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entertainment & broadcast

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- Show Electric classes
- Lightmoves buy LOW
- Phaseshift changes
- Woody, Smithy & cancer

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α EDITORIAL

6 Editorial

α NEWS

- 8 Tafe Colleges cancel courses
- 8 Show Electrics Master Class
- 9 Light Moves return to Sydney
- 9 Phase Shift restructure
- 10 Ian Woodhouse • Neil Smith

α NEW GEAR

- 14 New Gear: Offerings from Radial, Klark Teknik, Philips, dbx, and more!

α FEATURES

- 22 NEXO STM Launch
- 28 Questions to ask when choosing a college
- 26 Listen Here! Mixing fatigue!
- 30 Install Advisor: raising the bar on sound & video

α GEARBOX

- 38 Soundcraft Si Performer
- 42 Robe ROBIN DLS Profile
- 44 Sony BRC-H900 PTZ HD Camera
- 48 TC Electronic BMC-2 Broadcast Monitor Controller
- 52 Dynacord TS400 & PSD215

α REGULARS

- 12 WHAT IF – Group stops and why they matter
- 36 The Mill Report
- 54 The Maiz on angry birds and stuff
- 58 Road Skills with Cat Strom
- 66 ACETA & Education
- 68 Biz Talk: Mergers
- 70 Event Safety Alliance – how definitions affect you
- 73 Duncan Fry

4 | www.juliusmedia.com CX77



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22

NEXO
STM
BIG LAUNCH

58

ROAD
SKILLS



38

GEARBOX
Soundcraft
Si Performer



44

GEARBOX
SONY
Camera



36

THE
MILL
REPORT



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CX77 DEC/JAN 2013. ISSUE 77 . ONLINE EDITION

ANNUAL REPORT

IT'S DECEMBER, SO IT'S TIME TO REPORT TO OUR STAKEHOLDERS - AND THAT MEANS YOU!

We are a broad church at CX.

Studio: Andy Stewart.

Broadcast: Maizels with help from Collis and Bishop.

House of Worship: we have several committed church goer's in the team.

Tech: Jimmy.

Contracting: yes we can solder!

Theatre. Legend curator: Mark Taylor.

Events. CX-TV: Cameron Glendinning.

Live gigs: Cat.

Web: Glue Digital.

Social media and new product editor: Jamie Horsfield.

Then there is the Roadcrew department and business topics behind your business: that's me, Julius.

Also at CX of course is the guy who makes it be: Steve James. Thanks to all our cohort, including Tania on accounts, and my driver: Kandii.

It's with considerable pleasure that we rolled out CX Magazine on Apple Newsstand last month, two months later than planned and thanks to the tenacity of our Creative Director Lee Romer. She has worked for the great advertising guru Singleton, and knows the design ropes. Thanks also to Smit Raturi who came to the code writing rescue when Apple rejected us a second time.

We spent a lot of cash and even more energy getting Newsstand up. If you live on Android, our regular digital edition at cx-mag.com will download you a fresh PDF to read offline anytime. But for now, Apple Newsstand is the premium magazine destination which is why just 32 other Australian Magazines were there when we joined. Because Apple make it hard. Because once you see it, you understand.

Our sales have grown, at a time when traditional media is in trouble. The Roadshow has also become firmly established as THE industry summer networking event and, we think, the best and biggest educational offering possible.

CX-TV is now by any measure the most successful industry ipTV channel – the more content we place online for your on-demand 24/7 viewing, the more traffic we get. Have a look, our videos play on any device with reasonable internet bandwidth. www.cx-tv.com

CX has consolidated this year, added new writers, expanded the page count, and developed our content. This will continue – we have some new CX-TV initiatives around the corner. Also coming will be a category killer Android edition of CX, which will take us to four monthly editions – print, e-zine, APP and Android. These are all subtly different, with a lot more to come now that our creative director Lee Romer has our measure and mojo!

That's CX for 2012, this time next year we hope to have ticked off a whole lot more! Keep the conversation rolling!

- Julius



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NEWS

CX INDUSTRY NEWS

TAFE COLLEGES MAY CANCEL TECH COURSES

Funding removed so course fees skyrocket

2013 will see the result of various State Governments imposed funding reductions on TAFE colleges, where courses previously costing between \$50 and \$1,000 will now cost more than \$10,000.

Some TAFE technical courses from CUE (entertainment, soon to be CUA) and CUS (music) training packages are reasonably well regarded by employers – with CX analysis showing better employer rankings than most private college courses from large providers like SAE, JMC and AIM.

“We are facing the prospect of massive funding cuts next year and having to compete with the private institutions (and their advertising budgets) to remain viable”, says Stephen Marquis, a Course Co-ordinator of Technical and Sound Production at Sydney Institute.

CX understands most TAFE colleges are currently enrolling students who are encouraged to obtain FEE HELP, a government training loan similar to University HECS HELP. Before now TAFE relied on government subsidies to keep course fees very low.

TAFE professionals like Marquis are only too aware of

the glamorisation of some courses, usually perpetuated by private college advertising. “90% of our clients come into our course wanting to be “producers” – very few understand what is actually involved in doing that. We attempt during their time here (at Sydney Institute) to impart the skills they need in all these fields and also to diversify their outlook on where they can take their skills, particularly with regards to live sound and sound for film and TV.”

“We offer the Technical and Sound Production courses. As course co-ordinator, I try to design our subject offerings around 3 main streams – live sound, studio production and computer based production. At the Diploma level, we also offer units in composing and sound for film.”

There are 23 colleges (TAFE and private) offering The Diploma of Sound Production (CUS50209) across Australia but only 14 colleges offer the Diploma of Live Production, Theatre and Events (Technical Production) CUE 50303.

TAFE funding cuts can only reduce the number of courses offered.

*** CX hosts a National Industry Training Summit at CX Roadshow in February.**

Details at www.cxevents.com.au

SHOW ELECTRICS MASTER CLASS

First time taught in Australia

CX Roadshow will host national Show Electrics classes by Austin (TX) based expert Richard Cadena next February in six states.

The half day class is preceded with an online tutorial and tests, which allow anyone involved in provisioning of power or show design the chance to nail some essential theory. In the half day class, equipment and essential skills will combine.

“The power distribution game is changing. New, harmonics-generating loads like LEDs and switch-mode power supplies are fundamentally different than conventional lights, dimmers, amplifiers and arc lamps”, says Richard.

Info at www.cxevents.com.au



LIGHTMOVES RETURN TO SYDNEY

Lots of Watts sold

In January Melbourne based lighting firm Lightmoves will acquire most of the assets and the rights to the Lots of Watts business, located in Western Sydney. The firm will continue in its core activities of installation, sales and rental of lighting and audio equipment.

Established 20 years, Lots of Watts fell into difficulties during the GFC, when the Commonwealth Bank curtailed credit despite excellent performance by the company. The firm had just embarked on expansion, selling six small warehouses to take an option to buy one large facility in South Street Rydalmere into which they moved. With bank support suddenly withdrawn, the purchase option reverted to a lease, which became hard to service when an associated company Challenge Trailers (not acquired by Lightmoves) ran into difficulties.

Lots of Watts has an excellent reputation, according to Lightmoves chief Braham Ciddor. “We asked around and people like the ethics of the business”, he told CX.

Lots of Watts founder Greg Kean is part of the package, says Braham, with the new entity to commence from January in what he describes as a seamless transition and likely to be known as Lots of Watts Australia.

“This is a Lightmoves deal”, Braham said, eager to dampen speculation that associated lighting rental firm Res X would open in Sydney. “If anything, we will relocate some equipment because Res X does a lot of wholesale hire to other firms, and that’s something Lots of Watts do as well.”

Lightmoves has three strengths – Lighting Contracting, LED and Theatre Technology. They employ around 50 people across Lightmoves, Res X and Browns Precision Welding. The group is known as a well managed and successful business across Victoria. A business also named Lightmoves in Sydney had no connection, and was closed in 2000.



PHASESHIFT RESTRUCTURE

As Dave Jackson Departs

Phaseshift Productions continues in name, with owner Lawrie Videky forging ahead minus right hand man and former director David Jackson. After the Melbourne based lighting firm ‘did a phoenix’ a year ago, leaving behind a slab of debt owed to almost everyone in the lighting biz, things have been a little difficult.

“You went hard on us and we didn’t have a chance to put our side of the story”, Videky complained to CX recently. Actually they had a chance – we’d emailed a copy of our story prior to publication and got a legal letter in reply threatening all kinds of things and putting no position at all.

“It must be lonely for you”, CX asked. “You can’t subhire from other lighting firms anymore”. “Actually some of them will still play with us”, Videky replied.

“We’ve got support in the industry, people want to see us continue to keep the bastards honest and keep competition in the market”. Phaseshift works in some of the spaces occupied by PRG and Res X in Melbourne.

In July the company changed its entity operating name from Phaseshift Productions to Lawrie Videky Trading Pty Ltd. “It was too confusing for some of the corporates – they would confuse the old (infected, debt laden and now redundant) Phaseshift with the new Phaseshift. “In hindsight I wouldn’t have kept the name exactly the same”, he

explained, despite the two operating firms having different company numbers.

Videky was reluctant to comment on the departure of Jackson, who has been a divisive figure in the lighting community since the ‘restructure’ of Phaseshift. “We had good relations with the lighting importers (before the ‘restructure’), Videky says, “and now we still have to get parts from somewhere”. He is explaining why Jackson had assisted with importing various lighting fixtures and parts (which anyone can do) but had no explanation regarding the rumours that his firm had promoted sale of ‘grey sourced’ parts or equipment to other lighting firms in Australia.



EARLY DEPARTURE FOR WOODY

TAG audio specialist says goodbye



IAN WOODHOUSE

Audio specialist Ian Woodhouse would prefer to keep working at TAG (Technical Audio Group) in Sydney and depart quietly. But he has chosen to share news of his impending death to try to shake men into having regular checkups.

“Blokes have a stupid attitude” he told CX over a coffee at TAG. Woody is a pale and shaky version of his ebullient self, slow to rise from his chair but determined to keep going as long as possible. How long is possible? “I want to make my next birthday – 68 in May”, he says. Plus go on one last holiday, a cruise with his wife Bobby and some friends.

How about a benefit or a living wake, we asked? “No way. I don’t think anyone would come”, he replied. In any case he

has a modest whole-of-life insurance policy with AMP that should pay out shortly, since all his doctors agree his cancer is hopeless. Woody wants that resolved, so he can leave Bobby set up properly without him.

Woody says he contributed to his early departure, being slow to respond to early warning signs of prostate cancer around 2001. But by 2005 he was fighting hard, having had the thing removed and a ghastly round of high dose brachytherapy.

With remission came support work for guys with the common cancer, so common that a myth of imperviousness has arisen, where elderly men are routinely diagnosed with a slow developing cancer that is often left to run its course. It can move quick, and it does kill younger men, as Woody knows too well.

Currently on 240mg of Morphine each day, Woody feels able to function well enough to continue work at TAG, who have been enormously supportive. That firm has had cancer come calling closely, with Mandy, the wife of founding partner Tony Russo cruelly taken in October.

What should men do, we ask? “Get a medical every year”, he says quickly. “And get the doctor to do a DRE (digital rectal examination). It’s just a quick finger up the bum, honestly it doesn’t hurt one bit. You’d think the average audio guy could handle that, I know some of you would actually enjoy it”, he joked.

Sadly Woody won’t be on the CX Roadshow in February as he can’t fly anymore. So we will raise a toast in each town for him, as he wants to be there as he was on the first Roadshow.

SMITHY DEFIES CANCER

Not retired nor retiring

Sydney identity Neil ‘Smithy’ Smith is seeking to buy old and unwanted sound, music and lighting equipment to continue his second hand disposal business, despite treatment for stomach cancer.

“I’m on chemo, and on the up”, he told CX, “and I just cleared a huge pile of gear for Peter (Rode) Freedman. I bought it all in one go – no consignment. He had 20 years worth of stuff, and I’ve sold it all!”

Smithy invites calls from anyone with a collection of unwanted equipment. Email rocknrollactions@gmail.com or call him on 0412 449-018.



- Soundwave and Harvest festival boss AJ Maddah gobbled up the Billy Hyde Stage Systems business last month. The stage rental firm operates in Sydney and Melbourne, and is considered highly profitable.

Billy Hibben is the national manager.

- Mojo Barriers have opened an Australian office, to give event organisers and promoters access to their full line of crowd control systems. New director Nicola Carroll is supported by Craig Edwards.

Find them via www.mojobarriers.com

- Christie Digital Systems has acquired VR Solutions, to allow greater growth of distribution in Australia and NZ. VR Solutions are a highly regarded integrator and distributor based in Queensland.

- The Australian Road Crew Collective kicked off with an extremely well run and attended bash in Melbourne late in November. They plan to do it again in Sydney.

Short Technical Courses in January



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

Concourses are **INDUSTRY ACCREDITED**.



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What If I need to choose a chain hoist control system Part II?

Last time we looked at basic safety requirements (limit switches and emergency stops) of hoists and controls for very simple operations, either a single point load or a straight truss lifted with 2 hoists, and touched briefly on the concept of a “group stop”.

Let's start with a quick explanation of the concept of a group stop.

When lifting a load with more than one hoist (a group lift), if one of the hoists in the group stops uncommanded (i.e. not when you told it to stop) then there is an elevated risk of damaging the load (bending the truss), damaging something other than the load (snags or collisions with the building) or injuring someone (something falling off a tilted or bent truss, or things going “snap” and falling).

When this happens, unless you have very skilled operators watching the load like the proverbial hawk, it is necessary for the entire group to stop in a controlled manner when the errant hoist stops unexpectedly.

To achieve this, the controller needs information relating to the state of the hoists, such as load sensors/switches for overload and underload, limit switches etc. to decide whether or not a condition exists that requires the group to stop, and the controller needs to be set up to use this information. Let's look at a fairly simple example – a rectangular truss lifted by four high compliance but basic hoists, such as an asynchronous (no variable speed inverter or position encoder for synchronising) BGV-C1 hoist fitted with operating limits, emergency limits and an overload and underload sensor, with a controller that does the basic requirements – select a hoist (or group of hoists) and go UP or DOWN while your finger is on the button, and STOP when you take your

finger off the button.

Now because these hoists are asynchronous, and they are powered by conventional AC motors, and because physics isn't fair, the hoists will run at different speeds to each other, and sooner or later the truss will get out of level, and some hoists will see their loads increase, and others will decrease.

If this situation goes unnoticed or unchecked, and the skilled and experienced operators don't stop, select single motors and re-level the load, then sooner or later one of the hoists will go into an overload condition or one of the chains will go slack, or both.

When you have an appropriate controller with a group-stop facility, then these overloads and underloads will be reported to the controller, and the entire group of hoists will stop, allowing the operator to see which hoist stopped and why, and to select that hoist, back out of the overload or underload, re-level the load and continue on safely.

We next examine what happens when hoists strike a limit switch and how the controller deals with this.

The operating limits, while they stop the hoist, are not indicative of a fault with the hoist, where an emergency limit strike is most definitely a fault that requires a group stop. In simple, asynchronous group controllers, it is not normal practice to monitor the operating limits and include them in a group stop. In fact, it is common to set the upper operating limits of each hoist after carefully levelling the hoist at its highest position, allowing the operator to simply run the truss up until all the hoists stop on their upper operating limits, in effect “auto” levelling the truss every time it runs fully up.

If a hoist in the group strikes an overtravel limit however, a serious fault exists, and a group stop is required, hence it is important that an overtravel limit strike is reported to the controller.

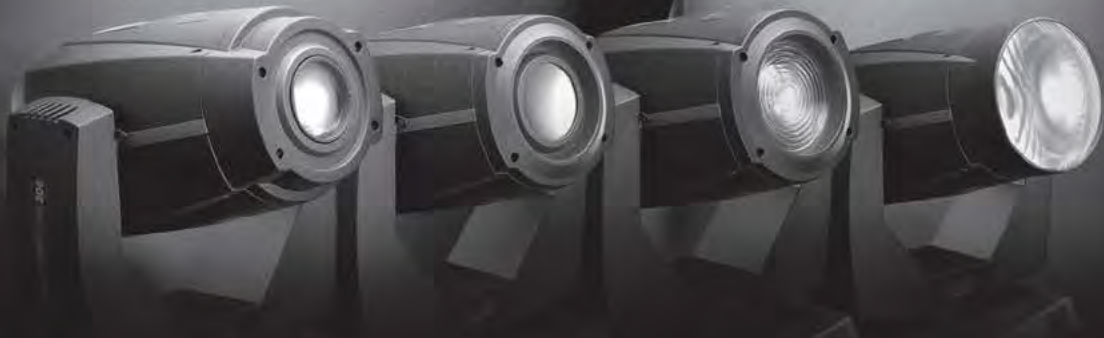
If you don't use a controller that performs a group stop under these conditions, and you're not paying attention, then you'll most likely get a truss which does a fairly good impression of a pretzel.

In the next issue, we'll look at introducing variable speed and position sensing and see how the British, German and Australian standards view the concept of synchronising hoist movement in a group move.

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

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KLARK TEKNIK XENYX QX MIXERS

The XENYX QX Series mixers 8 new models feature custom-designed FX engines from KLARK TEKNIK with 32 studio-grade presets, dual addressable parameters, Tap function and storable user settings. Collaborating with BEHRINGER has also introduced "wireless-ready" integration with BEHRINGER's upcoming ULM Series digital wireless microphones—making them the first of their kind in the industry.

With configurations ranging from 10 to 24 inputs, QX Series mixers feature BEHRINGER's XENYX mic preamps, "one-knob" mono channel compressors, built-in USB/audio interfaces, +48 V phantom power and "British" 3-band EQs, which provide warm and musical sound shaping across a broad tonal spectrum.

XENYX QX Series USB mixers are ideal for all live sound, recording and podcasting applications.



RADIAL SUBMIX 500 4X1 MIXER MODULE

The Submix is an ultra quiet 4 x 1 mixer module designed to fit the 500 series format and enable the studio engineer to combine multiple audio stems such as line level devices and effects together and route them as needed. The Submix is also ideally suited for keyboards, samplers and drum machines where these need to be mixed into the audio chain.



