engineers will simply load and reset the Si each time, thus rendering reset anything done beforehand.

So at less than ten grand, there is a lot to like here. You can certainly do this mission for less money with some other brands (think PreSonus) but if you want the warm feeling of the Soundcraft interface, and the fab useability, look no further.

α



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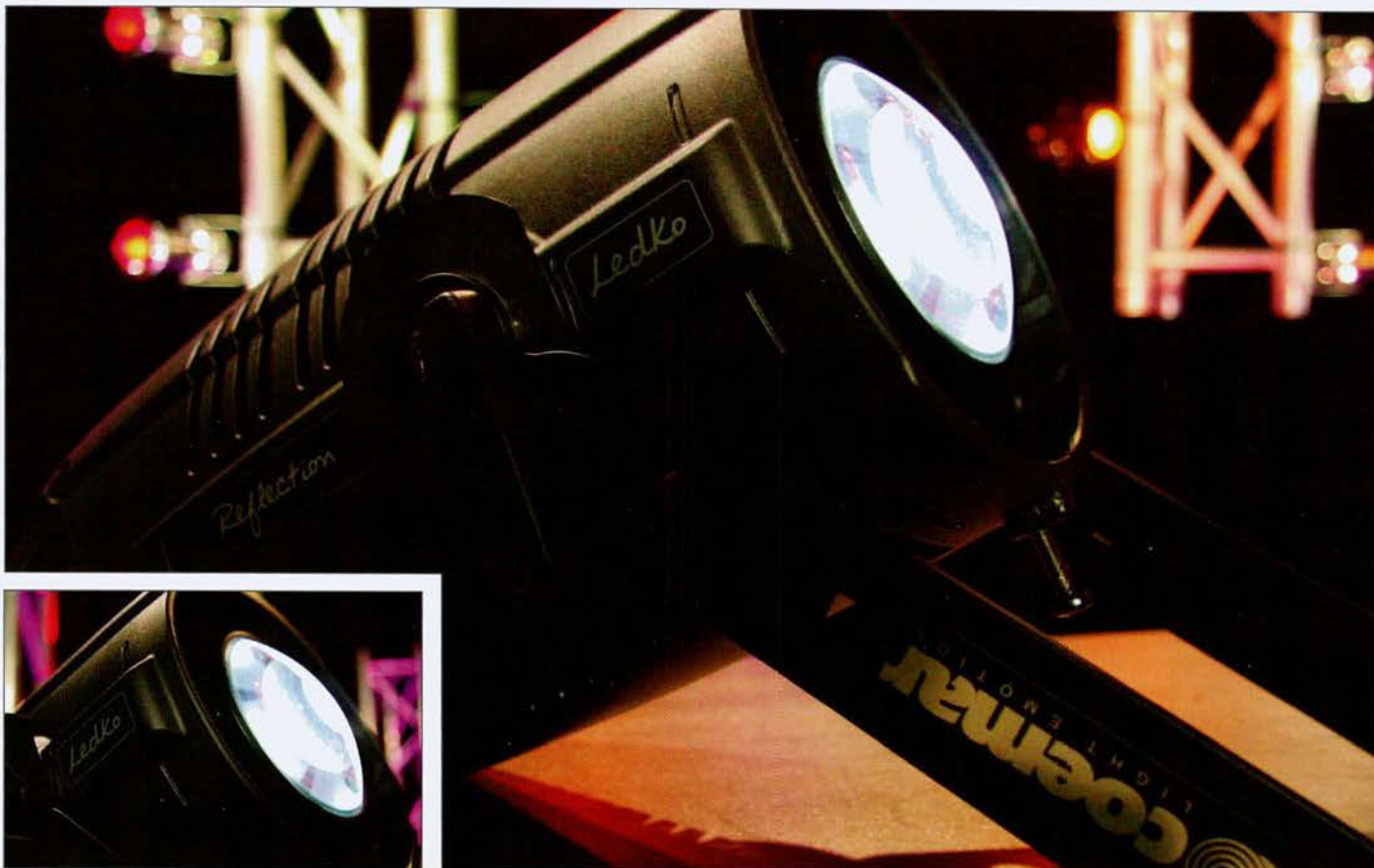


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## COEMAR REFLECTION LEDKO

Occasionally we get a chance to play with something very new. LEDko is a LED profile spot that replaces a 650 watt profile - and does a whole lot more!



