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CX

MONTHLY TECH NEWS
entertainment & broadcast

CX 80, APRIL 2013 \$5.50

Riedel
Celebrates
5 Years

Legends
Tony Youlden
'Mr Strand'

UNDER THE RADAR
with
MADZIN Productions

GEARBOX REVIEWS:

- Meyer Sound UPQ-1P
- DPA d:facto II Vocal Mic
- Hippotizer Grasshopper
- MDG Atmosphere APS
- Universal Audio Apollo
- DTS Delta 10F

CX NEWS:

- Lawsuit & Chris Isaak
- Beautiful Destiny, Toni Childs
- Intergrate Paid \$1 Million
- Mojo Barriers
- Vale Aaron Chugg
- Territory Big Screens & more

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GUEST EDITORIAL BY JIMMY DEN-ouden

TURNKEY SUCCESS

This month we profile Sydney production house Madzin, and during the process we started to notice a trend in production supply: Those who provide full turnkey solutions benefit from it.

Frequently corporate gigs are left to executive assistants and the like to organize – people whose primary skills are not technical event production. People who don't understand factors like timing required for stage changeovers. When a production supplier can offer everything from a stage to PA, lighting, carpets, theming, chairs and punter barriers, they become instantly more attractive to these people.

Having the gear is one thing, but having the skills to plan the gig is another. In the same way you need to be a good driver to pilot an F1 car, you need to be a good production manager to turn out genuine turnkey solutions. Building good client relationships helps with this immensely, since if you understand how to talk to your clients you're better positioned to exactly fulfill their requirements.

Shifting around a bunch of bike racks and stage flats might not be the most glamorous task ever, but if it doubles the value of a job and generates loyal repeat customers isn't that worth the extra effort?

WHY CAN'T WE BE FRIENDS?

News this month details legal action against Chris Isaak by his former lighting designer of 17 years, prompted by alleged victimization by the touring production manager.

Victimisation of others perplexes me greatly, since it's often driven by (and serves to highlight) insecurities of the perpetrator. There are better ways to ask for help.

It doesn't matter what social demographic you come from – as long as a person does good work, their gender, ethnicity, sexual preference and religion are largely irrelevant. Fact is we're stuck on this planet together, so we better learn to get along.

In an industry already short on skills the last thing we should collectively do is tolerate alienation of skilled crew. Don't just stand by and do nothing if you see it happen. Tell someone.




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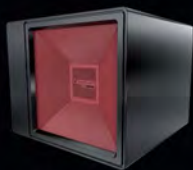
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NEWS

CX INDUSTRY NEWS

LIGHTING DESIGNER LAWSUIT CRUEL BACKSTAGE WORLD OF CHRIS ISAAK

Reputational damage may quickly force nice guy rock star Chris Isaak to settle a messy lawsuit brought by his long term Lighting Designer, Lane Hirsch. Hirsch claims Isaak employed a production manager, Tim Lamb, who routinely defamed, insulted and bullied him, along with two female crew members.

Isaak would not enjoy being named as the primary Defendant in the case, brought in the San Francisco Superior Court in March this year against him, his management company H. Powell Inc, and the production manager. Hirsch alleges Lamb abused him with homosexual taunts, called the female crew profane names, and smoked pot on the tour bus just behind Hirsch's bunk despite requests to stop.

Hirsch says he worked for Isaak for over 17 years and was paid for days worked, usually across a touring season of up to seven months of the year. His lawsuit is wide ranging, claiming additional payments due under California labor laws and damages for various actions.

But the lawsuit focuses on the extreme alleged behaviour of Lamb, who will have the opportunity to defend himself should the case go to a jury trial later this year. Lamb also worked recently for Bob Seger.

Hirsch says Lamb told the female crew words like: "a woman's place is not on tour", and "girls are meant to stay home where they belong". Hirsch alleges Lamb recruited two other crew, Ed Cole and Rob Smuder to join his harassment of the two women. Further he says Lamb would yell at the women until they broke into tears, according to court papers.

But Hirsch himself was a victim, he says. He complained to Sheryl Louis, Isaak's manager, along with tour manager Doug Casper but to no avail. Hirsch says Lamb, Smuder and Cole made comments like 'blow me' and 'suck my dick you little fag' as retaliation against his complaints. He was called 'fag', 'gay', 'lesbian', 'little girl', or 'E-lane' - a reference to his name.

Finally Hirsch was fired just before the 2012 touring season, after confirming dates and not accepting other work. For this he seeks compensation, along with damages for the abuse and other matters.

Hirsch claims Chris Isaak was aware of the disharmony amongst his crew. CX notes Hirsch does not claim or deny being homosexual, we quote directly from the court papers.

NICE GUY?

PAULA DEEN AND CHRIS ISAAK
PIC BY PAUL DRINKWATER

TONI CHILDS PIC BY S. GRANITZ



BEAUTIFUL DESTINY AUSSIE SOUNDGUY AND HIS TONI CHILDS

INTEGRATE PAID \$1M VALUE OF TRADE SHOW REVEALED

Alchemedia Events was wound up by a liquidator at the request of its shareholders recently, to distribute just over \$1 million proceeds from the sale of the Integrate Trade Show.

Established in 2008, the Integrate Expo ran three years in a row at Sydney's Moore Park before selling to mega trade show conglomerate Diversified Exhibitions in 2011. That sale was for just over \$1 million.

The tradeshow industry is under pressure as exhibitors question return on investment, along with shifts in business that accelerated with the advent of the Internet in the 1990's. Tradeshow are a traditional concept that survives now more as a marketing and networking opportunity rather than as a venue to display new goods.