MEYER SOUND LEO LINEAR LARGE SCALE SOUND REINFORCEMENT SYSTEMS

Meyer's LEO offers, they say, a tremendous amount of headroom and exceptional fidelity for large-scale live events. In linear systems, the loudspeaker does just one thing: it reproduces every sonic element, only louder, without any change in tonality.

Now that digital plugins at the console level allow creative effects to be implemented upstream, there is no need to push loudspeakers to the edge of power compression to achieve an effect. This means that whether you're reproducing heavy metal or classical music, LEO allows you to hear each instrument - vocals, bass, sax, drums, guitar simultaneously.



ROBE ACTOR 3,6 & 12 LEDWASH LUMINAIRES

The Actor range of wash luminaires bring all the advantages of the Robin LEDWash series to the fixed position application. There is full DMX control over the zoom angle, colour mixing - including the 237 pre-set colours, selectable whites, variable CTO and concentric ring effect macros. The tungsten emulation function allows the fixtures to be integrated seamlessly into lighting schemes with existing traditional lanterns.

The low overall cost-of-ownership - driven by the 60,000 hour LED life expectancy, makes the Actor range an option for controllable wash lighting in static stage and studio installations.

The Actor 3 contains 19 high powered 15w RGBW LED's, Actor 6 contains 37 high powered 15w RGBW LED's and the Actor 12 contains 61 high powered 15w RGBW LED's all providing a smooth, flat progressive beam from a tight 8 degree right out to an impressive 63 degrees.





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PHILIPS Q SERIES LED DISPLAYS

The Philips Q Series is a new range of Edge-lit LED commercial displays built for SMBs (small and medium-sized businesses) looking for an affordable and energy efficient digital signage solution. The Q Series displays come in 32", 42" and 46".

Designed for basic digital signage applications, the Philips Q Series features USB Media Playback for simple content playback without the need for special media players, computers, or network connectivity. Users can simply load their digital signage content onto a USB Drive and plug into the Philips Q Series for instant playback.

With the Edge-lit LED lighting technology, the Philips Q Series consumes an average of 40 percent less power than CCFL lighting technology, reducing the operating cost over the lifetime of the display. The panel life of the Philips Q Series is rated up to 50,000 hours (MTBF) for demanding digital signage applications.



RADIAL GOLD DIGGER 4-CHANNEL MIC SELECTOR

The Gold Digger is a 4-channel mic selector that enables the engineer to quickly compare the sound of four different microphones while sharing the same preamp.

The Gold Digger employs military grade gold contact relays to manage the switching process, ensuring the pristine mic signal is maintained without introducing colour, distortion or artefact of any kind.

Features include four rear-mounted XLR-F mic inputs plus an XLR-m output to feed the preamp. To eliminate bleed between microphones, each channel is equipped with a 'radio style' selector switch that ensures only one mic is on at a time. The external supply provides power for the LED indicators, charges the relays and enables the Gold Digger to generate 48 volt phantom which can be turned on or off for each mic as needed.



dbx PMC 16 (PERSONAL MONITOR CONTROL)

The PMC Personal Monitor Control is a remote control for a digital monitor mix solution. PMC control surface allows users to control their personal mix of 16-channels of audio via BLU link. The PMC's built-in Wizard allows you to quickly set up your digital monitor system including individual panning, effect, tone and level controls savable to 16 user presets. The PMC works great with headphones, in-ear monitors, powered wedges and traditional wedge monitors. The PMC16 works hand in hand with the TR1616 featured in NEW GEAR last month.



BOSCH HD CONFERENCE DOME

Bosch Communications Systems is enhancing its DCN Conference Systems (DCN Next Generation and DCN Wireless) with full HD automatic camera control. The new HD solution includes a purpose-designed HD Conference Dome camera with HD-SDI (Serial-Digital-Interface) output, meaning crystal-clear images.

The digital signals generated by the HD output have enabled the video of the delegate speaking to be displayed on larger screens in say a public gallery, or broadcast to other venues without loss of quality.

Automatic camera control provides a visual dimension to meetings that not only helps to focus the attention of participants on the topic under discussion but also shows them who is speaking.

A PTZ camera automatically pans to the current speaker and displays an image of the speaker plus the speaker's name on monitors or projection screens in, for example, the main meeting hall, lobby, interpreters' booths or breakout rooms. The camera is automatically activated by the microphone button on the delegate's conference unit.

O1V96i

now with enhanced **DAW** compatibility

The O1V96 Digital Mixing Console has, since it's release in 2003, been the industry standard digital mixing console for many applications – including music recording and mixing as well as being selected for live-sound and installation roles. Now, with the O1V96i, experience enhanced DAW (Digital Audio Workstation) compatibility and incredible VCM effects as standard.

The O1V96i features 16-in/16-out USB2.0 audio streaming capable of 96kHz operation. It also comes complete with Steinberg's Cubase AI6 DAW software, meaning multi-track recording is now possible with a single USB2.0 connection to your computer.

Optimized for both live and studio recording, the O1V96i is a digital mixing console that no other even approaches in both power and versatility.



Vintage Stomp / Master Strip

Vintage Stomp and Master Strip were previously options for the O1V96VCM but are now installed as standard in the O1V96i. Use these incredible VCM (Virtual Circuit Modelling) effects to add the ultimate analog sound.



BEHRINGER B115D & B112D LOUDSPEAKERS

EUROLIVE B115D and B112D active loudspeakers are two self-contained PA solutions that merge 1,000-Watt Class-D power amp technology, built-in wireless microphone capability and portability. These performance-grade loudspeakers are made lighter (B115D: 17.2 kg; B112D: 14.5 kg) and more powerful.

The Class-D power amps provide low-distortion power and efficiency. Backed by SMPS (Switch Mode Power Supply) technology, the high-tech alternative to heavy transformers and massive heat sinks, these loudspeakers can run cool all day and all night without concern.

EUROLIVE B115D shown



ELECTROVOICE ZX1- SUB

The passive ZX1-Sub is compact and lightweight presenting an optimal combination of performance, portability and efficiency. The ZX1-Sub is well suited to both mobile applications and fixed installation.

Its EV engineered 12" EVS-12S woofer operates in the 42 Hz to 200 Hz (-10 dB) frequency range and has a frequency response of 53 Hz - 125 Hz (-3 dB). The nominal impedance of the subwoofer is 8 ohms and its maximum sound pressure level is 127 dB. A robust, 15-mm-thick internally braced wooden enclosure with two side handles, a structured coating and a sturdy steel grille ensure reliable performance and rugged durability in day-to-day use.



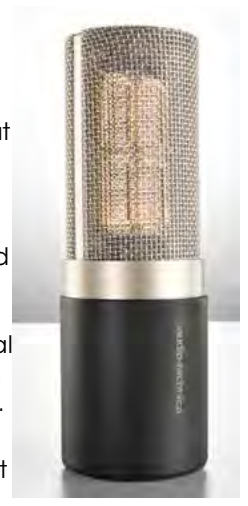
AUDIO-TECHNICA AT5040

The AT5040 is a side-addressed cardioid condenser offering high-fidelity performance with realism and depth, presence and purity of sound. Its proprietary element design employs four ultra-thin (2 micron) rectangular diaphragms that function as one to provide a combined surface area that is unachievable in a standard round diaphragm.

The AT5040 features a smooth top end with controlled sibilance. Large diaphragm characteristics and fast transient response also make it ideal for recording acoustic instruments such as piano, guitar, strings and saxophone.

Another key AT5040 design feature is advanced internal shock mounting that effectively decouples the capsule from the microphone body.

For additional isolation, each AT5040 is also provided with Audio-Technica's innovative new AT8480 shock mount.



RED LIGHTING RED MX CONSOLE

RED Lighting's compact RED MX console serves as an intuitive, ergonomic, reliable and low-cost lighting control solution. Users get access to six DMX universes directly on the controller, 3072 configurable channels and a GUI designed for easy programming. Users can control up to 576 cue lists with a maximum of 999 cues each and 12 keys offer direct access to playback and programming functions. The console has a 7-inch TFT touch screen colour display, LCD digital keys & four encoder wheels.



ETYMOTIC MUSIC PRO EARPLUGS

Music PRO earplugs combine two versions of Musicians Earplugs in the same device (ER9 and ER15). These intelligent, high-fidelity electronic earplugs allow natural hearing for quiet and moderate-level sounds, and provide automatic protection from both, loud sustained music and sudden loud percussive sounds. The soft sounds of music and speech are amplified in the enhancement mode.

In the case of the Music PRO 9-15, the lower threshold knee is higher than in other models so musicians

can experience the true dynamics of moderately loud sounds and still be protected from percussive impact or continuous loud sound.

Each electronic earplug is equipped with a microphone, a wide-dynamic range-compression integrated circuit and a receiver (speaker or driver).

The circuitry identifies progressive increases in sound level and immediately lowers the volume to a safer level up to the maximum output capability of the transducers.

Natural hearing is instantaneously restored when sound levels are safe so there is no pumping or perception of being "off the air."



World Class Sound Quality in an All-In-One Console — the M-200i V-Mixer

The M-200i being part of the V-Mixer family means it has award winning quality.

All condensed into a compact body with 24 analogue inputs, 12 outs and built in REAC port for stage box expansion.

A feature list that seems almost endless includes full iPad control making the M-200i stand out as the new direction for live consoles in any venue.

RRP \$3795, available January 2013.

MIX CAPACITY	32 × INPUT ch	8 × AUX	4 × MATRIX	8 × DCA
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IN/OUT	ANALOG IN 24 ch	ANALOG OUT 12 ch	DIGITAL OUT 2 ch	REAC IN/OUT 40×40 ch



Built-in 24 analog inputs, 12 analog outputs, stereo digital output



Digitally Controlled High Quality Pre-amps on every input channel

NEW

M-200i

V-Mixer

LIVE MIXING CONSOLE

MC2 AUDIO S SERIES AMPLIFIERS

The S Series utilise the best AB bipolar output stages, combined with the MC2 current driven floating drive stage along with analogue level controls for minimal signal degradation. Sophisticated "side-chain" limiters prevent distortion and speaker damage, but are out-of-circuit until the onset of clipping so do not compromise the signal path under normal working conditions.



A bespoke high fidelity shielded toroidal power supply combined with intelligently controlled low noise fans provide optimum conditions for the output stages, ensuring the only thing you will ever hear is your sound.

GALAXY AUDIO NANO SPOT

The Nano Spot features a 3" driver, it has three inputs on the rear panel: XLR, 1/4", and 1/8" stereo summing. With 24V Phantom power, a 20dB pad, and built in compressor, you can go directly into the Nano Spot from your source or microphone. The NSPA can be used in call centers, computer monitoring, on the bar or enclosed patio in a restaurant, and many other applications.



JBL LASER ACCESSORY FOR VTX ARRAYS

The LZ laser accessory is a tool that provides precise focus of VTX V25 arrays for optimum vertical pattern control and audience coverage while streamlining the setup process. A single LZ installed on the top enclosure serves as a visual reference while setting the overall array site angle in accordance with JBL Line Array Calculator (LAC) predictions. Advanced system tuning can deploy multiple LZ lasers for individual array circuits, assisting in physical measurement microphone placement to correspond with virtual measurement microphones shown in LAC.



DPA BELT PACK CABLE GUIDE

Some clients use tape to bend the cable when attached to a belt pack, and this practice may result in broken cables that are not covered by warranty. To accommodate the need, DPA have designed a cable bend that can be attached to the cable relief.



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BOSE L1 MODEL 1S PORTABLE COLUMN ARRAY

The new L1 Model 1S portable line array system delivers a combination of portability and performance. It's compact and light enough to make setup quick and easy, yet powerful enough to fill a mid-sized venue (up to 300 persons). This system works well for solo musicians, bands and public speakers. Includes one B1 bass module for enhanced low-end performance.

It features Spatial Dispersion and Articulated Array speaker technologies in the loudspeaker producing wide, uniform sound coverage. The 12 small drivers are arranged using Articulated Array speaker technology in a slim, vertical enclosure - creating nearly 180 degrees of horizontal coverage and consistent tonal balance. It also comes with a ToneMatch port for digital audio and power connection to the ToneMatch audio engine.

Finally it has an integrated power amplifier in the power stand supporting up to 2 x B1 bass modules or 1 x B2 bass module.



GEPCO RunONE TOURING CABLES

Gepco's RunONE powered cables are now offered in a version specifically for touring and production. The cables put audio, AC power and optional Cat-5 data under a single durable, yet flexible jacket, allowing users to pull a single cable in place of multiple cables. Each RunONE cable combines one power channel with two, eight or 12 channels of 110-Ohm balanced audio for line level, mic level or digital AES audio signals for use with self-powered speakers or DMX lighting control. The Touring Line has larger-gauge 12 AWG power conductors and an overall shield and is available un-terminated or with industry standard connectors.



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NEXO STM

NEW NEXO CONCEPT HAS BIG LAUNCH

BY JULIUS GRAFTON

FRENCH AUDIO FIRM NEXO HAVE STARTED A COMEBACK. VIA DISTRIBUTOR GROUP TECHNOLOGIES, THEY LAUNCHED AN ASSAULT ON THE WALLETS OF THE AUSTRALIAN LIVE AUDIO COMMUNITY THIS SPRING. AFTER A DEVELOPMENT LAG THAT SAW VARIOUS GEO LINE ARRAY PRODUCTS (GEO-T, GEO-S, GEO-D) FALL OFF IN SALES, A YAMAHA INVESTMENT AND SOME FRESH THINKING LED TO THE NEXO STM.

STM is a reasonably compact line array design that attempts to recapture the glory days of Nexo Alpha, the point source 2 box system that sold boatloads in the late 90's and is still on sale today. They say the STM allows modular deployment so one design could be used for a small show, and scaled right up to arena coverage.

The selling proposition is that an audio rental firm now only need one model of line array, instead of several. Some firms have small, medium and large format line array elements and subs. Nexo says STM does all these tasks.

While the theory is sound, the practicality is that the system 'appears' expensive to acquire – a fact CX could not

verify due to continual evasiveness as to prices. Despite the insistence of importer Group Technologies that prices had not been established, a complete system was already sold to local firm Monitor City in Melbourne.

Hopefully CX is incorrect, and the price points are affordable. But the evasiveness is uncommon in our experience, since all other system distributors are generally open to us about price. We all know this kit can be expensive, and that audio rental firms buy with an expectation of five good years and then more to come as the gear is downgraded from A list to B list.

"They are asking us to buy a house", one of the invited audio guys at the STM launch said, which is true of any top end line array, rigging and electronics package these days. But he didn't actually know the prices, because as Group Technologies boss Mark Ladewig says, it is 'POA'.

INSIDE STM

Key to the promise of STM is the two box combination of M46 main module, and B112 bass module. Generally you'd fly or ground stack a column of main modules, and match them one-to-one with the bass module in a second column. But Nexo says a second column of bass modules could be arranged, so you'd have three vertical columns where extra bass projection is the objective.

There is an additional S118 sub module that can also be flown, or ground stacked. In common use, the main and bass modules alone should suffice for most forms of music.

Cabinet loading has the not-wood-but-composite M46 loaded with 4 mid/low drivers of 6.5 inch diameter, and four high frequency devices. The also composite and equally sized B112 bottom box has a 12" driver inside. The S118 (taller and made of wood) has an 18" in there, as you'd guess from





the model number.

Missing at the launch was the M28 omni module, a downfill box that carries a very lofty performance promise as it goes from 60hz to 20khz and disperses 120 degrees wide.

NEXO say the low and mid drivers are all new – without disclosing the heritage of the high frequency drivers.

Then there is the rigging system. This is without doubt very good – promoted as super quick to deploy, and in the on field demo at Group Technologies partner Peter Thoms’ farm, it was indeed quick to deploy. Launch client Monitor City say they will save 20 minutes setup time, plus some de-rig time at the end of an arena gig.

We wouldn’t buy that it is the ‘best rigging system’ yet released – the Adamson Energia could hold that title, in our view. But the Nexo system sure is sweet – from dolly stack to flown in fast time, plus with the ability to lock additional columns together. In a very wide deployment, you could fly four columns – to give up to 180 degrees of coverage.

With box weight around 55kg for top box and bottom box

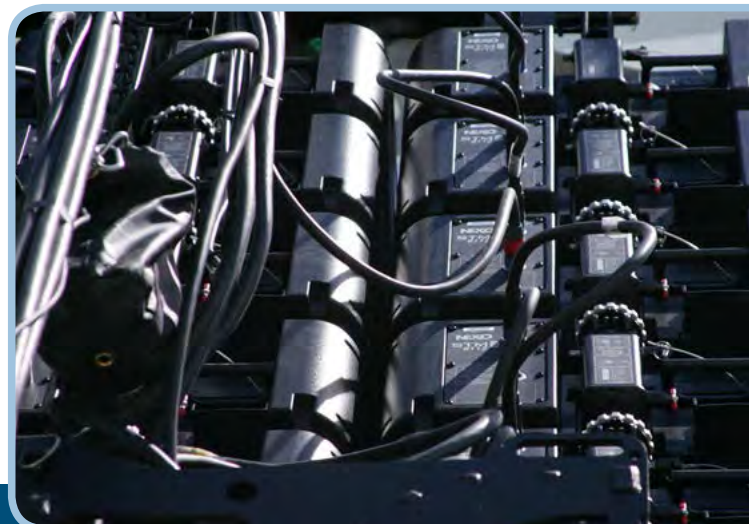
(there is some ballast in the bottom box to equalise weight), the handling and shipping bill on STM is a plus.

THE AUDITION

Nexo and Group Technologies pulled out all the stops. Summoned to GT HQ in Melbourne, CX was flown 45 minutes in a helicopter with the other media guy from Audio Technology magazine, to the farm of Peter Thoms. There we were offered beef and chicken and given a private audition. Back to Melbourne on the Jetranger, we met with the main party of audio guys (no girls) at GT HQ for the formal release process.

After lunch we all got on a bus and transferred to a country resort, where an afternoon presentation was held to show off the 45 N12 wedge – a fairly unique concept that definitely goes loud.

We were well looked after – a nice dinner, lots of booze, log fire and a good standard of accommodation all set the scene for the on-field demo next day.



NEXO STM



Bussed out to the farm, it was a repeat of what I'd experienced the day before, but this time with 20 audio guys to bounce impressions off.