### By Jimmy Den-Ouden

LEDko is the term given to a new range of LED fixtures from lighting manufacturer Coemar. Coemar has a long history in theatre, such that I remember using their fixtures as a youngster. LEDko is evidence of how good a product can get with some experience backing it.

The LEDko is a 2 part fixture - there's the 120W LED "lamp base" and a selection of lens tubes which can be attached. The base is available in 3 models: 3200 does white light at 3200 degrees Kelvin. Variwhite gives you a white light in a range of colour temperatures between 3000 and 7000 degrees Kelvin. The FullSpectrum model gives you 4 colour mixing. We spent a lot of time playing with the Variwhite unit since this was the most interesting to us. The fixture produces light output

equivalent to a 650W profile fixture. But unlike a 650W profile, it operates of a meager 198.6 Watts (or roughly a third of the power). So it starts to save you money the second you switch it on.

Coemar has been quite clever with their lens system. The unit is available with a fresnel or PC spot lens tube - these are made of plastic so are relatively lightweight. They also have shutters incorporated, which is something you won't commonly find on either of these lens style lamps. This in itself opens up some new options for designers. The third lens option is just a tube, designed to accept ETC Source4 lens assemblies. So for anyone who has invested heavily in Source4, the investment doesn't become redundant. Now you just have another lamp option.

The fixture has PowerCon input and loop through, and the recommendation is that you can

cascade up to 8 units off one power feed. DMX is delivered and looped via 5 pin XLR as it should be. The setup menu is a 4 character LED display with 4 menu buttons - all pretty simple to use. The 3200 degree unit operates off a single channel, the RGBW uses 4 channels and has a selection of colour mixing options. The Variwhite unit uses one channel for intensity and a second for colour temperature as well as strobe effects. We think there are some other DMX options for some of the fixtures, but the user manuals have yet to arrive in the country.

The quality of light out of the fixtures is good. Good enough that you would have a hard time picking the difference between the LEDko and a conventional tungsten fixture. LEDko can even fade like a tungsten fixture if switched that way, and this is what allows it to integrate seamlessly with tungsten units. There are selectable dimming curves, so on the Variwhite



LEDko with ETC 90 degree lens attached



Ever seen a PC or Fresnel with shutters before?



Back panel - PowerCon & XLR in & loop throughs

model you can even have it change colour temperature as it dims. All this braininess does come at a price - LEDko is quite heavy for what it is. It feels heavier than a normal 650W profile - not by much but it is noticeable.

### Cool it

Or just don't bother. LEDko doesn't generate any appreciable level of heat. This means several things: reduced running costs for building aircon since you're no longer countering the heat generated by fixtures. You can also focus the unit even when it's been on for 10 hours

with absolutely no danger of burning yourself. Printable gobos require much less frequent replacement.

The LED lightsource is rated for around 50,000 hours so there's no lamp replacement cost to worry about. In 50,000 hours of runtime from now the next generation of light sources will no doubt be refined enough to consider upgrading anyway.

Anyone selling these new era digital

### What & Where

Brand: Coemar  
Model: Reflection  
LEDko  
RRP: \$3000.00

Online readers click HERE to see the GEARBOX TV review of this device!

Product Info:  
www.coemar.it

Distributor:  
www.prg.com



LED lights would probably have a cost benefit analysis that doesn't just show lamp replacement and electrical savings. You would be wise to put a cost on labor saved and on OH&S risk reduction.

For now though, LEDko combines everything we love about LED with everything we love about tungsten fixtures. We think it's an epic win for designers, riggers, lighties and even the beancounters.



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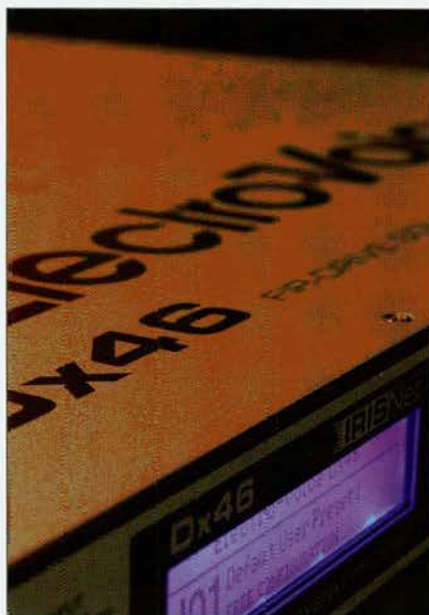
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by HARMAN



By Jimmy Den-Ouden

Talking about speaker boxes seems like a weird place to start, but stick with me for a minute here. Way back when I started out in the industry, things looked a bit different to now. Nexø, d&b and some of the now boutique manufacturers hadn't really impacted the Australian scene. "Back in the day" you had EV, JBL, Freedman, Aussie Monitor, or some weird niche gear like CerwinVega!