Alchemedia Publishing operate a slew of magazines that all cater to the entertainment technical markets in Australia, such as Audio Technology, Venue, AV, Light and Design and others. The events company was a partnership between the publishing company, and former ENTECH executive Louise Brooks, who took home over \$350,000 from the sale of Integrate.

Good Weekend magazine profiles audio guy and composer Mik Lavage and his wife Toni Childs - the American music identity.

Some relationships do happen between a performer and a backstage tech, and they

tend to work well since both understand the space. CX knows of dozens – a famous 'name' married to one of our technical brethren.

The saddest part of being famous is the desolate loneliness.

"I'd had a meltdown in my car", Childs says in '2 Of Us' (SMH Good Weekend 23 March 2013). "You feel so sad and lonely and want to cry and no sound comes out".

She was due to tour Australia in 2010 and almost cancelled due to soft bookings. On a flight to Melbourne, she sat in the empty window seat, and Lavage came along and sat in the row. She suddenly just knew he was musical. They connected, despite both being exhausted. He didn't know she was a famous musician, until at the baggage carousel people came to her.

It's a lovely story. He went to her show and stayed afterwards. Then he followed her to Hawaii to see where she lived. Only someone working in the biz could understand the facades.

Without stealing too much from Stephanie Hunt's article (available online), Childs and Lavage married and now live together at Byron Bay.

CX wish them all the very best. May the happy days roll forever!



MOJO ACCELERATES

Mojo Barriers' Australian office has just supplied stage barriers and crowd safety services across three of the country's biggest summer music festivals in 2013 – Big Day Out, Soundwave and Future Music Festival.

The Soundwave tour kept Mojo's team busy installing over 4.5km of barrier across the festival's five sites helping to keep audiences, crew and headliners including Metallica and Linkin Park safe.

Nicola Carroll, Mojo Barriers Australia director, said: "With the office only recently opened this is a fantastic start for us. Mojo Barriers Line-Up Gates, Mega-Exits and High Fencing are now key elements of crowd management in high density areas."

The events were crewed by Mojo Barriers' Supervisors Craig Edwards, Craig Pope, Stanley Jilesen and Mandy Bradford.

VALE AARON CHUGG

WELL LOVED TOUR MANAGER CHECKS OUT AT 52



Chugglet was a distant relation of promoter Michael Chugg and worked in the same industry. He was impossibly positive and had energy levels so high that he was sometimes mistakenly thought to be using stimulants. He didn't.

Universally acclaimed as one of the truly nice guys in a business that can produce nastiness, Aaron started as a muso in a band called Lafayette and quickly became a highly regarded sound guy. He pushed boundaries – using a computer with midi to sequence effects for Pseudo Echo in 1984.

Aaron toured with everyone, most recently with Shannon Noll.

Amongst a torrent of sad words, these from Simone Harle sum up the man. “I was just with him and the Stone Roses gang at Future in Perth. It had been a challenging day.

A conversation we had resonates deeply as I am hearing of this horrible news. We were speaking of the fact both of us were (of a certain age) quite possibly too old to be traipsing around the place acting like teenagers in a crazy industry. The fact we were both childless occupied a few minutes of our conversation. He was speaking passionately and humorously, sharing stories about his family with me. He also said he thought he was lucky and that he was a proud of the relationships he had. And treasured them.”

CX had earlier booked a lunch with Aaron to write his story. Sadly he collapsed from a stroke while on Future Music and did not recover.



TERRITORY BIG SCREENS

Darwin Turf Club has signed up with Big Screen Video NT, owned by Total Event Services' Colin West, to install a 30 square metre screen at the race track, featuring the latest LED screen technology.

The high definition LED display screens are almost the size of a household swimming pool and are fitted on their own trucks with special hydraulic arms enabling them to be easily erected and offloaded.

Colin says the contract with the Darwin Turf Club means he can offer the high resolution 10 mm pixel LED large video screen technology to other businesses and major events across the Territory.

With two 12 square metre (2.5 m x 4.5 m), two 30 square metre (4 m x 7 m) and two 42 square metre (5 m x 8 m) screens based in Darwin, Big Screen Video NT will be the only local supplier of this technology in the Territory.

LIGHTSOUNDS ADDS DEALERS

Industry veteran and owner of Bjs, Brad Johnson has been servicing the Queensland pro audio visual and lighting market for over 30 years. He has now opened a Lightsounds dealership.

“I've been wanting to be a part of Lightsounds since the 90's but the opportunity never presented itself. BJs has some presence on the Gold Coast so by leveraging the

Lightsounds brand we see significant opportunities for growth. Not just in sales and hire but also productions and installations” Brad said.

The Gold Coast has more bars and clubs per capita than anywhere else in Australia. “When the Gold Coast opportunity came up to co-brand BJs with Lightsounds we jumped on it” Brad continued. The Lightsounds dealership has no joining fees or ongoing costs so it's easy to see why more outlets are opening”.