We heard combinations of boxes – top and bottom flown, with and without floor subs (there were 14 RS 18 Ray subs in place) and then the two S118 subs with two top

and two bottom boxes, in a ground stack configuration.

Someone had deemed long single audio tracks were appropriate, so we enjoyed or endured a seven minute long Paul Simons Ladysmith Black Mambazo vocal collaboration, followed by a Dire Straights track of some length. These

being the same as the previous day's offerings, I had the chance to mentally compare.

A rock track completed the listening.

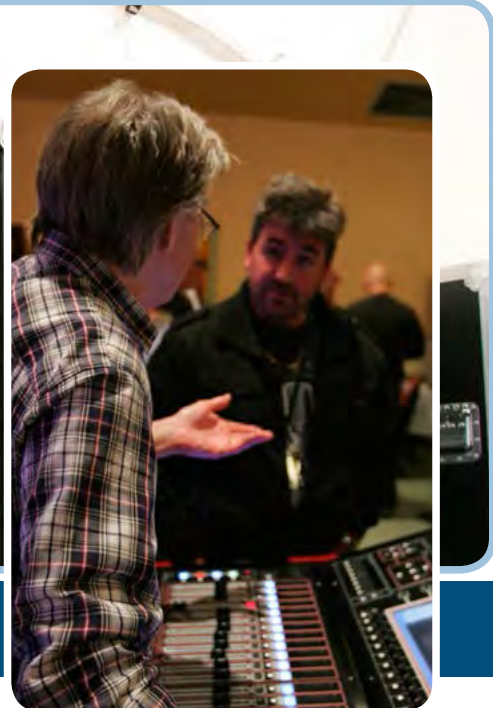
The demo was run near the top end of the amplifier ability. In some passages, I observed amp limit lights.

The subjective quality of the aural experience was debated by many present. No one thought the system sounded poor in any way, some picked the headroom had run out, and everyone thought there were good to great aspects of the audition. This is what you expect with a new system and new technology.

My impressions: as provided, the system ran out of power a bit early.

HOW WILL THIS FARE?

Nexo's transition to line array started well with GEO-T,





but seemed to stall. The main Australian GEO convert was Bruce Johnston of Johnston Audio (now part of JPJ Audio in partnership with Jands). He toured GEO-T and GEO-S but became disillusioned with, he says, high frequency diaphragm failures and his perception of lack of support. He exited Nexo in favour of d+b and never looked back.

The other mega large live audio player in Australia is Norwest Productions, with facilities spanning six time zones from New Zealand to West Australia. Norwest founder Chris Kennedy attended the Nexo launch and expressed satisfaction with the sound, and the concept. But he says they have no plans to buy this system, as they are too committed elsewhere.

While the marketing plays hard on the 'one system does all' concept, we don't think it does. There are questions as to throw, and power. Taking one pair of boxes – M46 and B112 – when you combine the loadings, you have 1 x 12", 4 x 6.5" and 4 x high frequency devices. My math says this is light on bass, so the two column model of B112's with one column of M46's becomes almost mandatory for anything more demanding than Ladysmith Black Mambazo.



The pairing of (not STM) sub cabinets as in the demo didn't jive either. What we heard from the S118 says you would, of course, use these for sub bass support.

In electronics land, the impressively packaged Universal Amp Rack loaded with the 4 channel NXamp is eye candy and a geeks delight. It allows fast change of format, and appears to reduce the chance of engineer fiddling.

Here's the thing. STM won't start to appear on the top end riders anytime soon where d+b J Series and L-Acoustic K1 rule the roost. People won't put it alongside Adamson Energia either, because it would be outgunned for power before sunrise.

The hearts and minds of up-and-coming production suppliers will be tested, we suspect, by the price tag. We hope we are wrong, and that it is not expensive, but the evidence points to a large investment.

Nexo says one STM system will do the work of many and lead your rental company back to profitability.

This remains to be seen.



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Mixing fatigue

BY ANDY STEWART

Ever tried listening to the same song 100 times over? Of course you have... every mix engineer does it in the natural flow of things. But what about 1000 times... or even 5000? What happens to your focus and interest in the song then? Or how about working on it for six months... or even a year? Time to get the gun out I reckon... or look for another job. Whether you're a professional getting paid to mix, or an enthusiast looking for benefits other than money – credit on a record, backstage access at gigs, experience, friends, whatever – you will eventually come up against mixing fatigue. When you do – and you certainly will – be prepared for your approach to fall apart like Tiger Woods' golf swing. Think you're immune? **Think again.**

Mixing fatigue takes all forms – from 'compliance' (where you find yourself doing anything to a mix that your client demands, just to get them out the door); 'disinterest' (where the whole process suddenly becomes more soporific than filing a tax return, and anything you do to the song seems pointless and stupid); to 'avoidance' (where calls from the client for yet another session on that 'troublesome song' go unanswered and the mix eventually stalls); and the most common of them all, 'frustration' (where you get angry at the client for not paying you enough, not understanding the limitations of their project, not knowing what's best for the song... sometimes even the way they smell).

And that's just a handful of symptoms. No one wants this lurgy anywhere near them when they mix, and yet every time we overwork something we all run the risk of catching it. Here are some general preventative measures... the best medicine, they say.

A PLAN OF ATTACK

There's no point starting a mixing project without some sort of discussion or agreed terms. I know this may sometimes feel a little inappropriate, inartistic or even 'uncool', but trust me: clarity at the beginning of a project is crucial to friendly and balanced interactions in the studio. Nothing festers faster than concealed agendas or unspoken frus-

trations, so do yourself a favour right at the outset and get things out in the open, or better still, on paper. Keep things open and honest throughout proceedings and the project will always be better for it.

GET CRACKING!

The most obvious thing to do once you're up and running is avoid working on something for too long! And by that I don't simply mean mixing a song digitally on a computer for eight hours and then shutting down the file to work on something else. Mixing fatigue isn't just about learning how to avoid working on a song for too many hours in a given day, nor should it be confused with listening fatigue... that's something else. Mixing fatigue covers the entire elapsed time you devote to any particular piece of audio, whether it's a song, an album, a film or whatever. The time it takes can be spread over a day or a decade; it's up to you. Either way, mixing fatigue is cumulative. So be warned: time is of the essence and right now is the time to nail it.

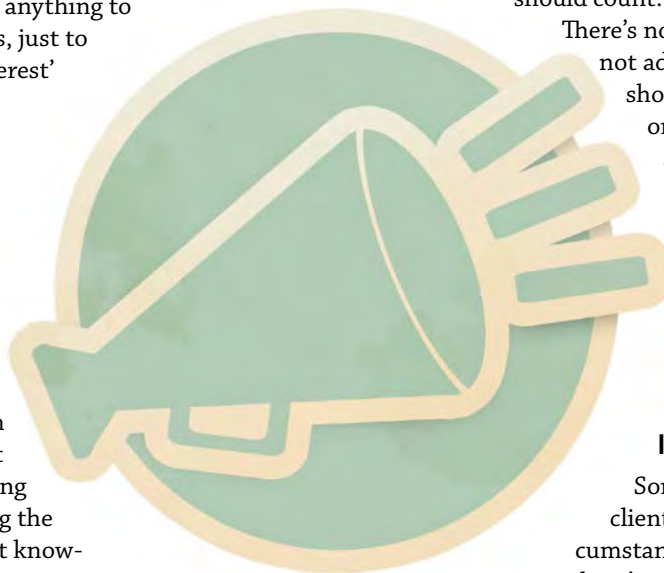
As a general rule, any time spent in front of a piece of music should include some sort of productive work. Don't just have it playing over and over in the background while you have dinner or play table tennis. When you're hearing it, it should count... otherwise turn it off.

There's no point rushing things – I'm not advocating that – but neither should mix sessions (professional or otherwise) dawdle along at a snail's pace as if time is somehow irrelevant to the outcome. It's always relevant, irrespective of the budget. Enjoy your work and have fun, by all means, but if days go by there should be something to show for it.

DON'T BECOME ISOLATIONIST

Sometimes mixing without the client is unavoidable, and in some circumstances, like TV music mixing for example, it's commonplace. For the most part, however, mixing without a client is an accident waiting to happen. I know it may seem preferable in some circumstances to ditch the client and just get on with it – particularly when things aren't going so well. But often this instinct is, in truth, a defensive manoeuvre, designed (sometimes unconsciously) to get people away from you so you can flounder in private. Moreover, it's a huge time sink. When you catch yourself doing this, toughen up and work through it. Sure, there are those clients that like to fire questions at you with tennis ball launcher monotony – 'Hey Andy, sorry to interrupt... just another quick question if I may...' – but generally speaking, having the client in a session is often your greatest asset and a means to quick outcomes, provided you know how to interact with them and ask the right questions. It's their music after all, don't forget.

The slowest route to final mix masters typically goes something like this: the client is kept away from proceedings until the mix engineer is happy with the mix... the client hears the mix 12 hours later for the first time and doesn't like some



aspects of it, and from this juncture the engineer spends the next 48 hours trying to defend the aural high ground and resisting any notion that the client may, in fact, be right about something. This is no way to mix. Inflexible and/or stubborn mix engineers are the worst kind. If you're one of these, consider a job in the military.

STAY FLEXIBLE, STAY TUNED

A bit like ageing, flexibility and focus are in finite supply when you mix a song, so make the most of them while they're still at your disposal. As you get more experienced, you'll develop better stamina anyway, but even the most experienced engineers find it difficult to mix something that's completely open-ended. Actually, that's arguably a professional engineer's greatest skill: the capacity to handle themselves and clients over the long haul of a marathon mix. Flexibility is the key here too; there's no point getting 80% of the way through a mix only to stiffen up at the last hurdle in reaction to suggestions from others about valid mix changes. Leave your precious ego at the door and never let these suggestions be misconstrued as a personal attack. Life's too short.

One other crucial point to reflect on here is that, for various reasons, it's often far easier for the mix engineer to arrive at a musical outcome than it is for the client. Put yourself in their shoes as often as you can and try to understand what it is they're striving for. And particularly for those clients whose project has been percolating for years – sometimes even decades – they can often scarcely imagine their world 'post-album', so the idea of actually finishing it

can be a psychological barrier in itself. Bear this in mind...

EDITING & SOFTWARE MANAGEMENT

It almost goes without saying that technical skill and imagination are crucial to great mixes. Editing skills – being able to recognise what's right and wrong with performances, musical arrangements, song structures etc – are vital to your ability to land a project before mixing fatigue sets in. Recognising what modifications need to be made swiftly can save you huge amounts of time down the track. Imagining a mix is a skill all its own; reimagining the same mix 10 times over is the hardest part.

No one wants to drop their guard and turn into a knob twiddler through mixing fatigue. I don't know a single mix engineer who isn't proud of what he or she pulls off when they're in form and working well. But no sane person can realistically expect to remain interested in a project indefinitely, and once you push this boundary you're in dangerous territory. Get fit for the long haul, sure, but never think you're immune.

Andy Stewart owns and operates The Mill in Woolamai, VIC. He's been inside some seriously long and involved projects over the years, but no, he's not immune either.



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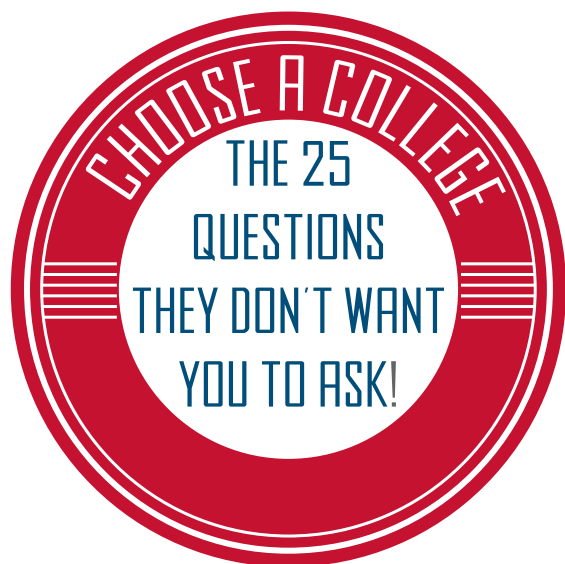
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Group



BY JULIUS GRAFTON

I personally ran more than 50 college open days where the star attraction was myself, spruiking my college. Between 15 and 50 potential students would turn up, usually accompanied by parents - since most college enrolments are school leavers. Did I ever get asked a difficult question? Not that I recall. So here is my list of 25 difficult questions, all of which should elicit an honest answer, otherwise don't spend your money or waste your year(s) with the college or uni - whether private, or Government. They all need to recruit, and they all follow a similar routine at open days and interviews. Before we start with the list, don't be impressed by the couple of graduates they roll out who will usually be the cr me of the crop. Testimonies are fine, but balance them against the number of people that go through.

This list is the list I wished someone would have asked me, because I could answer everything here, while looking them in the eyes. That's the gold standard you want from your potential college. Having said that, most recruiters are sales people, and you should allow them the chance to get the answers, because they probably will not know this stuff.

The List:

- What is the completion rate? Watch out for jargon: by completion, we mean how many students finish, opposed to how many start.
- What is the dropout rate? And if the course runs more than one year, drill down year by year. Year 1 at Uni can see 40% of students debunk.
- What is the graduation rate? Completion means (to me) finishing. Graduation should mean 'how many students got

the Certificate or Diploma?

- In the Graduation Rate (see above), does that mean they graduated with the Certificate or Diploma or did they graduate with a lower award, like a Statement of Attainment?
- Who are the trainers / lecturers, and how many classes do they deliver? My daughter went to the Atlantic Theatre Company school in New York run by David Mamet, and didn't actually see him the whole time. Having a 'name' presenter is great, so long as they are actually present!
- How much does the course cost, in full? This is usually hidden in the Fee Help or HECS (student loan from Government) fine print. Colleges are great at quoting fee per semesters - how many semesters are in a year, and how many in a whole qualification?
- How much does it cost to withdraw, and at what intervals? Is there a window for withdrawal? There usually is, and they hate you knowing.
- Beware the upfront fee. We pushed for the whole lot upfront with a discount, but very recently (after we closed down in 2010) the rules have become tighter. It is generally very unwise to pay the whole lot up front, no matter how exciting the discount.
- What is the timetable? Some uni courses only involve 29 weeks on site, and usually never more than 20 hours a week. We ran 35 weeks at our college. What will your student do with all that down time?
- Can you change streams or subjects or even downgrade from Degree to Diploma or to Certificate? What is the structure of the qualification, how many Units, what are the components?
- Can you re-do a failed Unit? Under VET (Vocational Education and Training) the college is required to allow you to reattempt an assessment - what are the rules, and the costs, and the timeframe to do this? No value to you if they try to limit when or defer you. Know in advance.
- What is in the course? How many hours / lessons per Unit or subject, and how are they delivered?
- What are the class sizes?
- How much practical time is given for specific subjects or Units that your student is most interested in? You may be disturbed at the answer. Hopefully you will be delighted!
- What are the backgrounds and industry experience and most importantly industry RECENTCY of the trainers or lecturers? No point having a burned out hack teaching you methods from last century, is there?
- Where are the classes or training delivered? Ask to see all the frequently used facilities, cross check with answers given above.
- How are work experience or internships managed? Is this an essential or mandatory part of the course? Where, when, how many hours, and how supervised? How is it assessed, if it is assessable? Does the student have to find their own work placements (beware of this!) and how realistic is the program?

- How is the course assessed? What are the tests, exams and assessment methods, and when are they applied? How much outside or home work is required?
- God forbid, what if the student becomes unwell? What are the minimum attendance requirements, and arrangements for absences?
- Can you defer, how, and what will it cost to leave and come back later?
- What is the employment rate of graduates, directly in the industry relating to the qualification? And in what time frames? Be careful with this answer, as they may just say a percentage without being specific. You want to know exactly what happens on graduation.
- What specific assistance will the college / Uni give the student on graduation, in support of them seeking employment?
- Which industry employers support the college or Uni, and have actively employed graduates? Don't let them flip a couple of names at you, ask for contacts so you can verify this. It is the BIG one on our list!
- When is the college or Uni accreditation due for renewal? We had enormous resource issues around our audit, and made sure the study program didn't suffer. If the college is denied renewal in the middle of your course, things could get difficult!
- If the college closes down or discontinues your course, how will they assist the student in finding another similar course? Are there minimum numbers for the course, is there a chance it will not actually run, and if so, when will you be advised? We know of some very late announcements that leave students unable to enrol elsewhere.

So that's the list. Bit daunting, isn't it? Notice I didn't ask about policy or appeals, because these will be in the student handbook, which you should also access and actually read before signing off.

Answering all on the list will make life a little hard for the recruiter. They may not have all the answers, but they can get them if they are serious. They may not even get back to you which proves there are risks with the institution or course.

But remember: if the course and the institution are worthwhile, they need to satisfy your requirements before, during and after the study.

Don't be intimidated – I suspect most parents of students don't really mind too much about a lot of the detail above, either because they don't know, don't care or (I am sure of this) they are anxious to park Johnny or Stella somewhere for what I called 'Year 13' of school instead of having them lying on the couch playing Xbox.

If you and your student are serious about how they spend money and time on a qualification, use this list and be prepared to invest a little time to get answers.