Some of these brands have since fallen by the wayside, yet EV (along with JBL) has stuck around. Perhaps this is a measure of their support. I know several hire companies still using everything from SX200 boxes through to Mongoose and EVX cabinets. The thing about EV gear is that it's predictable, and extremely challenging to destroy. If you do succeed in killing it, chances are it can be fixed quite readily. It's pretty impressive for a manufacturer to have 15 year old cabinets still in wide use when technology has since advanced so far.

The DX46 is kind of a nice illustration of an old dog learning new tricks. It brings together new technology and the build quality for

## EV DX46 SPEAKER PROCESSOR

EV has always provided plenty of "bang for buck", and the DX46 is no exception.

which EV is renowned. The DX46 is a 2 input, 6 output speaker processor. Perhaps not so radical, there are plenty of them around. But the DX46 has hit the market amidst the second generation of these processors, maybe even the third. Not only are there input delays, but also delays on each output which allow you to time multiple elements of your system together.

This means it incorporates features like USB and Ethernet control options, and more DSP than you're ever likely to need in a unit of such capacity. You get all the EQ, delay, and limiting facilities you could ever want in a processor, along with EV's "FIR drive" crossover filters. Internally it operates at 24 bit 48kHz, although the AES/EBU input will accept signals at anything from 32 to 192kHz. There's an AES/EBU output, as well as a bunch of GPI trigger inputs. These allow you to recall system presets using simple contact closure interface, so it works for system integrators.

### Fully in control

Or not. A common request on touring riders these days is that the touring engineer "is to have full access to all system processing". But you might not want to put this much control over your speaker system in front of every operator - in these cases the DX46 allows you not only to lock menu options, but completely remove them from the front panel interface. Nice. It talks IRISnet, so it's compatible with other EV processing too.

Via IRISnet you can upload parameters for EV speakers and amplifiers. The DX46 then uses this data to calculate how hard the system can run, and implements suitable "TEMP" system limiting accordingly. Of course if you are using other speakers or amps, there is still a conventional peak limiting option too.

The DX46 sounds good. The FIR drive filters on each output allow for very steep crossover curves, the



ultimate aim of which is to improve phase linearity of your sound system. It works. So do the inbuilt signal generators, which offer a choice of white or pink noise as well as sine wave. Sounds like a small thing, but these are great for identifying & testing system components without having to fire up the desk.

Being owned by Bosch, you can expect local support for the DX46 to be up there with other EV products. Existing EV users will appreciate the 60 onboard factory presets designed to work with EV speaker systems. Dynacord users are not forgotten either - EV is closely related to Dynacord, so while you can buy the Dynacord version of the DX46 there's nothing to stop you just uploading the Dynacord presets into the DX46.

The software interface is good. We've used a few different processor interface software packages and this one is among the more sensible. It operates easily and responds quickly. Furthermore it's laid out in a fairly logical fashion, and we didn't have any difficulties getting it to sync to the DX46. Pricing on the DX46 is reasonable too. Maybe a little more than some of its competitors, but then again given it's an EV box, the expected life span makes it seem like a good deal to us.



### What & Where

**Brand:** Electrovoice  
**Model:** DX46  
**RRP:** \$2,999.00

Online readers click HERE to see the GEARBOX TV review of this device!

**Product Info:**  
www.electrovoice.com

**Distributor:**  
www.boschcommunications.com.au



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## ROLAND M-480 V-MIXER

We check out how the successor to the M-400 measures up...



*By Jimmy Den-Ouden*

The M-400 V-Mixer was really good, and we liked it a lot. So when we heard it had been replaced with a new model we were understandably keen to have a look.

A quick recap on the V-Mixer system for those not yet familiar with it: V-Mixer was introduced as an addition to Roland's Digital Snake product line, which started with the snake itself. V-Mixer gave existing users a new way to use their S-4000S "stage box" units for a relatively minimal investment. But a couple of little things meant it was kind of limited, which saw the M-400 land in a market all its own. The M-480 changes all of that...