Short Technical Courses in July



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

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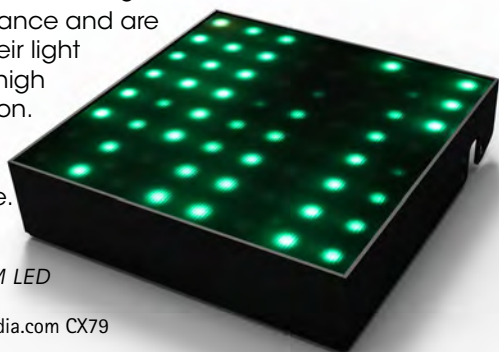
Eartec has designed the UltraLITE headset for use with the COMSTAR system, which allows crews to converse simultaneously just like on a regular telephone — no buttons to push, no taking turns speaking. COMSTAR is not voice activated, and there are no transmit buttons. To operate, users simply turn the system "ON" and talk. Up to eight can converse all at the same time. The system includes deluxe padded UltraLITE headsets and COMSTAR belt packs. The gear is certified for worldwide non-licensed use.



EARTEC ULTRALITE

ENTTEC ALEPH MATRIX 20mm LED PANEL

Enttec's Aleph Matrix LED 20mm (.75") pitch pixel panels, designed for indoor use, each come with 64 RGB pixels. The tiles can be connected to create standard rectangular walls or alternate shapes. Each 8" x 8" x 2" (160 x 160 x 40mm) tile weighs 1.2 lbs. (535g) and draws 25W. Up to 50 tiles can be powered at 110V; up to 100 tiles can be used with a 220V power source. Using a dedicated USB interface and Cat5 link, the driver software will accept any Art-Net input source from all major pixel mappers including Madrix. The fanless tiles are low-maintenance and are touted for their light output and high color definition. Different diffusers are available.



ENTTEC 20MM LED

MARTIN MAC III WASH

The MAC III Wash is a full-feature, full-range wash luminaire with an internal barndoor system (shutters) that enables designers to shape and control light projection onto stages, performers, scenery, scrims or any set element with great precision. Its internal framing system makes it a highly capable, automated substitute for a conventional 2.5 kW daylight Fresnel fixture.

The MAC III Wash features an outstanding quality of light with unlimited color choices. The MAC III Wash maintains near full efficiency throughout the entire zoom range with no visible beam jump when zooming from tight to wide.

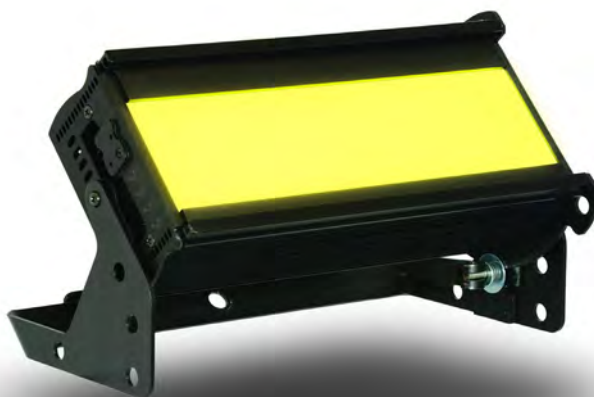


MARTIN MAC III WASH

CHROMA-Q STUDIO FORCE D 12 PHOSPHOR

The Chroma-Q Studio Force D 12 Phosphor is a 5,600K CCT, daylight white fixture which utilises LED technologies found in the Studio Force range to provide an equivalent soft edge output to a fluorescent fixture - up to 7,000 lumens - developed specifically for use in TV, film and broadcast studio environments.

Other features include a smooth uniform wash, extra soft beam, theatrical grade dimming, laboratory calibration to match Black Body Locus. Designed for practicality, the unit is equipped with a manual control mode, colour touch screen interface, fanless, studio & full modes for maximum control of the units and a range of optional accessories.



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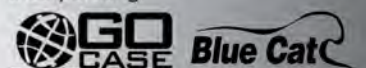


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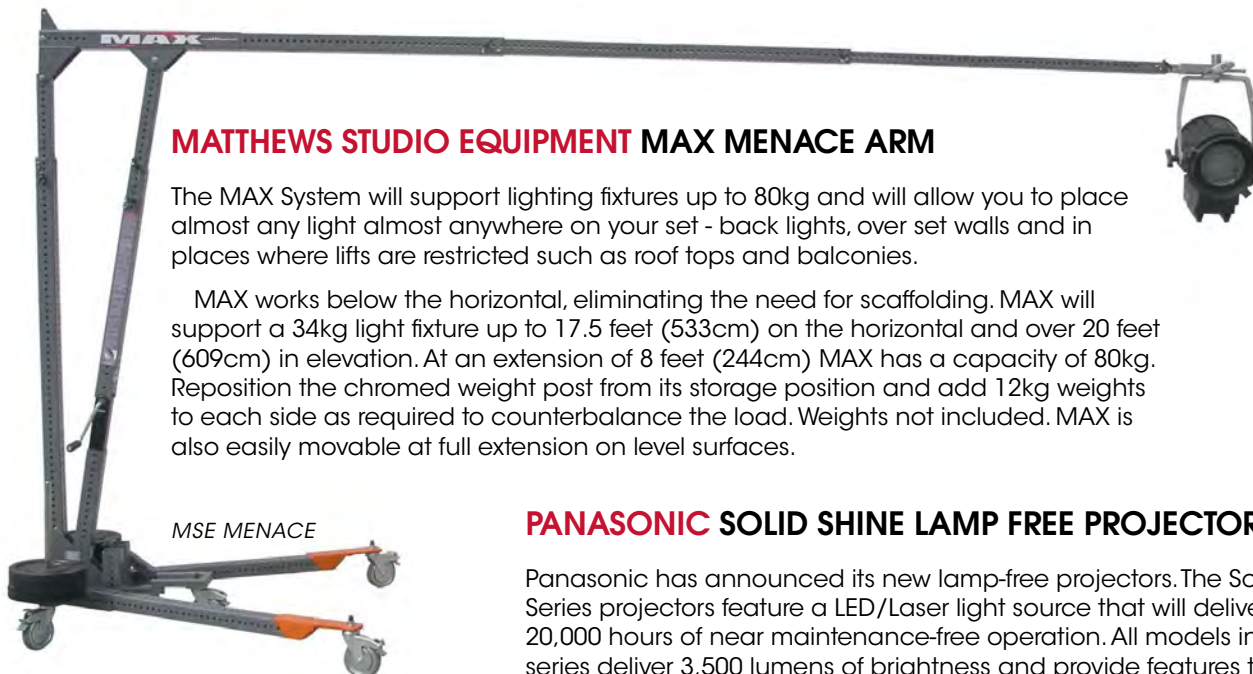
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MAX works below the horizontal, eliminating the need for scaffolding. MAX will support a 34kg light fixture up to 17.5 feet (533cm) on the horizontal and over 20 feet (609cm) in elevation. At an extension of 8 feet (244cm) MAX has a capacity of 80kg. Reposition the chromed weight post from its storage position and add 12kg weights to each side as required to counterbalance the load. Weights not included. MAX is also easily movable at full extension on level surfaces.