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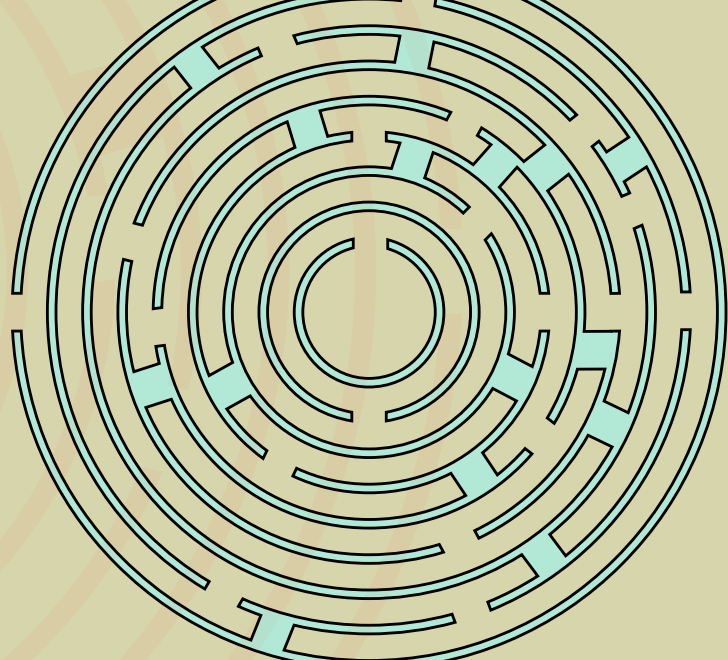
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INSTALL ADVISOR

AV SYSTEMS IN BARS

BY JIMMY DEN-ODEN



MANY PEOPLE ENJOY GOING OUT ON A FRIDAY AFTERNOON AFTER WORK FOR SOME QUIET LIBATIONS AT THEIR LOCAL. HERE AT CX, WAITING FOR FRIDAY IS OPTIONAL. WITH THE IMPROVEMENTS MADE IN RECENT YEARS IN QUALITY DOMESTIC AV SYSTEMS, IT'S EASY TO UNDERSTAND WHY PUNTER EXPECTATIONS OF MUSIC IN PUBLIC SPACES HAVE INCREASED.

SPEAKER DISTRIBUTION

Few people go to a bar by themselves. The majority attend in the company of friends, and believe it or not they want to talk to these friends. When doing an installation in a bar, never forget that the background music is just that. Background. It should be something you can hear everywhere in the venue, but never at an obtrusive level. If it gets in the way of a conversation, then that's a fail.

Proper speaker distribution is your friend when building a distributed audio system. Many factors will affect exactly how many speakers are required in a space – the common mistake is using too few. Too often, people allow a budget to define the system, rather than deciding what's required then figuring out how much it will cost.

Let's take a look at some important issues to address when building distributed music systems – the first being the type of speaker you're using. Basically it comes down to two choices – self-contained cabinets or in-ceiling/in-wall speakers. Both have positives – drivers inside speaker boxes work within known parameters for predictable frequency response. Having an enclosure will commonly allow for better low frequency rendition. In-ceiling speakers are a lot more designer-friendly, and these days sound a lot better than the old 100V line systems of days gone by. Some pretty large in-ceiling speakers are now available which provide low-end

response more than adequate for background music.

Mounting an in-ceiling speaker requires you to cut a big hole in the ceiling. Such penetrations may affect fire regulation compliance, so in situations where this is an issue it's wise to opt for a speaker with a metal back-can to maintain compliance. Also on the note of fire and evacuation, some speakers can be used for music and EWIS (Emergency Warning and Intercommunication System) purposes – a change-over relay switches the speaker input from the music source to the evacuation system. This feature requires planning to be done in conjunction with whoever is installing the EWIS kit.

Assuming you go for self-contained speaker boxes, think about how these will be mounted. Some units have integrated mounting systems, though occasionally these are not great and tend to sag over time. Think also about what you're bolting the thing onto – a gyprock wall won't support a large speaker box for long! For most applications, in-ceiling speakers will look better and it's easier to distribute them over wide areas. It's important to check ceiling cavity clearance before promising to install these.

Every speaker has dispersion characteristics. Most in-ceiling units will have a conical pattern, though pattern control is only effective down to a certain frequency – below this point the things tend to become omnidirectional. The underlying principal is to ensure that wherever people stand in the venue, the high frequencies reach their heads.

Several manufacturers have very good prediction tools which allow you to input the dimensions and ceiling height of your space, and then choose a speaker model. The tools will then tell you the required density in order to achieve specific SPL consistently across the space. It's far better to punch some numbers into a computer and interpret the results before the installation, than to put a pile of gear in only to realise the system is inadequate. Don't forget to factor in the height of people standing in the room – even coverage across the floor is virtually useless when punters ears are 6 foot higher. Where big level differences will exist between areas, try to avoid too much overlap in coverage. Reflections from an adjacent area plus direct sound from the local speakers will result in multiple arrival times, and hence a reduction in intelligibility and overall sound quality.

Once you've decided on a number of speakers, the next step is figuring out how to drive them – your choices are

impedance or 100V line. Self-powered architectural speakers are less common. Impedance driven systems require that you maintain minimum impedance across your amplifiers – so if you have a lot of speakers you'll need a lot of amplifier channels. 100V line systems allow you to hang lots of drivers off a single line, but use transformers on each speaker which can saturate on low frequencies. 100V line systems tend to work better over long cable runs while impedance driven systems will suffer signal loss. Install the amps near the speakers, and don't cheap out on cable – thin cable can result in significant signal loss at speaker level.

My personal preference is to use a couple of multi-channel (6+) amps to impedance drive in-ceiling speakers in large areas. Mount the amps in a well ventilated rack somewhere near where most of the speakers will be, and make sure you've got enough headroom to run everything happily (amps driven frequently into clipping sound bad and they won't last). Split the speakers up such that each area has some drivers running off each amp, so if one of them goes down overnight you'll still have music everywhere. It can make the difference between the service call happening at 1am Saturday and 9am the following Monday!

If your background music system requires more low frequency support than can be found from a full-range in-ceiling speaker, add in some subs. In-ceiling versions of these exist too, but think carefully about placement. Putting subs next to walls will accentuate their effects. Make sure subs are phase aligned to the rest of the system. If your in-ceiling speakers are all running the same programme via the same signal chain and the roof height is consistent, the whole system should be phase aligned without need for further correction. For non-enclosed speakers this is ideal, since the entire ceiling cavity essentially becomes the speaker box. Be sure to double check polarity on every driver and amp connection!

It's possible to build an entirely ceiling mounted sound system now which sounds good and provides great coverage – the most important step to it being to plan right from the start. The reality is that regardless of gear brand chosen, doing this carries a certain cost. Trying to implement such a system for less than this will yield unsatisfactory results, so don't short-change your client and yourself.

CX SUGGESTS:

JBL Ceiling Speaker Calculator is a free program which helps select the proper JBL ceiling speaker to use for various applications, based on desired music level (for music systems) or background noise level (for paging systems).

www.jblpro.com



The TENDZONE M1616/EX (above) is a DSP/matrix mixer with 16 mic/line in and 16 outputs. It has a bunch of signal processing options, graphical Windows control interface as well as RS-232 connectivity to link to other control systems. www.tendzone.com



The Australian Monitor SY6125 (above) is a 6 channel amplifier capable of 125W per channel with all channels driven at 4 ohms. It's ideally suited to drive multiple zones with different sources or at different levels.

www.australianmonitor.com.au



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BACKGROUND MUSIC SOURCES

Having a great music distribution system is one thing – having the right source to plug into it is equally important. Choice of music can make or break the atmosphere of a bar, so choose carefully and also consider who else gets to make this choice. While something like an iPod is a cheap playback solution, without a physical barrier there's not a lot to prevent staff from connecting their own iPod and changing the music system. I should know, I do it at my gym all the time and I'm just a punter there!

Let's also remember that portable music players are designed to drive headphones, so what comes out of the mini-jack connector may be subject to certain frequency based level limiting to protect peoples ears. This is great for its intended purpose, but may have adverse effects when played back on a large sound system. If you must use such a device, try to find one with a dock which provides a proper line level output, and make sure your content is encoded at the highest possible bitrate – generally 320kbps for MP3).

Better yet, go for a commercial grade playback system. Various music servers are available which allow CDs to be imported as uncompressed WAV files and provide one or more zone outputs on line level connectors (commonly unbalanced RCA, but still better than a headphone output). Aside from the output quality difference, the fact these run on mains power rather than batteries is an obvious win for reliability. Such units allow you to build playlists, and can often be controlled externally by 3rd party control systems like Crestron, RTI or AMX.

If you'd prefer to leave music selection to someone who does it for a job, look at a subscription based music server. These systems usually run via a computer interface, and commonly have video or other visual content to accompany the music. Content updates are sent via DVD and can be loaded in the background while the system is still running,

and there's usually a helpdesk in case it all goes belly-up. Some systems have jukebox and DJ accessories for more interactive music choice.

Music channels on payTV services are also valid, though supply of payTV services for commercial environments can be costly. Not only that, but you'll also be subject to someone else's adverts running in your venue. It's probably best to stick to sports channels on such services.

Whatever playback solution you choose, don't forget music licensing. Aside from legal compliance, it's nice to think that the people whose music is played will actually make money from doing their job. Most venues playing mainstream music will require licensing from both APRA and the PPCA.

APRA licenses are based on the type and number of devices used to playback content. For venues without dining areas APRA License fees run from \$118.56/yr for a radio license to \$183.22 for background music sources, right up to \$377.21/yr per video jukebox or large screen. Reproduction fees may also be applicable for tracks reproduced onto digital players - these vary based on number of tracks in blocks of 500. For venues with dining areas, fees depend on dining area based in square metres. Background music licensing is \$124.39 for areas < 300 square metres, while larger areas cost \$248.81.

PPCA Licensing is based on the nature of the content and number of people hearing it. Background music will carry a different license fee to foreground music or live performance. As a guide example, foreground music in a bar is calculated as the higher of either \$0.0462 per person per night for each person of the venues capacity, or a \$154.55 annual fee. Example: A bar with 250 person capacity employs a DJ on Friday and Saturday night every week of the year. Licensing will be 250 people * \$0.0462 per person * 2 nights per week * 52 weeks per year = \$1201.20. Separate licensing would also be required for BGM at other times.

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Full information on licensing available at www.apra.com.au and www.pcca.com.au - if in doubt about licensing it's best to call and check your obligations!

When background becomes foreground – a.k.a. the DJ. Live music is great, and since a full band isn't always viable many venues are now opting to use DJs. If this is the case, you need to take some things into consideration.

First up, provide inputs for the DJ somewhere sensible – ideally wherever they'll be playing from. This should be a twin XLR wallplate, running balanced line level back to the venue sound system processing. Put a hard limiter on the input – this can be done inside a zone-processing device, or you can just jam the signal through a stereo compressor. Setup the input to limit at unity, and base your distribution level on a signal hitting the limiter at this level. It won't stop the DJ clipping their own mixer output, but it will prevent them from getting uncomfortably loud in the venue.

Provide DJ monitoring, and make sure it's loud enough for them to hear over the rest of the venue system. A pair of small active PA boxes is adequate for most installations. You can feed these off the main signal to the venue, or if you're feeling really considerate add in a "booth" input to the wallplate. Usually this output on a DJ mixer is an RCA, so consider providing a nice cable loom with all the right connectors to connect main and booth outputs into the wallplate.

CX SUGGESTS:

Nightlife HDMS is a PC based music video server with options for Jukebox and DJ interactivity. Content updates are delivered regularly by subscription, and users can custom build schedules to change playlists, visuals and volume at specific times. The system can also display digital signage for advertising.
www.nightlife.com.au



The UPA-1P active loudspeaker from Meyer Sound has a wide 100 degree horizontal coverage, and is capable of more than enough output to satisfy virtually any DJ in any bar situation.
www.meyersound.com.au

The Gov^nor SPL Limiter from Fitness Audio is a cost effective way to control SPL levels within a venue. Once setup and calibrated to the room the controls can be locked off with a coverplate, and optional SoundEar interface adds to the functionality.
www.fitnessaudiodistributors.com



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ZONE CONTROL & VOLUME

Different parts of venues have different requirements. Dance floors generally require playback to be loud, since it's the focus of the area. Seating areas will require lower levels, allowing punters to hold conversations. Bar staff need to hear drink orders (after all, this is what's making the venue money) - difficult when the music is too loud. Thus it is necessary to split a venue sound system into various areas or "zones".

Zones should be balanced such that content plays at the right levels in relation to each other. Overall level will be defined separately. If your speaker distribution has been correctly designed, you shouldn't need to tweak levels too much. Big speakers and amps on a dance floor will make more sound than a couple of small speakers in a seating area - it's basic physics.

Balance your volume levels in the system during commissioning - before it's handed over to your client. Start by running signal at normal operating level to the loudest area, and set this level appropriately. Work out from this area, adding in each zone at a suitable level. Leave some headroom on the overall system level, since the addition of punters will change the noise floor of the environment. Once the system has been running for a few weeks, seek feedback from the venue operator on the balance of the levels from zone to zone. Better yet, head in during operating hours and evaluate it for yourself. Note and implement any required changes.

An empty room sounds different to one filled with con-

ASPECT RATIOS

The big misconception about aspect ratio is that it relates to picture size - it doesn't. Aspect ratio describes the picture shape as a ratio of width to height. For a long time in Australia, there was only 4:3 aspect ratio, and there are still many such displays in use. Recent price drops on flat panel displays has seen the 16:9 aspect ratio gain favour. Both are valid choices, although 16:9 is probably considered to be the more contemporary choice.

Processing devices such as video routers and distribution amplifiers are dumb - they don't care what aspect ratio they're distributing. Source devices like DVD players and payTV receivers usually have an option to choose the aspect of the connected display device. Getting it right is as simple as making sure this setting matches the device to which the source is connected.

The problem occurs when multiple displays of different aspect ratios are used. If you output 16:9 to a 4:3 display, the image will be distorted. This is most commonly seen when 4:3 projectors and 16:9 flat screens are fed from a common source. Switching the projector to 16:9 and getting a wide format projection screen is the obvious solution here, however not all projectors support this aspect. You can run 4:3 mode instead and switch the flat panels to pillar-box mode, but then you've got a big chunk of screen real estate going to waste.

If you must mix aspect ratios, you'll need an aspect ratio converter (ARC) to do it properly. These aren't cheap, but then they'll also stop your system looking cheap - so it's probably worth the expense. Looking to the future, it seems

versations, so the overall level across the venue will need to change during the course of the day/night. A simple way to do this is providing a master attenuator which allows staff to turn the volume up or down manually based on their perceived needs. If your system is balanced well across its zones, such level changes should track well throughout the venue.

A better way is to automate volume in response to either time or ambient sound levels. The market is filled with excellent DSP based zone mixing systems, many of which can react to external triggers, allow audio changes based on schedules, or in response to reference mic inputs. A key benefit of these systems is that you can change the balance of sound between zones based on time of day - so an area which is a dance floor at nights can double up as a seated area by running at a lower level during the day.

These systems are great, but correct programming is critical otherwise they simply don't work. In order to achieve this, it's important to understand the dynamic of how the venue works. Where the crowds go at what time, and how big/noisy they are. I'd suggest starting with a basic setup, and optimising this based on real-time observation. Note that this will require spending many hours across several nights in the place - include this in your system quote!

CX SUGGESTS:

The XL2 handheld audio analyser from Neutrik Test Instruments

not only provides accurate SPL metering, but can also determine RT60 from an impulse or gated source, as well as check polarity and delay.

www.nti-audio.com



The Radius 12x8 Symnet processor from Symetrix

not only includes 12 mic/line inputs and 8 analogue line outputs, but main and secondary Dante audio networking ports. This allows for deployment of complex networks using standard IT infrastructure. www.symetrix.co



wide screen is here to stay, so it's probably best to run your devices in 16:9 mode. Setup the ARC to crop or letterbox the 16:9 image to 4:3, the distribute this feed to any 4:3 displays. This way images will be displayed correctly, regardless of device. For new installations, avoid devices that only support 4:3.



CX SUGGESTS:

The Extron USP 507 is an all-in-one scaler, video transcoder, and digital-to-analog video converter. It accepts a variety of input signal formats and aspects and can seamlessly switch between these. www.extron.com

The V-44SW by Roland

is a 2RU video switcher which accepts four SD and four HD analogue inputs, with scaling for each. A 9pin D-SUB connector allows remote operation.



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THE MILL REPORT

Making The Cut

BY ANDY STEWART

There's an almost limitless supply of music foisted on the world on a daily basis. To cut through that undergrowth – assuming of course you want to cut through – you need to make a viable product, not just wear the right clothes or play the right instrument.

Here at The Mill I'm currently mixing several things at once: instrumentals of songs by Paul Kelly from his new album, Spring and Fall, which I mixed here a couple of months ago (great album – go buy it); Brighter Later's debut album, entitled The Wolves (not sure why they've called it that), which sounds amazing; and a new single by a Victorian band that I first mixed 15 years ago... "We're a lot tighter now," was the claim of one of its band members. "We'd love you to mix the single."

"Sure," I said. "No worries at all." They're good guys, the singer has a booming voice... I was intrigued. I thought they'd broken up years ago. Then I listened to the multitrack...

I thought I was hearing one of the band's first recordings. "Tighter"? Um, well no, not really. 'Looser' would probably be a more accurate descriptor... 'as a goose' even. It will be a

challenge, but hey, I like challenges and I'm sure it will sound cool by the time we're finished with it.

Elastic Audio here we come.

But it's got me thinking...

OBJECTIVE OPINION – AN OXYMORON?

At the risk of sounding like I'm down on these guys – and I'm not (no really, I'm not) – my immediate impression of the single was that it really could have done with some professional help; an outside perspective on things like performance and arrangement at the very least.

Now I know the arguments for and against working with a producer all too well, but in the end it often boils down to

this: if you can't even bake a loaf of bread by yourself, how the hell do you expect to be able to make a decent album?

I like a crusty sourdough loaf, sure, but that doesn't mean

I know anything about

baking it. Music is a subjective realm

of course – most

creative processes are – and

not everyone

agrees that

bands should

employ a

producer.

But I hate

the 'subjective' cop-out,

especially

when it comes

from artists

desperately in

need of an outside

perspective.

Why, if everything

is so damn subjective,

do I consistently have

the same reaction over and

over to music that's produced

with little or no help from an

objective third-party? I mean there

are thousands of different musical aesthetics

and styles out there based on imperfect, heartfelt takes and

wonky overdubs. Why shouldn't this song feel comfortable

in those surrounds? What was it about this single that

set my mind rolling downhill about unstable foundations,

ill-conceived arrangements and unrealised potential?

SORRY, I MEANT THAT

In short, it's all about intention (he says trying to mortar the first objective brick in the wall while no one's looking?)



When someone clearly aims for X but gets Y, it's pretty obvious to someone like me who works with music every day, and when that happens chances are the song is on a rickshaw ride to nowhere. It may have been anyway of course, but now the odds are worse.