### New kids on the block

Please welcome to the neighbourhood the Phantom Power and Pad buttons. Sadly omitted from the M-400, this has been rectified so now applying phantom is as simple as selecting the channel and pushing the button. It even lights up.

Moving in next door are another two rotary encoders in the PEQ department. The M-480 has a full 4 band PEQ on each channel and output, and you can choose from something like 9 different types of filter for each band. HPF is also available as an additional facility on each channel, as is delay on every channel.

There have been some significant additions to the DSP banks on the M-480, such that you can basically engage every process on everything everywhere all at once. But your mix might sound pretty ordinary if you do... The bottom line here is there's no blocking or processor bank sharing going on. The boot time is just on 5 seconds from cold to a mix-ready state. We can't think of another console which boots this fast.

Next up are the mix keys. These are basically the same, but you can now press pairs of mix keys to get to matrix mixes easily. We think you can even send a channel directly into a matrix if you're into that kind of thing. You still have 16 mix busses plus 8 matrix busses, plus Left/Right and now a dedicated Centre mix bus as well.

The main rotary encoder has changed a bit too; it now has the screen navigation keys surrounding it. There's a temptation to press the encoder in for the "Enter" function.



This doesn't work - the Enter button is below. Roland has resisted the temptation to change to a touch screen, which I'm fine with. The existing system works well. Things like the built in assignable spectrum analyzer, and USB 2 track recorder really make the console a winner.

Other things you'll need to dig a little deeper to find are the 12 full GEQs which are now available, along with 6 stereo effects engines. The M-480 features 48 mix channels just like its predecessor, but now the effects returns are additional to these rather than included. You can feed up to 40 channels into the system via each REAC port, or you can do 40 on REAC and 8 locally on the console. The REAC B port is now fully functional as well, and so from within the patchbay you can basically route anything anywhere in the system.

### Delineation

With their own personal monitoring



system and a 48 track digital recorder now announced, Roland has really entered the "turnkey solution" market. The M-480 is really the next logical step for Roland. Its feature-set surpasses that of the M7CL and even with a 40 input snake added, it's still 5 grand cheaper. And it still sounds good. None of this is really surprising, given the M-480 is a full generation newer (roughly 4 years represents a generation in digital mixing consoles by our books).

You don't even need a Roland Snake to use the M-480 - they make an S-MADI converter which will pull 40 channels off a MADI stream and convert it to REAC. So there's an upgrade option for existing digital users too.. The M-480 represents a significant upgrade in many ways and really sees Roland punch into a new sector of the market. And at the same price as the M-400 we reckon they've got a pretty good shot at it. Stay tuned for more interesting times...



What & Where

**Brand:** Roland  
**Model:** M-480  
**RRP:** \$13,995

Online readers click HERE to see the GEARBOX TV review of this device!

**Product Info:**

[www.rolandcorp.com.au](http://www.rolandcorp.com.au)



**Distributor:**

[www.rolandcorp.com.au](http://www.rolandcorp.com.au)



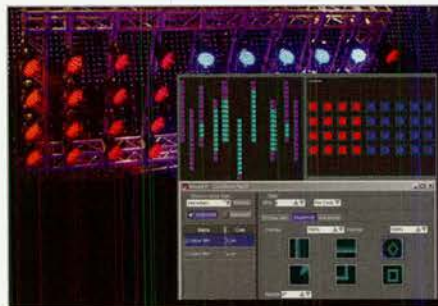
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**“Remember this isn't Lighting. We're talking about SOUND here..”**

## 100v Line Systems Part two

By Paul Matthews

Last month in Bread & Butter we took the side off Pandora's rack and peered inside at a strange world where there are no speakons, few XLR's and lots and lots of screw terminals. Strange hieroglyphics could be seen like "COM/70v/100v" and "Max load 42Ω" etc. This is the world of 100v Line - and we learned that basically it's all about being able to run speakers off amplifiers that are a long way away and connected by cheap, crappy wires.

The biggest myth out there about 100v line is that you can keep connecting more speakers and it doesn't matter. OF COURSE IT MATTERS you idiot! Just like lights on a dimmer channel, every speaker added to a 100v line system adds more load to the amplifier.