MSE MENACE

PANASONIC SOLID SHINE LAMP FREE PROJECTORS

Panasonic has announced its new lamp-free projectors. The Solid Shine Series projectors feature a LED/Laser light source that will deliver up to 20,000 hours of near maintenance-free operation. All models in the new series deliver 3,500 lumens of brightness and provide features targeting the needs of educational institutions, museums, command and control centers, and digital signage applications. To enhance permanent installation use, the Digital Link feature enables users to transmit video, audio and control signals up to 100 meters (328 ft) over a single LAN cable.

The Solid Shine Series contrast is at 10,000:1, and images are reproduced with a wide dynamic range and it is equipped with a 2x zoom lens making it possible to throw a 120-inch-diagonal (304cm) wide screen image from approximately 3.9m (12.8 ft) to 7.8m (25.7 ft.) The LAN terminal allows a computer connected to the network to use Crestron RoomView application software to manage and control system devices.



PANASONIC SOLID SHINE

GRASS VALLEY DIRECTOR INTEGRATED NONLINEAR LIVE PRODUCTION CENTRE

Grass Valley has introduced the GV Director Integrated Nonlinear Live Production Center. GV Director is more than a switcher, it is a simplified way of producing and delivering live content across multiple distribution platforms. GV Director is suitable for all production environments, such as houses of worship, image magnification (IMAG) applications, educational institutes, as well as fixed venues, production studios, and trucks.

GV Director's touchscreen, traditional switcher buttons and T-bar controls make it easy to use and it will seem familiar and logical to both experienced technical directors (TDs) and students alike. It is software based and runs on mostly common hardware components forming a scalable CPU and GPU platform with Grass Valley designed I/O technology - providing for near unlimited M/E buses, keys, 2D/3D graphics, localized clip storage and the ability to handle baseband and file-based sources.



GV DIRECTOR

SHURE GLX-D WIRELESS SYSTEM

Shure has announced GLX-D Wireless Systems, new wireless products that combine the technology of LINKFREQ Automatic Frequency Management with lithium-ion battery rechargeability microphones, and unique construction.

Operating in the 2.4GHz frequency band, GLX-D analyzes the RF spectrum, determines the best available frequencies, and automatically deploys frequencies to the transmitter and receiver. Additionally, in the presence of RF interference, the GLX-D receiver and transmitter will seamlessly move together to clean frequencies with no audio signal interruption. The lithium-ion battery is good for up to 10,000 hours of use, or the equivalent of up to 2500 AA batteries, providing significant incremental cost savings over time. The battery can be quickly charged in 15 minutes for up to 1.5 hours of use, through a wide variety of power options, including USB connections.



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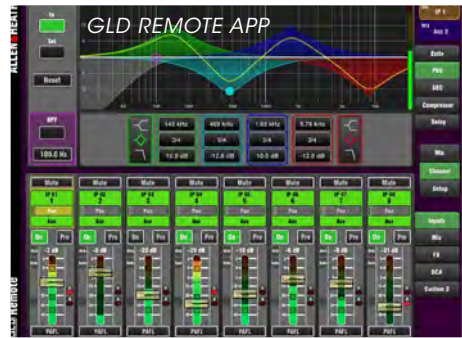
COMPLITE VECTOR iCONTROL APP

Complite Systems has released their new Vector iControl App that remotely controls and edits basic functions for all Vector lighting consoles. The App, for iPhone, iPad, iPod and Android devices, has been completely redesigned with a full GUI makeover.

The App provides real-time information of the Console through a friendly user interface. By using the Vector iControl App, you are able to control moving lights, conventional lights, create and store cues and libraries, add groups, control highlight and lowlight and more.



COMPLITE VECTOR APP



ALLEN & HEATH GLD REMOTE APP

Allen & Heath's new GLD Remote app for iPads connects to the GLD-80 mixer on a wireless network and gives the user instant access to any of the mixers channel faders and mutes, DCA faders and mutes, image

controls, aux sends and assignments as well as channel input and output processing, mic-pre control and full metering.