The obvious subjective comeback to this is: "Yeah, but just because you don't like it much Andy, doesn't mean someone else won't." Sure, I concede that point already. No contest. (The first brick goes in the subjective wall).

But then the argument flares up: "I understand I am but one opinion, but if that's true, why are you coming to me to mix your single? I'd argue that it's because I have an opinion that's informed, insightful... enlightened even! It's backed up by certain skills that nearly always produce the right musical results."

"Well, yeah that's true - but we're not going to concede 'enlightened'. We'll give you informed and insightful, but not that third one!"

On it goes. No one wins the argument.

OBJECTIVITY VS SUBJECTIVISM (Cancelled due to irrelevance)

The point I'm trying to make here is that believing in subjectivity - that's it's all just one person's opinion against another - has been the philosophy behind the thinking of countless albums that failed. There's no excuse for refusing professional help, if professional results are what you're after. If you're not, fine. But don't be surprised when you eventually put your song up against your favourite bands

on an iTunes playlist and it doesn't scrub up. In terms of the single I'm currently mixing, I'm frustrated by the notion that if I'd just been employed to produce the song in the first place - which admittedly means things cost a little more at the outset - the band would have been much better off, and the song far more likely to be heard.

Sure, you can have success on your own, without outside help, but it's rare.

I've got to get back to the console now... 'til next month.

**Andy Stewart
works and runs
The Mill in Victoria.
His credit list includes
Gotye, Paul Kelly
and The Whitlams
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Now you can make the band sound more purple...



BY JIMMY DEN-ODEN

Some years ago while working as the solo in-house venue tech, I decided I wanted to control lighting and audio from one console. I got a MIDI cable and some manuals and bought myself a world of frustration. It never worked real well. Now Soundcraft comes to the rescue, with the mixing console which does lights as well.

The Si Performer is based on the Si Compact series, and carries the same familiar feeling. Make no mistake the Si Performer is first and foremost a mixing console, the lighting functionality is secondary, playing second fiddle. The cool thing is that second fiddle is well integrated with the first.

You can assign any of the onboard 24 mic preamps, 8 line inputs and 4 stereo effects to the 80 mix channels which are spread across 4 fader layers. 14 auxiliaries plus 4 matrix mixes are available. The first eight aux busses are fixed as mono, while the remaining six can be switched to stereo (as can the matrix busses). Channels can be switched individually to pre/post fader mode as well as globally per send. The first press on the mix buttons for the matrix busses shows you the 14 aux/groups. The next press takes you to a page where you can add L&R, Right only, and Mono to the matrix. I'm not sure why it's on a separate page – it would have all fit on a single layer.

There are some limitations on the way you can structure the console. If you want to use a stereo input channel you can't select a pair of mic inputs – but an AES or line input



Almost anything you like can be assigned to any fader on the audio layers

pair is fine. The console automatically chooses adjacent pairs, but this isn't a major problem. You can't mix to a matrix from a channel – only from other mix busses. The stereo output can only be assigned to 2 sets of outputs simultaneously – the same goes for other outputs. Again, this is annoying but you could get around it by using a stereo matrix. Really all this stuff comes down to the question of “does it need to be able to do everything at once, all the time?”. The limitations imposed certainly aren't going to be obstacles for practical operation of this desk within its intended market sector.

Four Lexicon effects are included, each with its own mix bus and return. Back panel connectivity includes the 24 mic inputs, 8 TRS line inputs, AES in and out, wordclock input and 16 analogue XLR outputs. An Ethernet port allows connection to the console remotely via either computer or iPad app. Finally there's a 5 pin XLR DMX port.

Additional audio I/O connectivity comes via the expansion slots which can accept a variety of cards including Cat5 and Optical MADI. This allows for connectivity to the remote stage rack, providing additional inputs. The “auto-complete” function allows you to patch one channel then the next 7 successive ones with a single button. This is a good timesaver, and really illustrates that the console has been designed with live users in mind. All told you can assign 64 mic channels to the surface, with the remainder being stereo inputs and effect returns.

Some nice touches are included on this console – for instance when you assign a channel to LR and C it automatically goes into LCR mode. Using the touchscreen to get to channel input settings, you can then adjust the stereo width to add centre panned channels to LR. Nothing is ever more than one or two screens away at most, so again it's quick to operate. The on-screen keyboard is small but workable enough – plugging in the USB keyboard from desktop didn't work. Not surprising really – if you need a full-size keyboard use the remote software.





Two expansion slots allow heaps of connectivity

See the light

Pressing the ALT button while pressing a layer select button takes you to one of four DMX layers. Think of it like a four preset lighting board. Each layer controls the same 22 DMX addresses, starting at address 1. For each fader there is a master fader, which can then be replicated onto any of the audio layers. So basically you can set-up four lighting scenes and cross fade between them.

The Si Performer quickly sorts the lighties from the soundies, who by default push the lighting faders to unity (which is actually about



Four Lexicon effects are easy to recall and adjust

90% lighting intensity). 100% is at the top of the fader. It sounds funny, but the difference in mentality is really obvious! I'd like to see a menu choice to have 100% intensity at the unity fader position. Julius reckons beyond this it should drive the lights to 110% (Gronk!). The channel ON buttons become flash buttons in lighting mode. Console states (audio and lighting) are recorded into "cues", which can be triggered using buttons above the master faders. The console allows you to edit cues to define LX fade times. Just about every function on the console can be "isolated" from scene recall – this only seems to affect recall of such functions – I isolated lighting functions and they still stored okay in a cue. Once de-isolated, the LX state recalled fine.

New security features have been included in the current Si Compact & Performer software release. These allow definition of multiple users and very specific control over exactly what each user can do. This was one of our earlier gripes about the early Si Compact – it's really nice to see it's been so well addressed.

USB support is included for storing and recalling shows, so it's easy to get the console back to where it's supposed to be. So far as how it sounds, our expectation is that if it follows in the footsteps of the Si Compact then it will be great. I'm taking it to a gig this weekend to validate the theory, and I plan on not only mixing but also lighting the band. Pretty cool stuff.

The Si Performer is going to do really well in small environments where novice users are in control, or there's not much real-estate for a control position. The console itself is still as easy as ever to use, and the lighting functionality just adds another dimension to an already very worthwhile product.

Both thumbs up.



Watch on CX-TV.com

BRAND: SOUNDCRAFT
 MODEL: SI PERFORMER 2
 RRP: \$10,995 INC GST FOR THE
 CONSOLE. \$5,995 FOR 32X16 SI
 COMPACT STAGEBOX.
 PRODUCT INFO: WWW.SOUNDCRAFT.COM
 DISTRIBUTOR: WWW.JANDS.COM.AU

The Followup...

- I took the Si Performer to the gig.
- I mixed 3 bands (FOH and a couple of monitor sends).
- I lit them at the same time.
- I used cue lists.
- I used reverbs.
- I smacked the pre-amps on the head just to find out what would happen. They survived, so did the mix.
- I didn't need a lesson to use it.

The gig was a roaring success, and I really enjoyed not having to manually recall stuff off crib sheets between bands. It all worked how I expected it to, and more importantly how I wanted it to.

This is a console I'd happily use any day, for almost any application.

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Robe ROBIN DLS Profile

Open and shutter case

BY JIMMY DEN-OUDEM

The DLS Profile turned up at the bunker in the standard Robe apocalypse-proof road case, and as I set it up it seemed to weigh relatively little. 22kg in fact. Outwardly it looks like every other Robe fixture of its kind, a zoomy profiley moving light thing. Just like the DLS we reviewed a few issues back in fact. The big difference becomes apparent when you switch it on.

The DLS Profile is indeed a zoomy profiley moving light, but it has an RGBW LED engine. So instantly it's quieter, it runs cooler than a discharge lamp, and the colours are vivid and immediate. Add to this a 4 blade framing shutter system and you realize it's not just another moving light... Let's look at the obvious stuff first. The base of the unit is pretty standard Robe fare – 3 and 5 pin DMX, ArtNet, MA Net, MA Net2 all on the expected connectors. Wireless



DMX optional. PowerCon in and loop out. Robe Navigation System (RNS) menu for setup – touch screen and four buttons. Knows when you turn it upside down. All normal, yes? Good.

To a degree, the normality continues inside the head: 540 degree pan, 280 degree tilt. Movement happens in about the time you'd expect – it's quite agile. There are pan and tilt locks for transit. There's a rotating 3-facet 11-degree prism, a variable frost filter, and quite a good zoom which allows a 10 to 45 degree beam angle. The single rotating gobo wheel is indexable and has 7 slots plus an open position. The selection of gobos includes several break-up types and other interesting patterns – it's nice to see some new gobos as stock. The glass animation wheel can be used in conjunction with gobos or on its own, and you can achieve interesting effects playing with focus between these.

Now it all changes

The light source in the DLS Profile is an RGBW LED module, the specific power of which we were unable to determine from the spec sheet. Let's just say it's bright – you could mistake it for a discharge fixture. In open white it performs pretty well, but really comes into its own in saturated colour. Under full white light in our studio, we were able to do a wide gobo projection with prism onto a black cyc and still see the image clearly – even in deep red and blue.

Impressive. The joys of additive colour mixing! There's a 237 value "virtual colour wheel" same as on other Robe fixtures, so presumably colour matching to other Robe fixtures is easy. The DLS Profile will also allow you to colour-mix free form in RGBW or CMY modes. Open white can be any of 5 colour temperatures between 2700K and 8000K. There is no flicker apparent on camera, and being an LED source the fixture can strobe at up to 20 fps without mechanical noise. 3 DMX modes are available requiring 36, 38 or 47 channels depending on whether you want 8 or 16 bit control over various parameters.

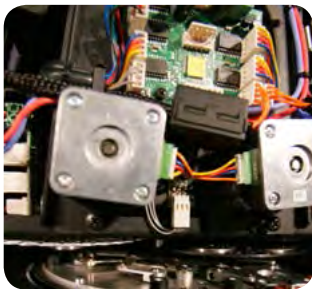
Power consumption maxes out at 550W, though that's with every LED running full tilt. In typical applications it's stated to be around 215W – which is a pretty good environmental selling point. A "lamp on" function appears in the RNS menu, but we're not quite sure what it actually does since there's no lamp to ignite?

The DLS profile is touted as being specifically for TV users, and given the very minimal amount of noise it generates and the variable colour temperature feature it certainly fits the bill. It's probably the quietest large moving head fixture I've seen this year. But TV isn't the only place you can use the DLS Profile.

The near-silent operation added to the four-blade shutter system makes it a solid candidate for theatre applications. Each shutter can be brought into or out of the beam and then tilted left to right. This uses 8 channels, and a ninth allows +/- 45 degree rotation of the shutter assembly as a whole. The shutters are very quiet when moving even at reasonable speed. Maximum movement speed is very fast. Because the shutter assembly sits at a different part of the optical path, you can focus such that either the shutters or the gobo wheel is sharp – but not both. The upshot is that drifting focus between the two yields a nice morphing effect – coupled with a subtle colour change it looks really cool.

Perhaps the only real downside is that when zoomed really wide the shutters appear to be curved until you get them a certain distance into the beam. Not really something that can be helped – but if you stick to the narrow end of the zoom and use less shutter it's not a drama. In fairness to Robe I don't know that such distortions could be easily avoided.

The DLS Profile is more than I expected it to be. It's lighter and quieter, yet punchy enough to use in a bright studio or stage situation.

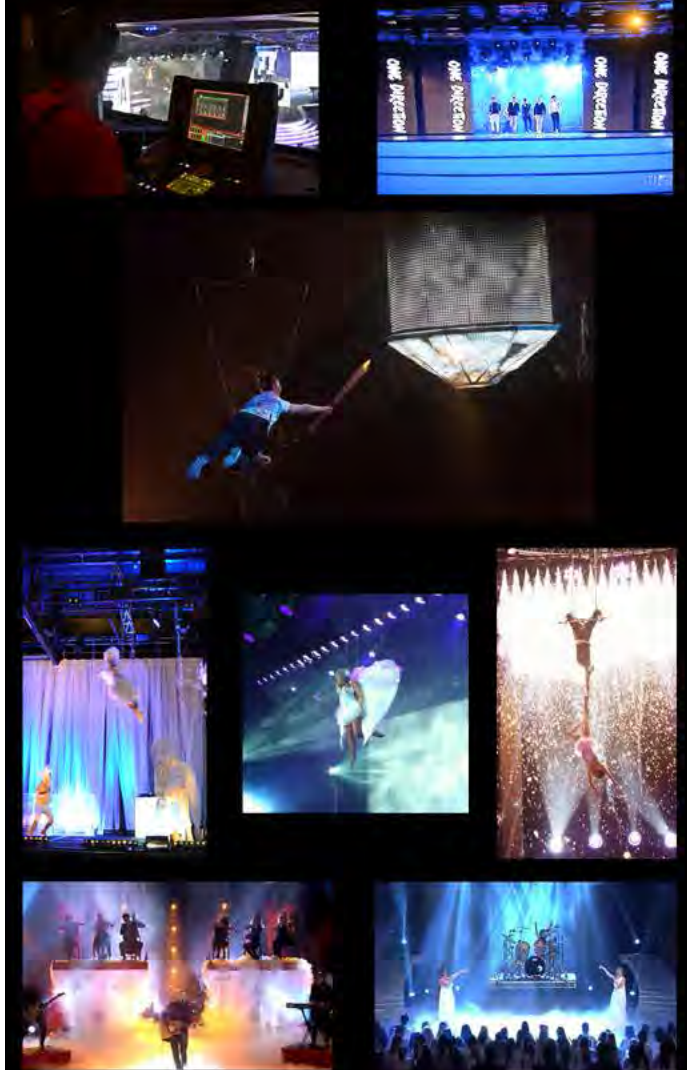


Less beam heat allow for tightly packed internals



BRAND: ROBE
 MODEL: ROBIN DLS PROFILE
 RRP: \$12,978 INC GST
 PRODUCT INFO: WWW.ROBE.CZ
 DISTRIBUTOR: WWW.ULAGROUP.COM

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HD PTZ images, all from
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Sony

BRC-H900 Camera

BY JIMMY DEN-ouden

If you've ever watched the footy on TV, you'll be familiar with the big overhead shot of the stadium taken from way up on high (usually one of the lighting towers). It's called the beauty shot, and traditionally once it's established it doesn't move a lot.

Sending an operator up the long ladder just to tweak a shot isn't practical or very fast, so it's in such a situation you'll commonly find a PTZ camera. Such cameras are now found increasingly more often in studio environments too. When a show has a predictable flow (eg: news broadcasts) several cameras can be controlled by a single operator. Preset positions allow the camera to return to any pre-defined shot quickly and accurately.

PTZ is short for Pan, Tilt and Zoom; functions which are remotely controlled just like on a security camera. The big difference with the BRC-H900 is that unlike a security camera, it's a broadcast grade device. As such it carries a suitable pricetag, and a host of other features you won't find on simple CCTV units – not the least of which is image quality.

44 | www.juliusmedia.com CX77

The BRC-H900 has a 1/2 inch image sensor with 1920x1080 resolution. It natively supports HD resolution and this can be output in Pal or NTSC at 1080i or 720p. HD/SD SDI output is a standard inclusion as is a composite video output – all on BNC connectors. YC is available on an S-video connector, and RGB/Component on a 15 pin D-Sub. The long and short of it is you can basically get any signal format you're likely to need out of the unit, several of them simultaneously. You can also reference it to an external SPG. Control of the unit is via the Sony VISCA protocol, which can run either RS-232 via an 8pin mini DIN, or RS-422 using the 9pin phoenix connector. Up to 7 cameras can be daisy chained together, across a cable length of 1200m per hop. At this length you'll need to transport the images via fibre, since HD-SDI won't run this far over copper. Addressing is handled by tiny DIP switches in the base. The DIP switches are kind of hard to actuate (and in fact even see), but once they're set further changes would be rare. The camera connects to a Sony RM-BR300 remote control unit, which will run up to 7 cameras simultaneously. We hear there's an Ethernet control board (model name BRBK-IP10) on the way for the BRC-H900 – this fits into the expansion card slot in the base and links to the new Ethernet enabled RM-IP10 remote.

The BRC-H900 can store up to 16 preset positions (including zoom and focus), and the recall on these is unnervingly accurate even at the long end of the lens. One touch focus and white balance functions make operation easier for novice users, though white balance can be manually selected from several presets. Focus can also be manually dialed in. The RM-BR300 allows you full control over all the available

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MEETS OR EXCEEDS:

International Standard BS EN 13200-3:2005 (Spectator Facilities) Annex A
WA Health Directorate 2004 (Guidelines for concerts, events and organised gatherings)
Crowd Control At Venues And Events, A practical Occupational Health and Safety Guide, WorkSafe (Vic) September 2006
Australian standard AS/NZS 1170 parts 0,1 and 2:2002 (AKA loading codes)
Australian standard AS/NZ 1664: 1: 1997 (Aluminium structures)
Australian Standard AS 4687-2007 (temporary fencing and hoardings)
MCK Metals Pacific. Strength and resistance load testing, November 2006
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imaging functions of the camera, and also enables access to its on-board menu system which is displayed on the composite output. If you just need to do a quick local point and shoot, use the IR remote control included with the camera. You'll still need a monitor of some kind to make menu changes.

The base of the BRC-H900 has threaded holes for mounting on a tripod, but other mounting choices exist. If you want to hang the camera inverted it's not a problem – there's even a menu option to invert the video output. It all makes sense. Pan/tilt operations are smooth and virtually silent, and run from 0.22 to 60 degrees per second. Pan is -170 to +170 degrees, and tilt -30 to +90 degrees. This is effectively 340 & 120 degrees range respectively – remember that it's a camera not a moving light; rarely would the BRC-H900 need to see behind itself.

The integrated lens has a nice 14x optical zoom, and at the wide end of this provides a 59.6 degree angle of view. The sensor can apply up to 24dB of gain (or attenuate by 3dB), though manual control over this particular function on the RM-BR300 doesn't feel as responsive as a traditional CCU. The auto setting is pretty good anyway so I'd probably leave it there, especially if I was trying to concentrate on positioning multiple shots at once. There's a shutter which runs from 1/8000 to 1/50 s intervals, and the sensor is good enough to get decent images even in low light conditions. We spent some time playing with the BRC-H900 under a variety of lighting conditions and were very pleased with the results across the board.