It's just that with conventional "8 ohm" sound systems we tend to measure these loads in OHMS when in 100v Line systems we measure them in WATTS - the idea being

that a 100w amplifier can be used to power twenty 10w speakers for example. This is how most PA contractors work out how much load they can put on an amplifier when installing a new system. The theory is that with the voltage considered "constant", the watts and ohms are relative - and you can refer to either one as a measure of how much load you're connecting to the amplifier - just like you measure how many 100w light globes you can connect to a 2.4kW dimmer in lighting world.

Measuring 100v line loads in watts is fine when you're specifying a new system. But measuring in OHMS is a far better way to go when you're troubleshooting an existing faulty PA system.

Before you reach for that multimeter - just hold on a bit. Remember this isn't Lighting. We're talking about SOUND here - not 240v, 50Hz AC power. Our SOUND can be anything from around 20Hz right up to 20kHz on high spec systems. The resistance of our speakers and transformers is not going to be the same at 20Hz as it is at 400Hz or 2kHz or so on - or for that matter at DC - which

is what your multimeter uses to measure "resistance".

In 100v line, we call resistance IMPEDANCE. It's still measured in Ohms - but it's measured using an AC signal - typically 200Hz or 1kHz tones. To trouble shoot and fault find your 100v Line PA you're going to need a proper IMPEDANCE METER in your toolbox before you even get in the truck. This can measure your load at typical PA frequencies to give you accurate figures.

So now we get the maths out. It had to happen sooner or later. The formula you 100v lineys have to remember is  $Z=V^2/P$ , where Z is our impedance in Ohms, V is the voltage and P is our power in watts. But don't panic. In our 100v line system we "assume" that the voltage is always 100 volts - even if the amp is just idling and putting out nothing at all. This is why you may have sometimes heard "100v Line" called a "constant voltage system". It doesn't mean there is a constant voltage actually on the wires. It just means we assume it is for our calculations. So in reality our formula becomes  $Z=10,000/P$ . That makes it easy at any stage to work out either our power or load just by swapping the subject of the equation so that  $P=10,000/Z$ .

Let's start by going back to the "8 ohm" PA systems we're familiar with in our venues and at gigs. In electronics they call this a "constant current" system - because we assume that each 8 ohm speaker we connect to our amplifier will draw the same current. So two 8 ohm speakers connected to one amplifier should draw twice as much current as one and make the amplifier work twice as hard - into 4 ohms instead of 8. In constant current systems we generally assume the resistance of the cables connecting things together

is either zero or "don't care". That's why super thick speaker cables are the norm for "constant current" systems.

So now let's set our load at 8 ohms on a 100v line system and see what happens.

$$P = 10,000/8 = 1250w$$

Wow! Now back in the swingin' sixties 1250w amplifiers were far and few between. But nowadays it's quite common in our industry to come across amplifiers designed to output this kind of power into 8 ohms. Such amplifiers can therefore (and sometimes are) used to drive a "100v Line" directly - with no transformer at the amplifier end at all. However most PA amplifiers have much lower outputs than this. The following tables are a very useful one for any tech driving off to service a PA system with 100v lines running out the rack.

### COMMON AMPLIFIER SIZES:

120W = 83.3Ω  
 240W = 41.6Ω  
 360W = 27.7Ω  
 480w = 20.8Ω

### COMMON SPEAKER OUTPUTS:

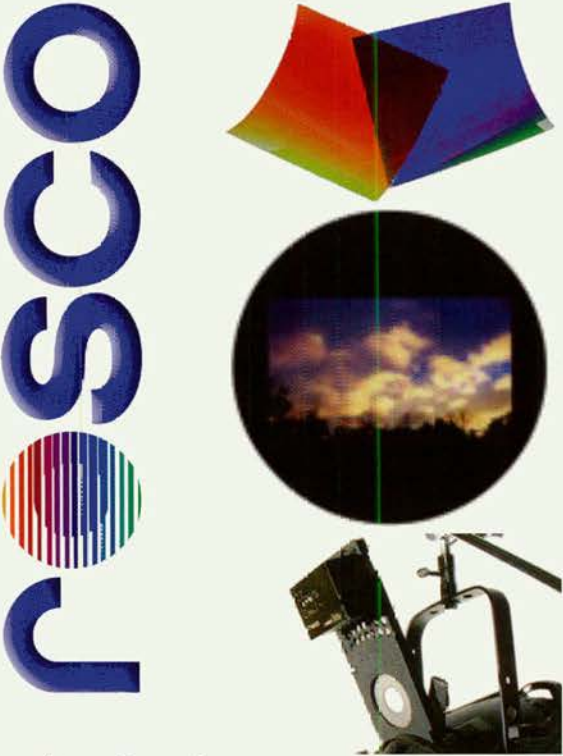
5W = 2kΩ  
 10W = 1kΩ  
 30W = 333.3Ω  
 60W = 166.6Ω