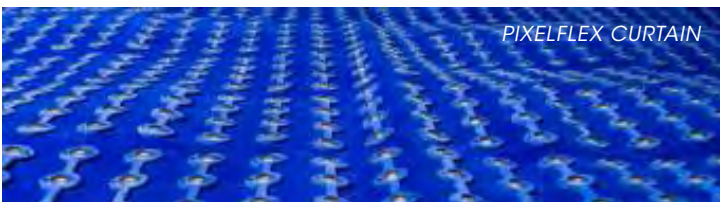
Features for system set up include a real time analyzer (RTA) to ring out monitors and EQ the PA, the ability to name and color channel strips, custom layers with drag 'n drop strip set up to suit any application, and a mix view where monitor engineers can keep both master levels and contributions under control in a single screen.

PixelFLEX LED COLOURED CURTAINS

PixelFLEX has announced the introduction of LED coloured panels. The new coloured panels, available in red, blue, white and green, are ideal for theaters and touring musicians. The new line of panels also opens up additional market opportunities such as professional photography, as the LED curtains can be used to create vivid background imagery.

The colored panels, made of DFR velvet drapery, come in a variety of resolutions, including 18mm, 20mm, 30mm, 37.5mm, 50mm, 75mm and 100mm, offering video display solutions to meet any and all imagery needs.

Flexible in all directions, PixelFLEX LED Curtains are able to bend and shape around structures for a more creative display effect and can be stored in a single road case to simplify shipping.



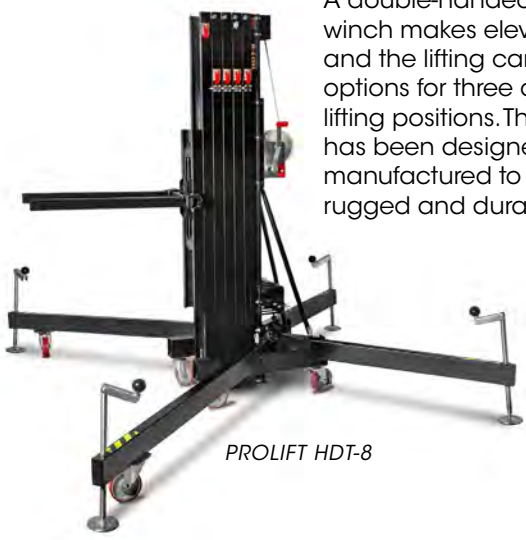
PIXELFLEX CURTAIN

PROLIFTS VMB HDT-8 TOWER LIFTER

Prolifts S.L. has released the new VMB HDT-8. The Heavy Duty Tower is capable of elevating 350 kilograms to a maximum height of 11 metres. The HDT-8 is BGV-C1 certified and includes the ALS (Auto Lock Security) system, a safety feature that automatically locks the lift masts as they rise. It also has VMB's SRS (Sequence Retainer System), meaning the masts rise and descend in sequence, one after the other.

The masts are manufactured from aluminium to keep the weight as low as possible. Steel outriggers and a special reinforced base add further security.

A double-handed special winch makes elevation easier and the lifting carriage has options for three different lifting positions. The HDT-8 has been designed and manufactured to offer a rugged and durable lift.



PROLIFT HDT-8



PRIMACOUSTIC ACOUSTICAL SOFTWARE

PRIMACOUSTIC ACOUSTICAL TREATMENT PRODUCTS

Primacoustic has announced that its full line of acoustical treatment products can now be found in Sketchup's Component Library/3d Warehouse.

Sketchup is a popular 3D modeling program that is widely used by designers in a variety of fields to create layouts and models. Users will be able to find a full selection of Primacoustic's product line including renderings for acoustic panels, accent panels, bass traps, diffusers and clouds.

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RADIAL ENGINEERING STAGE BUG SB – 4 PIEZO

Radial Engineering's StageBug SB-4 Piezo direct box has been built to solve the problems associated with amplifying acoustic instruments when using piezo-electric transducers.

The StageBug SB-4 begins with a 1/4" input to connect the instrument's piezo transducer output. This 10 meg-ohm input is ten times higher than a traditional DI. The higher impedance smoothes out the peaks and squawk that is common to most piezo systems while broadening the frequency response for a more natural and pleasing sound.



RADIAL SB4 PIEZO

SOUNDCRAFT Si EXPRESSION

Soundcraft has introduced their new Si Expression digital console range, aimed at the low price category. Available in three frame sizes, the Soundcraft Si Expression 1, 2 and 3 offer 16, 24 and 32 fader and mic inputs respectively; all three are capable of up to 66 inputs to mix by connecting any Soundcraft stagebox or by connecting additional inputs over MADI or AES/EBU. The mixer comes with industry standard processing from Harman siblings BSS, dbx, Lexicon and Studer and many top-end professional features like a color touchscreen, iPad ViSi Remote control and Soundcraft FaderGlow, adopted from Soundcraft's Vi Series large format flagship consoles.

The console has a wide range of networking and option cards, the most recent of which is the BSS BLU Link card enabling simple and automatic connection to the dbx PMC16 Personal Monitoring System.



SI EXPRESSION

AUDINATE DANTE VIRTUAL SOUND CARD V3.2.0

Audinate has announced enhancements to its Dante Virtual Soundcard software for Windows. With the new Windows Driver Model (WDM) mode in V3.2.0, Dante Virtual Soundcard for Windows now adds support for applications including iTunes, Windows Media Player, Skype and more.

PC users can play out or record audio from these applications with professional sound quality. Features include the choice of 64x64 ASIO or 8 x 8 WDM mode (presents as four stereo Windows WDM soundcards); the choice of 44.1kHz or 48kHz sample rate in WDM mode and Windows 8 (32 and 64 bit) support. DVS V.3.2.0 is a free upgrade for current licensees.