All the expected connectors, plus an option slot for further expansion

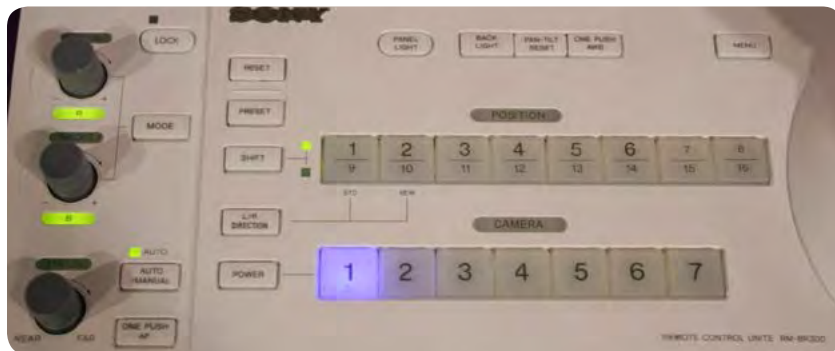


Remote control unite - we must have received the french model?

The RM-BR300 remote is quite intuitive to operate. Pick a camera then point it. It's built for right handers, with the big pan/tilt/zoom control joystick at the far right end. Two modes are available for the joystick, and small movements translate to slow camera moves. A heftier push on the stick sees the camera accelerate and if you're not careful this can see you overshoot your mark. Whilst I'd be happy to setup shots using the stick, tracking a moving object live to air would require some practice beforehand.

Adjacent to the stick are 7 camera select buttons, and above this 8 position recall keys with a shift function. Remember that the position is stored in the camera, not the controller. The unit has tally inputs which can be triggered in a number of ways, and these pass signals back to the camera telling it when to turn on and off its tally light. This is a nice inclusion for studio applications. Image control parameters are handled at the far left, with white balance, brightness and focus controlled by 3 encoders with switching functions.

There's a lot of appeal for the PTZ argument, not the least of which is savings on multiple camera operators. While a bunch of PTZ cameras will never yield the same results as



human operated ones, in cases where moving shots aren't needed there are savings to be had. The pricing on the H900 is quite reasonable considering the caliber of the product. Beyond just studio use, this camera and control combination could quite easily find itself on large shows where quality IMAG is required. It's certainly up to the task, and affords new options to pull shots from elevated positions such as overhead trusses.



BRAND: SONY
 MODEL: BRC-H900 & RM-BR300
 RRP: BRC-H900 - \$14,500 PLUS GST.
 RM-BR300 - \$1,200 PLUS GST.
 PRODUCT INFO: PRO.SONY.COM.AU
 DISTRIBUTOR: PRO.SONY.COM.AU

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What a difference a DAC makes.

BY JIMMY DEN-OUDEM

BMC-2

I first ran into the BMC-2 early this year on the CX Roadshow. Thomas Lund was using one to conduct demonstrations in his seminar on loudness. The thing which appealed to me then and still does now was that the unit accepts a variety of digital signal formats including the optical one which appears on my Mac.

The BMC-2 is at the core a DAC (Digital to Analogue Converter) with an attenuator on the output. It's designed to control a pair of stereo studio monitors, and not surprisingly it does this very well. Physically the BMC-2 is quite a compact unit, designed to sit neatly on your studio desk. The control face is sloped toward the user, and ergonomically it's very nice.

The back panel is sort of divided into digital and analogue sections. On the digital side, four optical connectors provide connectivity in both TOSlink and ADAT formats. There's an input and output for each, and the same for S/PDIF on a pair of RCA connectors. Analogue output is balanced stereo XLR connectors, with a separate 6.5mm stereo TRS jack for headphones. Adjacent to the headphone socket is the DC power connector.

The BMC-2 ships with an in-line switching power supply that generates 12V at 2A from any input voltage between 100 and 240V AC at 50 or 60Hz. There's a lot of conjecture about the importance of power supplies on DACs – one of my friends found that changing the power supply on his DAC prevented it from automatically jumping inputs when he turned the kettle on. A decent power supply is pretty important even if there is no kettle in the room. Being typically suspicious of small switch mode supplies, I took the included one to my power supply guy (an electronics tech of some 20+ years experience) for testing. He loaded it up and looked at the output on the oscilloscope. The verdict is that it's clean and very stable indeed. So that's good.

Setting up the BMC-2 is straightforward – connect power, inputs, outputs, and switch everything on. The left section of the control panel is devoted to input selection, allowing you to select which connector to use and in the case of ADAT input, which of the first two channel pairs. Individual lock and signal LEDs are provided for each input, as well as indicators to show samplerate. I tried 44.1kHz, 48kHz and 96kHz sample rates, all of which the BMC-2 accepted with

Lots of digital in, balanced analogue plus headphone out

no argument. Analogue out is default, pressing the ALT button switches to digital - you can choose which digital output. Switching this is a "hold the button" operation. Simple.

All digital inputs are re-clocked using TCs JET technology. Basically this corrects jitter within signals before they get converted, giving a more true rendition of the input.

The volume knob on the right side of the panel is the only control without a label, but since it's the most prominent thing on the device its purpose is fairly apparent. A "VALID" LED adjacent indicates when the volume control is in-line. A smaller adjacent pot takes care of headphone level, and there are switches for reference level, alternate monitors, dim and cut. The cut button doubles as the power switch when held down. The reference button allows the BMC-2 to bypass the volume control and instead recall a preset level, which can be changed by holding down the button.

Stereo LED peak meter ramps display signal levels from -60dB to 0dB, and beyond this the overload LED illuminates. The last (and my favourite) button on the BMC-2 is the Stereo/Mono/Side mode selector. Stereo and Mono are pretty obvious, while Side does the same thing as on the TC Impact Twin we looked at a while back. It sounds to me like a mono sum where one channel has first been phase reversed, and the stuff it shows up is really interesting.

Listening back to full quality WAV files, the BMC-2 sounds great. Switching to MP3 and other compressed formats, you hear them for what they are. Flipping into SIDE mode you can hear all the data compression artifacts from these formats, and discover just how ugly they really are. Most of the time the answer is VERY.

The BMC-2 tells it like it is – warts and all. Really this is a good thing though – after all who wouldn't prefer to see the wart in the mirror before going out and showing it off to the rest of the world? It's a nice device which does exactly what it's supposed to do. The other nice touch is that because it uses the on-board optical audio output from my machine, there's no additional load placed on firewire or USB busses. Even more win.



BRAND: TC ELECTRONIC
 MODEL: BMC-2
 RRP: \$749.00 INC GST
 PRODUCT INFO: WWW.TCELECTRONIC.COM
 DISTRIBUTOR: WWW.AMBERTECH.COM.AU



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DYNACORD TS400 & PSD215...

KICKS ARSE

BY JIMMY DEN-ouden

**DYNACORD IS OWNED BY BOSCH,
AND THEREFORE ASSOCIATED BY
EXTENSION WITH EV.**

**IF YOU LOOK CLOSELY AT SOME
AMPLIFIERS MADE BY THESE
COMPANIES YOU'LL FIND THAT IN
SOME CASES THE ONLY REAL
DIFFERENCE IS THE BADGING,
MODEL NUMBERS AND HOW THE
POWER OUTPUT IS MEASURED.
I DIGRESS.**

The TS400 is called a “full-range vertical cabinet” on the front of the brochure. , but the reality is that unless you’re just dealing with vocals this isn’t really the case. Frequency response is stated at 74Hz-20kHz (-10dB). RMS power rating is 600W, peak is 2400W and max SPL is stated at 131dB @ 1m/calc. It’s a passive box with a four driver plus horn arrangement. The two outer drivers run low-mids (up to 400Hz), the two inners up to 2.5kHz, and the horn picks up from there and runs to 20kHz. Presumably there are some passive internal filters to facilitate all this. Nominal impedance of the box is 4 ohms, and nominal coverage 90x40 degrees (HxV).

For our review, the TS400 was matched up with a PSD215 active subwoofer. The PSD215 has an internal DSP, and enough amplifier channels to drive itself and the TS400 with 1000W RMS each. You can even run a passive sub off it at the same time. Max SPL @ 1m/calc is 128dB, so it’s a pretty good match for the TS400 in output. Weighing 37.2kg it’s not light, but for another 2.4kg you can add wheels which makes shifting it about quite easy. Handles are in the right places, and there’s a threaded pole-mount on top. Our test kit was one sub and one “full-range” top joined with a pole and a speakon cable. We recalled the TS400 preset on the amp DSP, plugged in an audio interface and ran some program. There’s an option to go cardioid, which basically means you can stack three subs, spin the middle one and get better low end directivity.

It’s worth discussing the DSP interface on the back of the sub. It’s got a sizable screen with four context-sensitive soft keys beneath, and a rotary encoder / pushbutton adjacent. Navigating the interface is really easy, and from within it you can apply delay to the sub or system as a whole, recall

**PSD215 -
AGAIN IT LOOKS
SUBTLE...**

**HANDLE FOR
CARRYING,
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SUB DSP CONTROL PANEL

presets, generate test tones, and even apply basic EQ. The EQ is a 6 band graphic which seems like an odd choice. I'd rather a 4 band parametric personally, but the graphical aspect of the GEQ interface makes it a lot easier for novice users to handle.

The DSP includes two presets for the TS400 – Euro and US. Notionally the US preset is a bit thumpier down low – to me it seemed more like it attenuated the highs a bit but the difference is so subtle it's kind of hard to pick. There are some generic presets in there too for using the PSD215 to run non-specific top boxes.



There's a lock option on the menu, but it didn't seem to prevent me from making changes to some items.

GIVE ME MY BROADSWORD

I've often thought of Dynacord gear as being somewhat utilitarian. It's not always the most elegant solution to every application, but it's never failed to get the job done. More importantly, no Dynacord thing has ever failed on me. The TS400 / PSD215 combo sort of breaks with tradition in some ways. It looks a bit funkier than some of its peers, and physically it's certainly easier to handle than a Cobra system. But my word does it ever go hard. It's seriously loud and for all my efforts I couldn't get it to break up. Or down.

From its appearance the system as a whole looks like one of those nice visually appealing things we use to maintain sightlines on corporate gigs. Maybe a little bigger than most, but still. Fact is that after the boring speeches are over and the party band gets going this system will more than do them justice. It's got SERIOUS legs, and straight out of the box it sounds nice. The pattern control is good up top and while it starts to get a bit more omni-ish in the low end I don't see massive spill in frequency regions where feedback becomes a problem.

Characteristically from Dynacord it's got really strong upper mids - that 2.5kHz thing that makes the Cobra system throw so well is still in there. But somehow it seems more refined - strong but not brutal. It doesn't have the characteristic low-mid hole which is so apparent on some systems of this type, probably due to sheer box volume and driver area.

Honestly I wasn't expecting too much from this kit when it arrived. I couldn't be happier to be wrong – it seriously rocks. Hats off Dynacord, you've done well.



BRAND: DYNACORD
 MODEL: TS400 & PSD215
 RRP: TS400 - \$3049.00 INC GST.
 PSD215 - \$4869.00 INC GST.
 PRODUCT INFO: WWW.DYNACORD.COM
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2,100w RMS

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300w RMS

Find your way through...The Maiz



The phony offer

BY JOHN MAIZELS

For the last eighteen months we have received regular call centre transmissions from a phone company that wants to give us the deal of a lifetime on our Telstra account. It's a good deal, too. The sales pitch goes like this: "Dear Mister Maiz, you don't have to do anything because we're pleased to announce that your Telstra bill is dropping to \$55 per month. All your local calls will be untimed and unlimited. The line rental is included as well. This offer is exclusively given to long-standing Telstra customers." OK so far, but then it gets weird. "We need to know that you are between 18 and 75". Any sales droid with a calculator should be able to infer that I'm not likely to be a long-standing Telco customer if I'm under 18, because kids don't stand. What about being over 75? Well, according to Mr Droid that would make me a pensioner and then I'd already be getting this deal. Bring on the day, but I wasn't about to divulge my age for no valid reason. I told him I was within the acceptable age bracket. He must have wet himself with glee: finally a live one, and we're through the hoops!! "Oh good sir, so please hold the line while I transfer you to my colleague who can help you take up this offer".

The you-get-this-deal conversation has happened a few times, but it usually doesn't get as far as this. I've been more inclined to ask them politely to take me off the list, and not call me again. Then they call me again. I know from experience that asking them to go away is followed by a very insistent "why?". They know to ask me for a whole lot of information that I don't want to give. I know that if I ask them difficult questions about the product, the line will mi-

raculously disconnect. "Click". On this occasion none of that happened and I was on a roll, intrigued with getting this far into the conversation. It was like I'd progressed another two impossible levels in the phone equivalent of Angry Birds.

Before he could transfer me, I played along with the call, and asked him where he was calling from. "I am calling from Victoria". "Where in Victoria?" "In Victoria". Strange echo on this line. I tried again: Victoria is a big place; are you in any special part of it? "I am in Melbourne sir". Ah, good. I was there only yesterday. Which part of Melbourne? "It's in Victoria". I noted that the call centre had done a good job selecting agents who could pass a test on Australian geography AND were good conversationalists, if slightly loopy. After only a few more questions, I had their address in Albert Park Road and thought I was really getting somewhere when suddenly the voice changed. My stream of non telephony questions had got me transferred to the person who must have been listening across the line for coaching and training purposes.

Now I was talking to Ryan, the supervisor-manager. Ryan (and who would have thought?) had the same foreign accent as his colleague. So we got down to brass tacks. What did I have to do to take this offer that didn't require me to do anything at all? Yes, one thing: I would need to sign over my Telstra account to their company and then everything would be sweet.

And it would be, except that TheMaiz phone lines haven't been with Telstra for over 12 years, and aren't about to be. Oh well. Seems I can't get that offer ever. Seems I can't fix anyone's database records either. I'll just have to wait for the next call from Mumbai (a subdivision of South Melbourne) and tell them again.

Any sales droid with a calculator should be able to infer that I'm not likely to be a long-standing Telco customer if I'm under 18, because kids don't stand.



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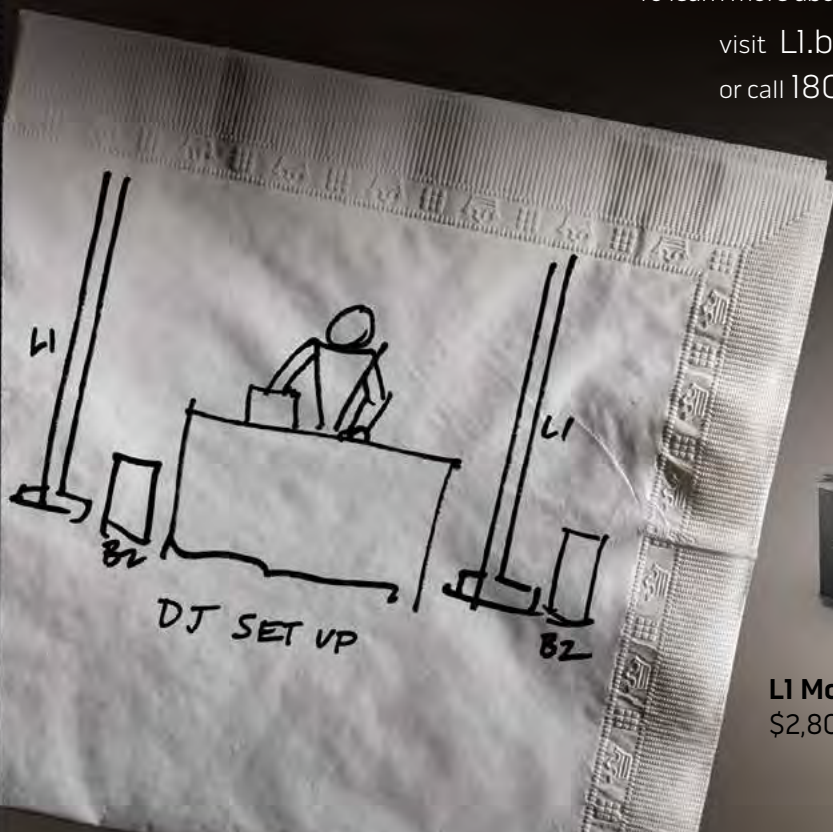
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Find your way through...The Maiz

Be back to you in a fraction of a second

As we move from analogue to digital everything, some previously don't-care rules of physics start to apply.

When you were a kid in high school you should have learned that nothing can travel faster than the speed of light. Nothing, that is, other than a police vehicle which is about to give you a ticket, the rumour that you've broken up someone else's marriage, the person who sniped that must-have-widgit from right under you on eBay, or the piece of gold that just fell out of your tooth. Gold teeth break another law of physics: despite being more dense than everything else, they dissolve into invisibility when placed in a sink. Somewhere in the greater sewage system, there is enough gold to buy the sewage system.

Light travels at light-speed, which is kind of fast. Electricity travels at almost the speed of light in a wire, and the "almost" is of no practical impact if the electricity is carrying audio. But sound travels at the speed of sound outside a wire and that's also important. If you put on a pair of headphones and talk to yourself through a microphone, you hear two things: sound travelling to headphones at the speed of light, and sound travelling through your head at the speed of sound. As long as those two sounds arrive at the ears in reasonable alignment, all is sweet. In the scheme of analogue everything, it's hard to misalign those two sounds even though your bones don't conduct at the speed of light. Mostly this works because bones conduct sound quickly enough, which is true. Even for that performer on your gig who has an incredibly big head. "Quickly enough" is the important bit.

Speed of sound becomes a different problem when you move to digits. Digital processing always adds delay to a signal. That's because it takes time to do maths, just like in real life, and because most digital processes add a bit of buffering to ensure that the electronics gets everything right before the signal is shipped off to the next process. Delay, delay, delay, some of it decidedly nasty. It doesn't take too many processes before the delay starts to add up in ways that aren't good. Go back to the experiment of listening to your voice on headphones. As you add more and more delay to the headphones, the voice in your ears gets out of step with the voice in your head. Despite several squillion years of evolution, no Darwinian effect has yet had time to teach our brains how to deal with hearing ourselves through a digital

delay. That means the brain has no coping mechanism, just some threshold at which it becomes important.