On a 100v Line system it is essential to get all these tapings correct if you want the system to work properly and not lose too much power in the long cables. Changing taps on the speaker end can sometimes seem to make no difference to the speaker sound output at all. However if you select the wrong taps then what you've done is essentially rob the entire system of power (not just the speaker you're tapping) because if the impedance of the loads drops too low then the cables themselves will end up using more power than the speakers. The volume gets cranked, amps get hotter, the system gets softer and eventually the inevitable service call will be placed.

So when you're called to a venue for the first time to service a 100v line system, the first thing you do is disconnect the speaker output from the amp, slap your trusty impedance meter across the wires and push "test". Immediately you'll have a better idea of what's wrong, especially if you more or less know what the impedance should be. If the amp is a 120w one and the meter shows 4 ohms then there's obviously a short somewhere. More often it'll be some ignorant builder, electrician or wag who has recently extended the system using 8 ohm speakers from the nearest Tandy store.

Either way it'll result in grossly unbalanced audio (i.e. some speakers blow your head off while others are very quiet) or depending on the age and protection scheme in the amplifier, possibly some blown fuses.


Next month we'll look at Amplifiers, Zoning systems and cabling methods.




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Continued from Page 62 ----->

to see if Uncle and Auntie were still waiting, I decided they weren't and jumped back in the car just as a very official looking uniformed policeman with a machine gun was approaching. "Sorry, sorry," I yelled as I started the car and whizzed off in a cloud of smoke.

I thought I would just follow the road I came in on, back to the freeway, but that was not to be, because at 4 o'clock all the roads in the centre of Barcelona become one-way streets, to cope with the rush hour traffic.

Unfortunately for me, the street I wanted had suddenly become one-way in the opposite direction! I had no choice but to turn around and follow it, hoping that it would be a ring road that ultimately led onto the freeway.

Sadly it didn't, and I kept going round and round in ever decreasing circles, in streets that got smaller and smaller. Eventually I came to a short street with a No Entry sign at the entrance, but I could see a freeway entrance at the other end of it. It was a tiny little street that actually had washing hanging across it, and as I cautiously drove along it old Spanish ladies yelled even more helpful driving advice at me as I pushed the car through their clean sheets and underwear!

Then, suddenly I was through it and on the freeway entrance ramp, and by a stroke of luck was actually going in the correct direction for Sitges!

When I finally arrived back at the apartment, I found that Auntie and Uncle had beaten me back by about 3 hours, just by hopping on the local bus when they arrived from London!

The next day I went down to the Sitges street market, when I was suddenly struck by an asthma attack. Maybe it was pollen or straw or a cloud of dried chicken shit, I'm not sure, but all of a sudden I was wheezing like there was no tomorrow.

I reached into my pocket for my trusty inhaler, but it was gone! Perhaps it had fallen out, perhaps my pockets had been picked by a fellow sufferer; I neither knew nor cared. All I knew was that it wasn't there.

A feeling of panic swept over me, which of course made the attack even worse. I had to find a chemist's shop somehow, but I couldn't remember the word for Chemist in Spanish. Passers by studiously avoided my gasps for help, shepherding staring children out of my path, obviously thinking here was another tourist overcome by a surfeit of vino ordinario, or whatever the Spanish call wine that is not quite bad enough to be used as vinegar. I can't say I blamed them as I must have looked a terrible sight lurching along with my backpack like Quasimodo in flared jeans.

I staggered along, leaning against shop windows unable to get any breath, panting my lungs out, wondering just what I was going to do and was this the end?

I stopped in a shop doorway and leaned against the door for a rest. The door suddenly opened and I fell inside. As I hit the floor I looked up at the shop sign, which said Farmacia. That was it. Spanish for Chemist!

I half walked, half crawled to the counter. The pharmacist stared at me as I leaned on the counter. What was asthma in Spanish? I thought. Here I am at salvation's door and I don't know how to get help.

EuroAussie came to the rescue with the first phrase that popped into my head.

"Mio no breatho" I gasped, and collapsed into a chair next to the counter.

The pharmacist looked at me quizzically.

"Can I help you?" he asked in perfect English.

If I had had enough breath left in my body I would have laughed.