DANTE V3.2.0



DB6 LOUDNESS

TC ELECTRONIC DB6 LOUDNESS MANAGEMENT SOLUTION

TC Electronic has gathered all of its technology and expertise in a high-density and original solution. DB6 is a TV and Mobile TV transmission processor that is able to handle everything regarding loudness in one simple process - loudness metering at the input stage, up or down conversion, loudness processing, on-line lip-sync delay, loudness metering at the output stage and logging of all relevant loudness statistics.

DB6 is available in two different versions - DB6 Multi and DB6 Single. DB6 Single handles one SD/HD/3G stream while DB6 Multi also comes with the ability to process one stream right out of the box, but it is possible to install one or two additional 'Transmission 3G' dual-engine cards and thereby increase the count of total streams per unit to two or three. Each Transmission 3G card holds two multichannel processors and is capable of running two LM6 Loudness Radar Meters as well as two LoudnessWizard algorithms simultaneously.

SOMMER CABLE MICRO STAGE CABLE

The micro stage cable from Sommer Cable is a highly flexible AES/EBU compliant microphone cable for live/ stage and studio technology. It features a wave impedance of 110 ohms, a compact cable diameter of 5.8 mm and compact XLR connectors as well, making the product suited for use as a patch or MIDI cable.

The jacket is cold flexible, reelable and performs well in below-freezing temperatures. Its capacitance is 48 pF (wire/wire) or 120 pF (wire/screen), respectively. This lets the cable be used to easily bridge distances of several hundred meters with virtually no loss.

CITC QUIET CUBE

CITC's Quiet Cube snow machine makes an extremely quiet, evaporating snow. It's 10dB quieter than their Little Blizzard SP snow machine, and is designed to be used in venues needing "almost quiet" sound. The small body of the machine still outputs the same amount as larger units. It comes with DMX onboard and a variable speed remote control.



BEHRINGER

iX16 ULTRA COMPACT DIGITAL MIXER FOR IPAD

The iX16 Digital Mixer features 16 digitally-programmable, high-resolution MIDAS-designed mic pres, all controllable remotely from the supplied iPad app. Extensive control options include PC/Mac/Linux over Ethernet or Wi-Fi, as well as iPhone/iPod Touch for personal monitor mixing right out the box.

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10 YEARS SINCE THE FAMOUS CX NUDE PHOTO, LESSONS HAVE BEEN LEARNT AT THIS FAMILY PRODUCTION COMPANY

UNDER THE RADAR WITH MADZIN PRODUCTIONS

BY JULIUS GRAFTON

TEN YEARS AGO FRANK MADZIN TOOK HIS CLOTHES OFF FOR CX. THE ARTICLE WAS CALLED 'THIS IS A STORY ABOUT LOVE', WHICH WAS ACTUALLY A PROFILE OF MADZIN PRODUCTIONS - THEN A YOUNG COMPANY THAT HAD ALMOST DOUBLED IN SIZE EVERY YEAR. WE RAN A PICTURE OF FRANK IN THE RAW, HOLDING A CX MAGAZINE TO HIDE THE PRIVATES.

Like then, now Madzin Productions is still in Sydney's Marrickville, a short hop from the city. Unlike then, Frank lives upstairs with his fiancé Vanessa Dibble, and their boys - Jacob 7 and Micah 3.

Around the tight knit production industry Frank has a great reputation, since his standard operating mode is to be nice to people. Not in a smarmy insincere way, rather he just likes people, and thinks of his customers as friends.

This along with an early strategic decision to be a full service provider has ensured the firm does well, surviving a downturn for the GFC, and a spate of customer firms going into receivership, all in a row.

"I couldn't have survived as just an audio company", Frank says of the early days. "A customer gets a quote to do the whole job, they like it". The notion of full service extends broadly - "we can build an outdoor venue for them".

Frank joked that he probably makes more money from bike fence than anything else, and has red carpet, bollards, ropes, tables, chairs, drapes, and punter barriers. Need a stage? They have a mobile one that is pretty enough for an outside broadcast with Coldplay or Justin Bieber. Need an OB? They have a truck with a flyaway kit of HD cameras and audio.

TRUCKING

They have a Kenworth prime mover, and a bunch of trailers which are stored on the family hobby farm down near Goulburn. "I was paying \$1,400 a month to park the trailers



FRANK MADZIN & FIANCÈ - VANESSA DIBBLE WITH MICAH MADZIN - COSTIGAN

There in Sydney and figured a farm would cost less to pay off. So we did it!"

Vanessa recalls the first weekends down there with the boys. "It had no hot water - we have to boil water and put it into a shower sack. It was so cold we had every fire going, plus the generator out the back as well!"

Things have been fixed up since then, and it gives them a great escape from the built up and industrialised Marrickville where they live in an apartment over the 800 square metre factory that Frank owns.

A smaller 500 square metre factory is owned in Melbourne as well, and some of the production equipment is in storage at Homebush, such being the premium pricing of land in our major cities these days.

Frank has his combination heavy license, so the Kenworth can tow a B Double arrangement - which it has done, as far as Perth.