Above that threshold it works a bit like this. The first thing you notice is something wrong, but maybe you don't know quite what. A bit more delay and you start to hear comb-filtering effects as the brain adds the two signals together. Your head becomes a flanger. It's weird, but tolerable if you absolutely have no alternative, and you can learn to deal with it, maybe. A bit more delay and you start to hear a semi-distinct echo. At this point you might want to go and look up "Haas Effect", and discover how slight delay (and even lots of delay) has been used to great effect in control rooms and Dolby surround. As the delay knob is turned up to extreme, you get beyond Haas Effect and move into being unable to deal with the delay at all. Feed 100mS of delay into someone's headphones and watch them squirm.

We need to understand the impact of delay. All digital consoles introduce delay; it's unavoidable and it comes with the territory. Design engineers go to very short lengths to keep those delays to something small in the hope that the delay won't be noticeable or troublesome. Most manufacturers and all salespeople will tell you that anything less than three to four milliseconds is don't-worry or maybe don't-care. True if you're listening to yourself on foldback speakers, if you're listening front of house, or even if you're listening to monitors in an anechoic chamber. But as soon as you start listening to yourself on headphones it's vitally important. Where would that be? In-ear monitors, for one. Talent IFB. All radio presenters.

I'm sort of comfortable with the concept that most people don't react to a delay of less than three milliseconds. But here's the thing: go and try to find anyone who can tell you in cold hard researched terms what you REALLY need to know, which is whether a couple of milliseconds of delay is important to the artist who pays your wage. There's really only one person who can tell you that, and it's the artist. And just like in the early days of transistors, just because the test instruments tell you that there's no distortion doesn't mean that nobody can hear the effect, or that it isn't off-putting, or that it isn't important. I get tired of salespeople who say it isn't important, because they aren't the end-user, and they aren't the people who feel the pain.

The new world is one of big shiny digital consoles that have so much to offer in terms of everything operational, and where electrical measurements become insane: no noise, infinite frequency response, unmeasurable distortion, and they never go out of whack or need tweaking. But they do have delay, and as you feed one console into another, and loop through and back and around a couple of times, and in and out of outboards, and... well, those delays add and sooner or later you need to expect that someone will notice. Be aware, be very aware, and ignore at your peril. Oh, and check that you have a few short-path mix-minus feeds available for the talent. **Just in case.**

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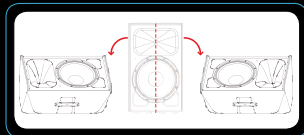
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DECEMBER
2012

ROAD SKILLS

ELTON JOHN

MAROON 5 + VEGAS
THE LIVING END
HUMAN NATURE
THUNDER DOWN UNDER TOUR

BY CAT STROM

ELTON JOHN PHOTOGRAPHER - Troy Constable
MAROON 5 PHOTOGRAPHER - Matthew Hocter
MADONNA PHOTOGRAPHER - Todd Kaplan

Last week Sir Elton John played the Sydney Entertainment Centre for a record-breaking 43rd time. His second Sydney show was a solo show that highlighted his exceptional talents as a pianist with the night ending with a set with Sydney duo PNAU. Love him or loathe him, there was no doubting his performance skills.



ELTON JOHN

I can't remember the last time I saw an arena concert without a video screen playing a crucial element in the set and lighting. The result was quite refreshing as lighting designer Kevin 'Stick' Bye delivered a more old school look (even though there were no PARs or ACLs) making excellent use of a mammoth SoftLED curtain run with a Catalyst.

"Sir Elton doesn't like to see a big version of himself up-stage," commented Stick, who has been lighting Sir Elton for the past thirteen years. Stick reveals that Sir Elton does not get very involved in the lighting of his shows rather trusting his crew to get on with their job.

Stick has no particular design philosophy when lighting Sir Elton, describing his lighting as 'very old school flash and trash'. This was a show about the artist and not the staging. It was about musicianship with a nice design package around it.

"I tend to make sparse, pretty looks because the stage is so basic," he said. "I have no set, high risers or platforms to light because we often sell at 360 degrees. I use lots of graphics and tasteful looks and make it grand by bringing the lights out into the audience when the songs call for it."

As the show will tour Asia after Australia, the lighting is simple in design with four straight trusses. In Sydney the rig was Vari-lite 3000 and 2000 wash, Clay Paky Alpha Beams for front wash, Sharpys on the floor, Martin MAC2000, a handful of ETC Source Fours for key light and heaps of blinders for audience abuse as Elton does like to see the

crowd between songs. An MA Lighting grandMA2 was in control with all lighting supplied by PRG.

“Some of the Asian venues are challenged enough just doing four straight trusses but I pack them with lights - as many as I can get away with considering weight restrictions!” added Kevin.

Matt Herr, Sir Elton’s FOH mixer, hails from a Clair Bros background having worked for them for twenty years, but rarely gets one of their PA systems on a run like this. In Australia, JPJ Audio provided an L’Acoustics V-Dosc system which he describes as fine; he just has to think a little differently.

“I discovered in the Sydney Entertainment Centre that if I drove it a little harder than usual, it sat a lot nicer; if I held back a bit it got a bit wobbly,” he remarked. “I have twelve cabinets deep on the mains with four dV-Dosc cabinets underneath, with eight and four on the sides and twelve subs aside.”

Sir Elton is the only one on wedges with a stereo vocal mix on the Clair 12AM wedges and the dual 12-inch for stereo band mixes.

“They are extremely loud in fact he’s the king of loud!” exclaimed Matt. “The band is using in-ears with Sennheiser packs.”

Matt prefers to mix on an analogue Yamaha PM5000 console, a product he has always liked and the fact that Sir Elton always has Yamaha pianos plays a factor in the decision too.



“I like the analogue sound, it sounds like it looks ...BIG and besides, my digital recall is right here.....” he added as he tapped his forehead. “Yamaha consoles are very reliable and the customer support all over the planet is second to none.”

Effects include a Bricasti M7 for the drums, a TC 2290 for vocal delay a couple of times, two Eventide Eclipse Harmonizers and a Lexicon 480 for piano vocals.

“There’s a standard of excellence that has to be met for Sir Elton,” concluded Matt. “The hardest thing is getting the low end right, if you can get the low end tight and punchy, you can build everything on top of that and then it’s fairly easy.”

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MAROON 5

Maroon Five filled Sydney's well loved Entertainment Centre, assisted by the local Evermore. The girlie crowd jumped up to clap along with 'Hey Boys and Girls', then queued half way round the foyer for the meet, greet, and buy stuff bit. Good business for a support band.

But it was the 'second sexiest man in the whole world' they wanted. Adam Levine totally dominates Maroon Five, and the setlist kicked along with great abandon. Shame someone decided to save a lazy hundred grand on imag though, the LED strip screens along the cyc did some colour and graphics, but nowhere was a pec, pack or guns to be seen.

CX's other woman sighed in frustration, but still swooned over the distant Levine, who worked the stage in his tight jeans and tank top. Play some drums? Pick up a guitar? Move like Jagger and just spread the man stuff.

Technically the JPJ Vertec sounds way better with its new amps and electronics. 50 boxes more than covered the 12,000 seats, and the mix by Jim Ebdon on a SD7 started low and had somewhere to go.

Up in lightie land CX pondered the ubiquitous nature of the Sharpy which appears at almost every show these days. Bill Sheldon (LD) delivered a nice looking show.

When the NSW Government shuts the Ent Cent next year to demolish it, what is the betting that we don't actually get another one. They say we will, albeit smaller. 8,000 seats -v- 12,000 now. Boo!

But the whole 'rebuild Darling Harbour' thing is hazy, and relies on retail and apartment development. Soon we will be forced to the wilderness of Olympic Park, while the lucky burgers of Melbourne can walk to one of three arenas from the city. - Guest report from Julius



THE LIVING END

No End for The Living End

The Living End have spent the weeks leading up to Christmas touring The Retrospective Tour where in each state they play seven shows in a row; one album in full per night each night.

Lighting designer Anthony Petruccio has been with the band for eight years sharing his time with his other major act Grinspoon, an act he also tour manages. This year has also seen him work with My Chemical Romance, The Tea Party and Good Charlotte.



Six albums means one hell of a lot of songs so rather than go for hours programming, Anthony busks each show on his grandMA light console with a wing.

"I have a couple of pages that pretty much covers everything and besides, by now I know all of the songs really well!" he remarked. "I'm touring a package of sixteen Martin MAC101s, eight blinders, three Atomic strobes plus the grandMA which I add to whatever in-house gear there is. As long as there's a front wash I've got a show!"

Each show begins with a five-minute video on the band and whichever album is being played that night.

Anthony loves constantly being on the road with some of Australia's hardest working acts and seven weeks of regional touring in one stretch is no big deal for him.

"I may be getting older but I'm not ready for the corporate or TV world yet!"



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THUNDER FROM DOWNUNDER

Whilst in Las Vegas for the LDI 2012 tradeshow the evenings were spent at a variety of shows including the obligatory Cirque Du Soliel production, Human Nature, a drag show (men dressed as ladies not cars), Madonna and the male revue Thunder From Downunder – well, it seemed un-Australian not to support these nice young men.

For over ten years Thunder From Downunder have been packing excited ladies into their show at Excalibur Hotel and Casino whilst also extensively touring the US. And yes, the guys are fair dinkum Aussies who don't take themselves too seriously and take life in the fast lane in their stride.

Tickets were arranged by Pat Chambers who doesn't have the cozy casino show job rather he is the touring lighting designer and his schedule is manic. Up until the beginning of November they had done 106 US shows as well as 41 Australian shows in fifty days since January! This is touring the hard way but Aussie technicians are renowned for being able to make this type of tour work and Pat quite often has to make do with whatever he is given.

"If there isn't an in house rig I request that they bring in something similar to my spec but that doesn't always happen!" he said. "I ask for a dozen movers, 60K of Pars, some ACL's, a few molefays and a few Atomics but I basically get everything from a light switch on the wall to 1000 lamps!"

62 | www.juliusmedia.com CX77



Human Nature is another Australian act that has taken Vegas by storm where their "Smokey Robinson Presents Australia's Human Nature - The Ultimate Celebration of Motown" has been playing at The Imperial Palace for over three years.



FOH sound guy David Rudder, who made the move to Vegas with the band, utilised a D.A.S. Audio system, comprising of Aero 8 ultra-compact, powered 2-way line array elements, Aero 12A powered two-way, mid-high line array modules, and LX-218A powered high performance subwoofers - all of which are managed by a D.A.S. Audio DSP-4080 Stereo / Mono loudspeaker processor. A few months ago he took delivery of a DigiDesign Venue console which was Barry Manilow's cast off from when he finished at The Paris!



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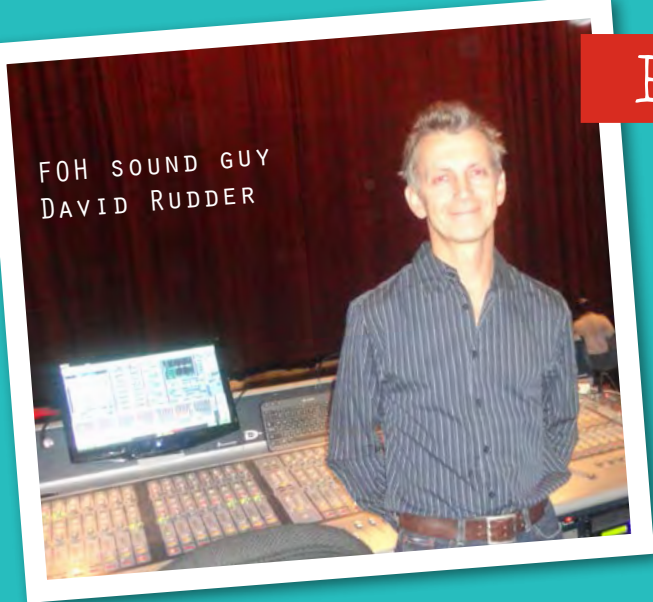
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HUMAN NATURE



FOH SOUND GUY
DAVID RUDDER

It has to be said, that for an awkwardly shaped room the sound reproduction was excellent.

“We’ve worked really hard to get the most out of what we have,” remarked David. “Even before we got the new system and console when we had an EAW 750 system with fifteen different brands of amplifiers driving it and a Yamaha DM2000 console, people were still enjoying the show but we have certainly benefited”.



HUMAN NATURE'S
ANDREW TIERNEY

MADONNA

MADONNA - MDNA TOUR
THE MGM ARENA



Madonna happened to be in town playing her MDNA Tour at The MGM Arena and production manager Jake Berry kindly arranged a couple of tickets. Didn't want to enjoy the show as like many Australians, we were a bit miffed at her snubbing an Australian tour but it was an amazing production.

Madonna arrived onstage like a menopausal harpie with all guns blazing. Literally. For the first four numbers she worked her way through a small arsenal of handguns and semiautomatic weapons as she shot up a virtual church, took aim at audience members and bloodied a stream of masked men while perched on a motel room crucifix. There was the typical mix of sex, violence, religion, kitsch and politics to bizarre but entertaining effect. One minute she's an aging leather-clad dominatrix, the next it's all monks, Buddhists

and gospel choirs singing in harmony. Highlight of the show for me was the marching drummer boys (OK hunky spunks) flown in above the stage where they stayed in awkward suspension.

Much has been made about the dark side, so to speak, of Madonna's MDNA Tour but the light side was brilliant! With lighting by Al Gurdon and sets by Mark Fisher, the show was LED screen content heavy with the main stage surface created from 36 cubes, motorized and covered with LED modules. Throughout the show these are raised and lowered to create a constantly evolving visual environment. Added to them were eight columns of video LED display to feature content via a setup of three d3 Technologies HD media servers and six Barco FLM-HD20 projectors. Each of these columns can rotate independently and reposition, creating louvered effects and a variety of different openings.



HER MADGESTY

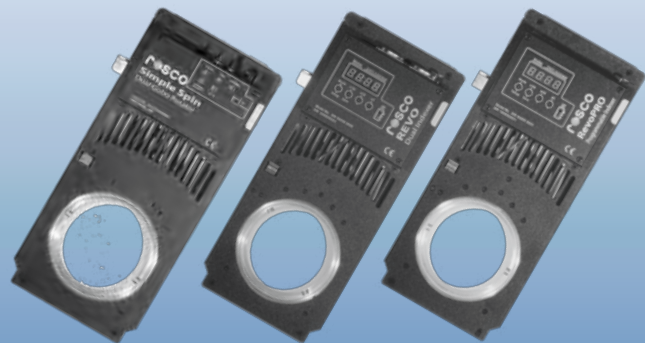
PRG supplied a lighting rig of Clay Paky Sharpys, PRG Best Boy 4000 Spot Luminaires, Bad Boy Spot CMYs, Philips Vari-Lite VL3500 Wash and Spot units, Robe Robin 1200 and 600 LEDWash lights, and GLP Impression 120 RZ LEDs. Control was via three PRG V676 consoles, and a V476 console.

Madonna had two monitor engineers, Matt Napier and Sean Speuhler, who shared a DiGiCo SD7. Sean exclusively mixes Madonna's vocals and her vocal effects, all of which she insists be done live so Matt used the SD7's control surface and Sean used an EX-007 expander unit to mix on. Tim Colvard also used a SD7 to mix the house sound. PA of choice was all d&b audiotechnik.

Yes the show was bafflingly and intriguingly all over the place, the visual metaphors were tossed about in abandon but it was one hell of a spectacle. Technically it was a masterpiece of achievement; stunning visuals, spot on lighting and amazing sound. What can I say? With her confidence, charisma and attitude, her Madgesty rules.

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The world has changed. Can someone please tell the educator sector?



Australian Commercial & Entertainment Technologies Association

Every now and then there are things that happen that somehow just don't make sense from the perspective that you have of the world. A case in point for anyone involved in the creative industries and the entertainment sector are the changes being undertaken in the TAFE system around the country.

It's not that the TAFE sector is restructuring but the effect that restructuring appears to be having on the creative industries that seems counter intuitive.

For example, it was just a year ago that Simon Crean, Minister for the Arts and Regional Development was launching his Culture Policy discussion paper to quite some fanfare and, with considerable acknowledgement of the value of the creative industries here in this country. According to Crean, the creative sector is worth around \$31 billion in annual revenues and employs something like 285,000 people.

You only have to do a little research to understand that in addition to those two facts the creative industries sector is growing at a rate faster than that of the economy more generally and, in employment terms, the creative sector is growing at around twice that of the national average employment growth overall.

Further afield, the United Nations report that in most developed countries the creative sector is driver of economic growth. In Europe and the UK for example creative industries output is said to equate to 4% of GDP making it a more significant contributor than the hospitality industry, utilities, forestry, or agriculture.

Here in Australia much the same patterns can be found. At \$31 billion in annual turnover the creative sector is significant and is placed somewhere between mining and agriculture in terms of its economic importance. Remember that it was not that long ago that 'Australia rode on the sheep's back'. How things have changed.

The only downside that we can find is that it takes creative sector graduates longer to secure a job than the average but, even that is only a temporary negative, because once employed creative industries workers earn around 6% more than the average Australian wage earner.

Crean's work and investment in the long overdue (and still unfunded) cultural policy is not the only investment in creativity that is taking place in Government. The much criticized National Broadband Network (NBN) is funded to the tune of \$40 billion over the next few years. The NBN has the potential to be a major stimulus to the creative sector

and should provide significant new employment opportunities. The NBN, if it is to fulfill its objectives, will require new content and lots, and lots of it. That means new artists, performers, multimedia creators, audio technicians, ICT technicians, writers and much more.

And this is the contradiction. On one hand at least two arms of Government are spending significant amounts of money to create a competitive and culturally creative Australia for the 21st century but on the other hand its education authorities are withdrawing what are in real terms relatively small amounts of funding from some of the key institutions that will provide the skills to enable the use of the NBN and the creativity to drive the cultural policy.

From what ACETA has learned to date, the impact of the revised TAFE funding model will be significant for the creative industries sector. It seems that the Departments of Education have failed to grasp the value of the creative industries and the need to train a 21st century workforce rather than continuing to offer a 19th century industrial revolution education and training model.

The result appears to be a number of pending course closures around the country in areas of music, visual arts, production and multimedia. At this stage institutions in each of the east coast states and Western Australian are going to be impacted. The effect in regional Australia will be even greater.