He brought me some tablets, some water, and an inhaler, and when I was finally breathing normally he told me he was a locum from England working during the tourist season to handle the influx of English tourists who got sick. However he did compliment me on my 'mio no breatho' phrase, and said he was going to write to the British Medical Journal when he got back.

If he did so then this is the second time the story has been in print!



# uncan Fry

## AN INNOCENT ABROAD

A Barcelona Traveller's Tale

©2011 Duncan Fry

In the mid 70s I decided, as a dutiful son, to go and visit my mother in Spain. Tired of the cold wet weather of her native England, she had sold everything, grabbed her latest husband, and moved to Barcelona. She bought an apartment in the suburb of Sitges, overlooking the city on one side and the 1920's concrete banked oval racetrack (incidentally the only concrete speed bowl still intact anywhere in the world) on the other.

As I lay in the sun one afternoon, she said to me - Hey, can you go down to the bus station and pick up Uncle Ernie and Auntie Joan? They're coming in on the 2.30 bus from London.

Sure, where's the bus station I replied

It's down in the centre of town - just go down to the freeway and follow the signs. You'll find it easily.

Hmm. I didn't think it would be quite that easy, but always game for something different, I hopped in her Left Hand Drive manual Fiat 500 and drove off down to the freeway entrance, then followed the traffic. I think it's fair to say that I attracted quite a lot of helpful advice (or so I like to think!) from my fellow drivers, as I wrestled with the gears

and clutch and being on the wrong side of the road.

Normally tourists are in rental cars with a big Turista sticker on the rear bumper, special number plates, Budgeta or Avisio or Hertzico stickers on the rear window, and the locals give them a wide berth.

Not me though. I was in a beaten up local car with local number plates, and the other drivers probably thought I was just a local who couldn't drive very well or was drunk.

My mother was partly right about the signs, though, and even though I couldn't read them I could see plenty of signs with pictures of buses and arrows, and so I followed them.

However, when the lane I was in started to veer away from the 'Autopista', I suddenly realized I was in an express bus lane heading to lord knows where, in the opposite direction from downtown Barcelona!

Yikes!

Being a freeway (autopista) I couldn't stop, but had to keep taking every turnoff I could that looked like it would take me back in the proper direction. Sometimes they did, and lots of times they didn't.

After about an hour or so, and more by luck than good judgement, I eventually crawled along a small road that had a couple of signs saying 'Estaci6n de autob6s' in a few languages, luckily one of which was English. I looked at my watch as I approached the town square, and it said 3.59; almost four o' clock. Hoping the bus had been running late I parked the car wherever I could, then ran inside. I stopped an official looking lady in uniform and said "The 2 30 from London - has it arrived?"

"Si," she replied, "it arrive long time ago. All passengers gone."

Great. Just my luck. Looking around

**“The first phrase that popped into my head. "Mio no breatho" I gasped, and collapsed into a chair next to the counter...**

Continued Page 61 ----->



# Past, present & future

## Technology that delivers, for creative stage lighting



### Strand eS21 power, data and dimming system

Strand is proud to introduce the Strand eS21 Power, Data and Dimmer system – an affordable solution for today and tomorrow, based on Strand’s source control philosophy.

Source control delivers a simpler solution for the electrical system in your venue. Instead of kilometres of patch cable running throughout the space, all that needs to be provided is non-dimmed mains reticulation, delivering a far greener and cheaper solution due to the reduction of costly copper and the electrical losses generated by dimmed loads over distance.

Mix and match IGBT (insulated gate bipolar transistor) Dimmer, Relay and LED power supply modules to optimise the source of power for your lighting equipment without sacrificing performance. With source control, think less about the mechanics of how you get the light to work and more about what you actually want that light to do



### 24-channel WallRack

At a little more than \$ 40 per channel the WallRack series of dimmers from Strand offers a reliable, cost effective solution for traditional dimming applications, offering many features that are sure to surprise including the price!

The 24 channel WallRack is a great way to get a lot of dimmers into a small space, ideal when needing to fit a dimming system into a venue even when a allowance has not specifically been made for a dimmer room. Socket outlet panels are available to use a patch bay with the WallRack and RCDs are easily fitted as required.

To learn more about how these products could benefit your venue please contact your local Philips Strand Lighting dealer: [www.strandlighting.com](http://www.strandlighting.com) or Paul Lewis, Philips Entertainment: 0400 818 301.

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