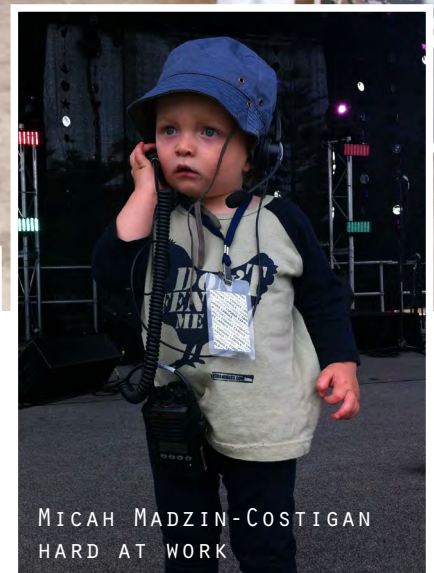
As far as the mobile stage is concerned, Frank observed one on a remote location gig where a hydraulic hose blew out and they could not lift the roof any higher than head height. "They ran a whole weekend of shows with the roof way down - and of course the client freaked out", he said.

This led to the Madzin mobile stage (10.5 x 72m with a 6 metre roof) featuring mechanical construction that if anything goes wrong, a trip to Bunnings will fix.

WELCOME TO THE WAREHOUSE



MICAH WITH HIS DAD'S NUDE CX SPREAD



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VUEPIX SCREEN PANELS

EQUIPMENT

As we tour the factory, it becomes apparent that Frank is workmanlike about his equipment choices. “We don’t get called by promoters”, he says, “so we don’t need to supply for riders.”

He tends to stick to certain brands – EAW for loudspeakers being one. They have 48 line array cabinets, mainly 730’s, and enough subs and fills to do any arena. Amps are Crown, desks are Yamaha and comms are Clearcom.

In lighting Frank favours Martin, with 101, Mac 500, 600, 700 and 2000’s.

For vision there are Barco HD8 projectors that can be double stacked for more punch, along with Vuepix E12 LED screens, chosen because TDC (who are nearby) have hundreds so getting more is not a problem.

One fairly unique aspect of Madzin Productions is the orchestra sized kit of Schertler microphones. “They are great in high noise areas, so they work incredibly well if you have a band and an orchestra together. You just turn them up and they don’t feed back”.

This gives clues about Madzin’s work, but remember – they fly under the radar.

Plus Frank is not emotional about his inventory. We talk about how some production firms put emotion before logic and over invest in the wrong equipment. Frank hasn’t made this mistake.



BIG ORCHESTRA MIC SELECTION

LOVING A BUSINESS

It just comes back to the owner. Frank is and always has been a customer-focused person. But “the work isn’t as regular as it was”, he cautions. “We’ve had a lot of change, and clients started to get three quotes and sometimes take the cheapest”. This led to caution creeping in at Madzins.

“Now it feels like things are settling down. A lot of those clients are coming back. It’s turned a corner this year. You just need to give extraordinary customer service.”

Living on site has efficiency benefits as well, “if we need to get a Plasma out the door at 10pm, we can do it”, concludes Frank.

Soon he will marry Vanessa, who he met the day before a Ben 10 show. She had tickets, he was doing production. They laughed at the coincidence. “Where do you live?” he asked her. “Above my warehouse business”, she replied. “So do I” he said.

“That next day at Ben 10, Frank took my son off to meet the cast”. I turned to my mum and said it was OK, I had known him for five hours”, Vanessa laughed.

Frank is that kind of guy.

BUILT TO LAST

DAVID FORSYTH

THOMAS BRIAN

RUSS LYSTER



Tony Youlton - "Mr Strand"

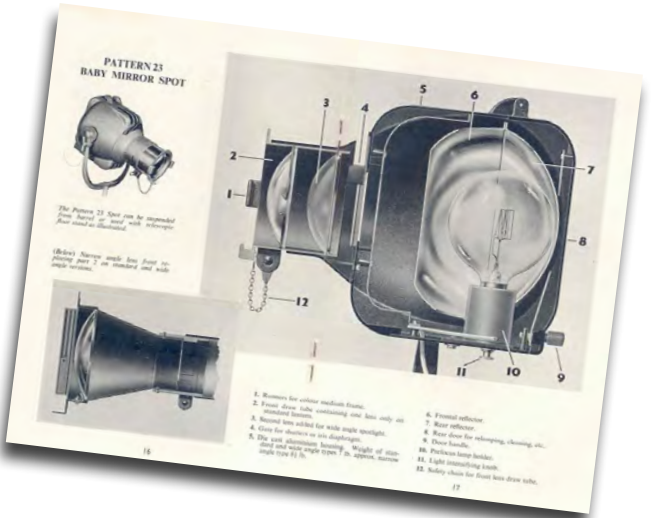
NIDA ARCHIVES

TONY IS AS EQUALLY FORMIDABLE NOW AS HE EVER WAS. IF ANYONE CALLS A SPADE A SPADE IT'S TONY. HE'D ALWAYS ARRIVE UNANNOUNCED AND ONE OF THE STAFF WOULD STICK THEIR HEAD AROUND THE DOOR AND SAY "TONY'S HERE". YOU NEVER KNEW IF YOU WERE GOING TO GET A SERVE OR A NEW PRODUCT.

Tony was 16 in 1960 and wagged school on Wednesday afternoons to operate a 72 row two preset Westinghouse mechanical monster at "The World of Suzie Wong" at the Palais Theatre in Melbourne. Most likely it was a liquid dimmer: rods immersed down shafts filled with water, a bit like a nuke reactor.

These were the days before the saturable reactors – transformer dimmers – which were horrible things with slow and variable reaction times dependent on the load. Tony left school and his mother wanted him to be a teacher. His father died when he was 12. Whilst at school he worked at the Melbourne Little Theatre where one of his teachers, Norman Kaye, was acting. The Little Theatre later became St Martin's. St Martin's had a 36 way Thyatron board which is a valve version of a thyristor dimmer (later to become a SCR and then our mate the Triac).