Where course closures are not taking place the student fees are rising markedly. Certificate level fees in some institutions are reported to be rising from \$2000, a level where some students may have the capacity to pay as they learn, to \$8,000 which they mostly will not. If these costs are indicative then Government's are going to have to move on their plans to include Certificate IV level courses into the FEE-Help funding arrangement otherwise these courses will see reduced demand through that lack of suitable funding options.

What concerns ACETA and the sector more generally are statements from authorities that reinforce the value of traditional skills - welding, fitting and turning and the like over new skills which are often categorized as 'lifestyle' courses.

The experience of the ACETA membership is that it is already hard to secure staff with the required skills it looks like finding an 'industry ready' workforce in the future is going to get harder not easier. And where our member businesses are willing to train staff it looks like the cost of that training is about to increase by a factor of 3, 4 or 5 in the short term.

So what to do? Firstly, we need to deal with the realities. Changing the course of the TAFE sector at this stage is not practical. That die is cast for the moment. Our efforts then need to be directed toward the private providers like SAE, JMC Academy, Collarts, the Australian Institute of Music and others. The creative sector, including ACETA need to work with these providers and help them prepare the kinds of 'industry ready' graduates our members need. That is not always currently the case but these institutions are keen to see their graduates employed and their alumni recognized.

The next step is to be proactive in the schools. As a generalization, few careers advisors know anything about the opportunities that exist in the creative sector. Their advice is limited and of poor quality, in part because they are not provided with the information needed to advise their year 10,11 and 12 students of the range of opportunities that do exist. They also do not understand the value and importance of creativity and culture to our 21st century economy and tend to talk down the sector in favour of others that they better understand or are better informed about.

So ACETA's second step is to engage with the secondary sector and provide information and resources to career advisors on the opportunities and pathways that do exist. To do this ACETA will produce a Careers Guide which will provide information on the range of careers options available in the entertainment sector and the training and skills required to be industry ready.

This is no short term fix but the combination of more informed careers advisors, better advised school leavers and a partnership with key players in creative education in the

tertiary sector should help turn the situation around.

Thirdly, ACETA will work with other organisations involved in the creative industries to convince our somewhat backward looking education authorities that the problems and issues of the 21st century can't be solved by 19th century solutions. At some point there will be a realization that the creative and cultural industries are the drivers of the 21st and 22nd century economies in the same way that manufacturing was to the 19th and 20th century and the agrarian economy provided through until 1850.

Then our TAFE's might once again offer the courses currently being lost.

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Career Guide
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By Julius Grafton

BIZ TALK

THE MERGER MERGES

Two firms become one big happy family. What can possibly go wrong?

Last month we decided on a valuation process for two firms to get hitched. The marriage happened, everyone got tanked, people shagged and did the walk of shame home in the morning. Then came the hangover. We realised we've strapped the rest of our natural lives to this alliance of egos and family fortunes as it lurches down the highway of infamy.

On face value they looked the same – firm A had \$600k worth of gear while firm B had \$550. Their turnover was almost the same, at \$900/\$910k a year. But firm A had 4% net profit, while firm B had double that.

So at merge there was a value difference, and this was sorted out to give each side an equal shareholding: 50% each.

The two sides had already agreed on the mechanics of the deal. They had signed a heads of agreement detailing the valuation process and the merger terms; a shareholder agreement; a confidentiality deed; and a break agreement for if the merge didn't happen.

In the heads of agreement they spelled out the new structure. Neither side wanted baggage. A new firm 'newco' would be incorporated with each side holding half the shares, and each having one director.

Newco would acquire all the clear assets, the brands, trademarks, customer book, intellectual property and the rights to run the business indefinitely.

Firm B had a car and a truck on lease finance, and these were not valued for the merger since there was debt. Firm A had a half finished hire purchase deal for a small production rig, and that wasn't valued either.

Newco should try to have these finance deals assigned from firm A and firm B. There is a contingent liability for the owners of firm A and firm B in the event Newco defaults – the personal guarantee of the owners will stand until the finance deals are paid out.

Likewise the eventual company premises lease will almost certainly require both directors' guarantee.

At this point CX would like to interrupt the merger to say in a perfect world no director would ever give a personal guarantee. Big firms don't do it, and avoid this if you can. Back to the merger....

Some mergers leave off some items, like cars, so you would make your own payments from your wage, to avoid complicating or unbalancing the deal.

Newco doesn't want surprises. We saw a buyout recently where a well established business bought another and was lumbered with rude surprises, including a very big one from the tax office. It almost killed the whole enterprise.

We know of a merger where a whole slab of the business was carved off and left with one owner to run separately – which risks distraction, but drove down the merged value and share balance for reasons only they understand.

Once the structure is sorted, the shareholder agreement becomes the bible of the business. It must detail the wages, drawings, number of trips, whether there is business class airfares or 5 star hotels involved, and daily dross.

A big part of a shareholder agreement is future expansion – if the firm needs money, then both sides should contribute proportionate to their shareholding. If one side is prepared to invest but the other will not, then the shareholding must be adjusted to reflect this.

There needs to be protection against an equal shareholder making an investment call, knowing the other side can't match it, because that could unbalance the shareholding. We've seen 50/50 deals undone cunningly in this way.

Finally there needs to be an exit plan, with existing shareholders having first call to buy out the other, and at an agreed valuation or just at book value. Consider whether the other side will employ or wish to bring in family or a grasping new marital partner. CX knows too much about this one!

The old principle of good business needs to be applied and remain at the forefront of any merger: there has to be something in it for everyone, and it needs to be fair. Our fair could be your fare, we say potato, you say tomato. Nothing is truly equal in this world, so keep thy eyes open!

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Last month we looked at the various definitions under the current WHS Act and Regulation. Now let's see how all that impacts on your job or your company.

IN any work situation under the WHS Act the PCBU has the Primary Duty of Care, but that is no longer limited to the employees of that PCBU, it now includes ALL workers under the direction of a PCBU. Workers could be direct employees, casual crew, employees of contractors or subcontractors, apprentices, volunteers, a student on work experience, basically anybody who does any work in the workplace. But also others who could be affected by the work activities such as visitors, members of the public, any other person that enters the workplace but isn't involved in any work.

And what is that Primary Duty of Care? Section 19(1) of the WHS Act states:

- (1) A person conducting a business or undertaking must ensure, so far as is reasonably practicable, the health and safety of:
- (a) workers engaged, or caused to be engaged by the person; and
 - (b) workers whose activities in carrying out work are influenced or directed by the person, while the workers are at work in the business or undertaking.
- (2) A person conducting a business or undertaking must ensure, so far as is reasonably practicable, that the health and safety of other persons is not put at risk from work carried out as part of the conduct of the business or undertaking.

Notice that there is a subtle difference between what the PCBU must do for 'workers' and 'other persons'. A PCBU must ensure the health and safety of workers, but for 'other persons' they must make sure they are not put at risk. Why is that an important difference? Because other persons in a workplace may not be familiar with all inherent risks that workers are fully aware of. Take an average bump-in. There will probably be forklifts and boomlifts operating, riggers working above or if you are in a theatre there may be flies

coming in, etc. These are all things workers are aware of from experience or because they were outlined in the Toolbox Talk before work started. But visitors to a workplace may not have that experience or knowledge. And they could be your client if you are building a stand, the promoter of a concert or the director of a play. Or worse, their entourage in the shape of family, boyfriends, girlfriends, the personal assistant. So as a PCBU in a workplace where you may expect visitors, you must add another layer of protection for these visitors. That may be signs, restricted areas etc. But you will have to carefully assess your workplace and put controls in place before allowing visitors to enter. And please don't fall for the 'sign a waiver' trap. You'll probably find that they mean very little if someone is injured because you cannot delegate your duty of care.

What are the core areas a PCBU is responsible for?

Safe Work Environment – Pretty obvious, just understand that this is wherever a worker is carrying out work, not necessarily the PCBU premises. When you put your event or production into a venue, that becomes your work environment. And you now have to make sure that place is safe too. Often it will be, but you can't take that for granted. Or you could be working on a greenfield site, whether for a festival or a corporate event in a marquee. If you send out crews you cannot assume that the event organiser has made the site safe, under the legislation you have a duty to satisfy yourself that the workplace is safe.

And be alert about people working from home. When they do, their home becomes a workplace and you have to make sure it is safe. Very tricky so if that happens a lot, maybe develop some sort of procedure and checklist.

Safe plant & structures – Again pretty obvious but remember that plant is not just big machinery - any appliance, powertool, amusement device, etc. are considered plant under the Act.

Here are the definitions from the Act: plant includes:

- (a) any machinery, equipment, appliance, container, implement and tool, and
 - (b) any component of any of those things, and
 - (c) anything fitted or connected to any of those things.
- Also the definition of a structure, covers pretty much everything!
- Structure means anything that is constructed, whether fixed or moveable, temporary or permanent, and includes:
- (a) buildings, masts, towers, framework, pipelines, transport infrastructure and underground works (shafts or tunnels), and
 - (b) any component of a structure, and
 - (c) part of a structure.

So if your workplace involves a marquee, a tent, a temporary stage – you have to make sure it is safe. Looking at the spate of stage collapses, mostly the USA recently, and the increasing number of cheap Chinese ground support structures that could be some concern.

If you send out crews to jobs, make sure your client has the required paperwork to show it is safe and constructed / maintained correctly. Because even though they have the same duty to provide a safe place

of work, you still have a duty to check that it is safe. Remember the 'never assume' principle!

Safe systems of work - What is important to note is that there is a list of standard Codes of Practice.

<http://www.safeworkaustralia.gov.au>
then tab: Model WHS Legislation

These Codes of Practice are pretty much the way the Regulators would like you to do certain tasks. You could get into a lot of difficulty if you thought you knew better and it didn't work. So keep an eye on them and if they apply to something you do, or may be involved in, read them! And if you do things differently, document it thoroughly.

Safe use, handling & storage of plant, structures and substances - As a PCBU you must make sure these systems are in place and implemented. They must also be reviewed regularly to make sure they are still relevant and in-line with current best practice. Look around your workplace and ask yourself if everything there has been covered. Do you have the right training for the plant you use? Is there a maintenance schedule? And is all that written down so that it can be referenced?

Facilities for welfare - That means that you must provide, or make sure they are provided, things such as toilets, first aid facilities and where applicable, changerooms, lunchroom etc. But it also means that you must provide, for instance, shade or rain cover for workers outside and fresh drinking water on site. Pretty easy in a regular venue, what about that greenfield site? Does your crew have access to toilets? And what about overnight when the public toilets

they depended on are locked?

Training and information - It is all well and good to have a comprehensive Safe Work Manual on a shelf in an office somewhere, but that is not going to help anyone. Paperwork alone has never saved anybody. You have to make sure that all workers have received the right training and supervision to do their work safely. And it will be important to document that training.

Simply relying on verbal training without any documentation and sign-off from the person receiving the training is putting yourself on very thin ice.

And finally, **Monitoring** - You can not just run through all this once and then sit back. You have to actively monitor and assess what is actually happening in the workplace. And you have to change things if they are no longer working which is where consultation kicks in and we'll have a close look at that in the next issue.



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OX ADVERTISER INDEX ISSUE 77 DECEMBER 2012

• Amber.....	29
• Audio Products Group.....	27,61
• Bosch.....	35
• Bose.....	55
• BS Sound.....	72
• Cases.com.au.....	15
• Chameleon Touring Systems.....	74
• Clay Paky Australia.....	13
• CMI.....	FC,21,53
• Entertainment Assist.....	72
• Framelock Structures.....	45
• HES.....	47
• Jands.....	IFC,3,67,71
• Juliusmedia 2013 Courses.....	10
• Leighton Park.....	72
• Meyer Sound Australia.....	5
• Mojo Barriers.....	59
• National Audio Systems.....	49
• Nightlife.....	IBC
• Norwest Productions.....	20
• Penn Elcom.....	32
• Power Stage.....	72
• Production Audio Video Technology..	11
• Rare Audio.....	37

• Rentalpoint.....	72
• Riedel.....	31,33
• Roland.....	19
• Rosco.....	65
• Showtech Australia.....	43
• Subscriptions.....	63
• Syntec International.....	25
• Technical Audio Group.....	7
• The Resource Corp.....	41
• ULA.....	69,BC
• Yamaha.....	17,57

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When I was young and foolish I became a member of a car club. I'd bought myself a convertible so I could whizz around with the wind in my hair, so thought I'd join a club of like-minded individuals.

It was the first and last time I joined a club of any kind, because, like Sherlock Holmes' elder brother Mycroft, I discovered that I wasn't a very clubbable person.

But, it did give me my first PA gig, long before I got into the PA biz on a permanent basis.

The club had decided to take over a big park one Sunday and have a car show and Christmas party for the kids.

The day before the show, the club secretary rang me and said "Oh Duncan, by the way, I forgot to tell you at the last meeting - we'll need a PA system tomorrow so we can have some music going and various announcements from the judges. You're in the music biz, aren't you? I'm sure you can organise something. See you tomorrow."

And with a click he was gone. I felt like calling him back and telling him to shove it up sideways, but then it would be all my fault that there was no PA. I could hear them now "You know I asked him to get one but he's done nothing" "I don't think he's got the club spirit" "Not really the sort of chap we want in the club" and so on.

As for being in the music biz, so far that had consisted of playing with the Harris Tweed Band, the group of geriatrics I still play with. As anyone who's seen them will agree, it's as far away from any kind of 'biz' as it's possible to be!

My first phone call was to good old McLean's in Balaclava Rd, where luckily I could talk to Stewie McLean (father of the late Hugh) who used to hire out column PA systems to the length and breadth of Melbourne garage bands. "Is there going to be any power there?" Stewie asked. "Mmm don't think so," I replied, "it's just a bit piece of open ground." "OK then, you'd better come down now and I'll see what I can do."

I was around there in a flash, and true to his word, he had

Santa's Xmas Ride Cars, Christmas and Chaos

a PA waiting for me.

"Here you go," he said, pointing towards a pile of tin horns and poles. "These will be just the thing. There's your amp, a couple of microphones, some cables - you'll be fine."

"Umm, what am I going to use for power?" I asked. "Do I need a generator or something?"

"Well you could," he replied, "but it'll be clattering away all day, and I haven't got one anyway!"

"So what'll I do?"

"Use this," he smiled and pointed to a large battery on the floor, about the size that they use to kick start a Boeing 747. "That'll keep you going all day. The amp runs on 12 volts - just connect it to this and you'll be fine. Here, I'll show you." He proceeded to wire it up and plugged in a microphone. Weeeeeeeek - a burst of ear shredding feedback from one of the tin horns parted my hair, and I clapped both hands over my ears.

"That bother you, does it?" he laughed, turning it down.

"Just a bit," I said, my ears still zinging.

I packed it all into the car; four tin horns, poles, battery and cables. Didn't fit in very well, but luckily the weather was good so I had the top down. I drove home feeling like a cartoon car in *Who Framed Roger Rabbit*.

The next day dawned, and I arrived early at the park with a couple of friends. It all went together pretty quickly; we banged the poles into the ground, hooked a couple of horns on each of them, wired up the battery, and had music playing by the time the first club members arrived.

Just before lunchtime, one of the members came up to me and asked me for a favour.

"Sure, what do you need?" I asked.

"I'm going to dress up as Santa after lunch, and hand out presents for the young kids" he said. "Do you think you could drive me into the park with me sitting on the car?" "Surely there are nicer cars than mine you could use," I replied.

"Oh yes, but I asked all the others and they were worried their cars might get scratched. And yours...well... you know..." His sentence dribbled to a halt.

"You mean a few scratches on mine wouldn't make much difference?" He was right, of course. Like estate agents that tell you to buy the worst condition house in the best street, I had bought the worst condition model of the best car!

It had certainly lived a hard life - every one of its previous owners had stacked it. The guy I bought it from had a picture on his mantelpiece of the car being hauled out of the Yarra river backwards by a tow truck, after losing it at high speed on a corner of the Boulevard. He was happy to sell the

car but wouldn't part with the picture!
 Freshly painted red, it was a vast improvement on its colour when I bought it – a bilious lime green which, as the French so delicately put it, stuck out like dogs' balls in a bowl of custard. Certainly there was no way of going anywhere anonymously, but then who buys a Jaguar E type roadster for anonymity? Friends promptly nicknamed it the jolly green slug.

Still, at \$2000 in 1975* it was a hell of a bargain, with the only visible body damage consisting of a small crumple over the driver's side front wheel arch - fairly easily fixable. It wasn't till much later I discovered the invisible damage, covered over with large amounts of body filler in the bonnet, doors and the boot floor!

But for Santa, my E type was the closest thing to a sleigh he was going to find. Best of all, it only had two seats, so he could sit on top of the car in the small space behind the front seats where the soft-top folds down and the boot lid.

I left one of my mates in charge of the PA, and went off to get the car while Santa got himself ready. He was already carrying a fair bit of 'excess condition', but with a couple of pillows stuffed underneath his red outfit he looked quite the jolly Santa. He climbed up on the back of the car, with his sack on his shoulder, and we slowly drove into the park with him laughing "Ho-ho-ho" and waving at the kids, who all started running over to us.

There were quite a few potholes in the grass, and I had to weave my way between them carefully. I slowly stopped to negotiate one of them, and Santa started to lurch forward as I touched the brakes. Once past, I may have accelerated a tad too quickly, because with a "Ho-ho-ho - Shit!" Santa rolled backwards off the boot of the car and ended up sprawling around on the ground.

Kids ran over screaming with delight as Santa's sack fell out of his hands, spilling presents everywhere. Big kids were elbowing small ones out of the way, small kids were sinking their teeth into the big kids' legs, parents were running around trying to stop the chaos while Santa, burdened with the load of pillows under his suit, tried in vain to struggle

to his feet as the kids who hadn't found a prezzo kicked him and tugged at his clothes and beard.

It was like a scene from Santa meets Lord of the Flies!

So make sure you have a happy and safe Christmas holiday season, especially if you're playing Santa, and I'll see you again in the New Year.

***A few years later I turned down a V12 roadster for \$6,000, thinking it was way too much to pay. Currently they are the most sought after (i.e. expensive) E type you can buy! Who knew?**





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