A year later Alex Brown, who Tony had met at The Palais, had taken over designing the lights at St Martin's and after a failed attempt at University, Tony was asked to join St Martin's as Lighting Operator. Tony was blessed with 24 x Patt 23s, 9 x Patt 23Ns and 6 x Patt 123s and so it began. Alex Brown started Strand in Australia. His father was the treasurer of SEECOL (Strand Electric Engineering Company Ltd). Some may remember seeing this in cast T stand bases. Strand started as the company who manufactured the lettered illuminated signs outside theatres in London's West End. It also made the sights for the famous "Dam Busters" bombing episode during WW2.





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STRAND LIGHT CONSOLE 1935 - 1955

In the early 1950s with the cooperation of Furse in Nottingham and Major, Strand developed the Pattern 23: the first die cast luminaire. Previous to this all the lanterns were bits of folded metal. Strand had previously had great success with the Patt 53, a 1Kw sheet metal fixture developed for FOH positions in the West End. Strand went on to develop lanterns based on the application. The "Pageant" (sort of like an early Patt 750 beam light with a mirrored glass reflector) was developed for the Edinburgh Festival.

The Patt 23 first appeared in 1952 and originally had a 250 watt lamp and was named 'the baby mirror spot'. By 1961 Strand had manufactured 90,000 of them. Strand literally had to work on the likes of GEC and Thorn to get the 500 watt T1 into production, extend the lamplife beyond 50 hours and overcome the 22 degree off horizontal axis issue. Later the Patt 23 MkII had a faceted reflector to attempt to overcome the filament striations of the new T1.

The Patt 123 came a bit after the Patt 23 as a companion product. A sort of acting area luminaire if you will. The 263s and 264s would follow based on Levy and Kook's Century Leko later copied by Kleigl and Altman. So would follow an extraordinary number of luminaires, consoles, dimmers and accessories over the years.

Strand developed the 'Light Console' which was based on an organ keyboard providing remote control using electro-mechanical dimmers, then DDM with thyristor Dimmers, MMS aimed primarily at television and ultimately Galaxy, before embracing the microprocessor with Duet, Octette and then Multi Q.

STAGE LIGHTING ON A SHOESTRING

MT: When did you make the move to Sydney?

TY: I came to Sydney in 1965 after St Martin's and being arrogant I thought I get a job in the theatre in a few days. Errh, no. I was living on the smell of an oily rag, rice and potatoes and worked out how to short circuit the gas. I was flat broke.

I ran into John Bowman (later the Matron of Honour at my wedding) and he told me to go to the Menzies where I operated the board with Ian Cooksley and Jerry Luke doing Follow Spot.

During the day I was manufacturing cosmetics, most famously 'Magic Tan' an artificial tanning product and Mary Quant cosmetics.

That was ok for a while then Alex Archdale approached me to work at a theatre in Killara now called Marion Street. I went there to be the board op and ended up being lighting designer, set builder, Saturday Box Office, Sunday Pizza Cooker and stayed there till it went broke the first time.

MT: Tell me about the first 'Jesus Christ Superstar' Tour

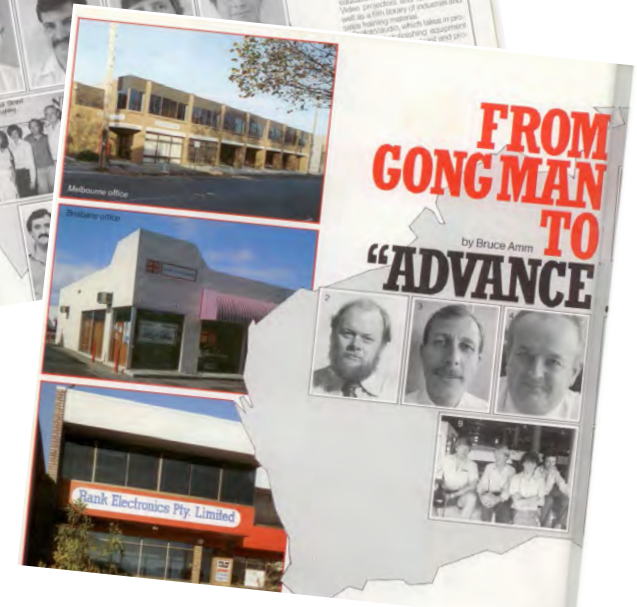
TY: With four of my friends, Lex Marinos, Ted Robinson, Ron Moss and Chris Winter, we started the business 'Forestage' providing production services to a variety of theatres. We were co-producers of the Sydney and Brisbane productions of 'What the Butler Saw' and 'Come Spy with Me'. I was the lighting designer.

That led to a call from Ken Southgate looking for a board op at the Tote Theatre (later demolished to make way for the Parade Theatre). I met Jim Sharman and Brian Thompson on the set of 'Lassiter'.

Jim asked me to do 'Superstar' for Harry M Miller. It was the 2nd of January, 1972. I looked at the scale model and cracked up. A dodecahedron? They gave me the job as Technical Stage Manager - it needed one. We opened in Adelaide then toured to Melbourne then Sydney. Harry wanted it to then go to Perth and Launceston. In that order. I quickly became the Production Manager. It was an epic. John Morrison did the audio with Altec A4s. We did Sydney with Stefan Haag designing lighting at the Capitol on the



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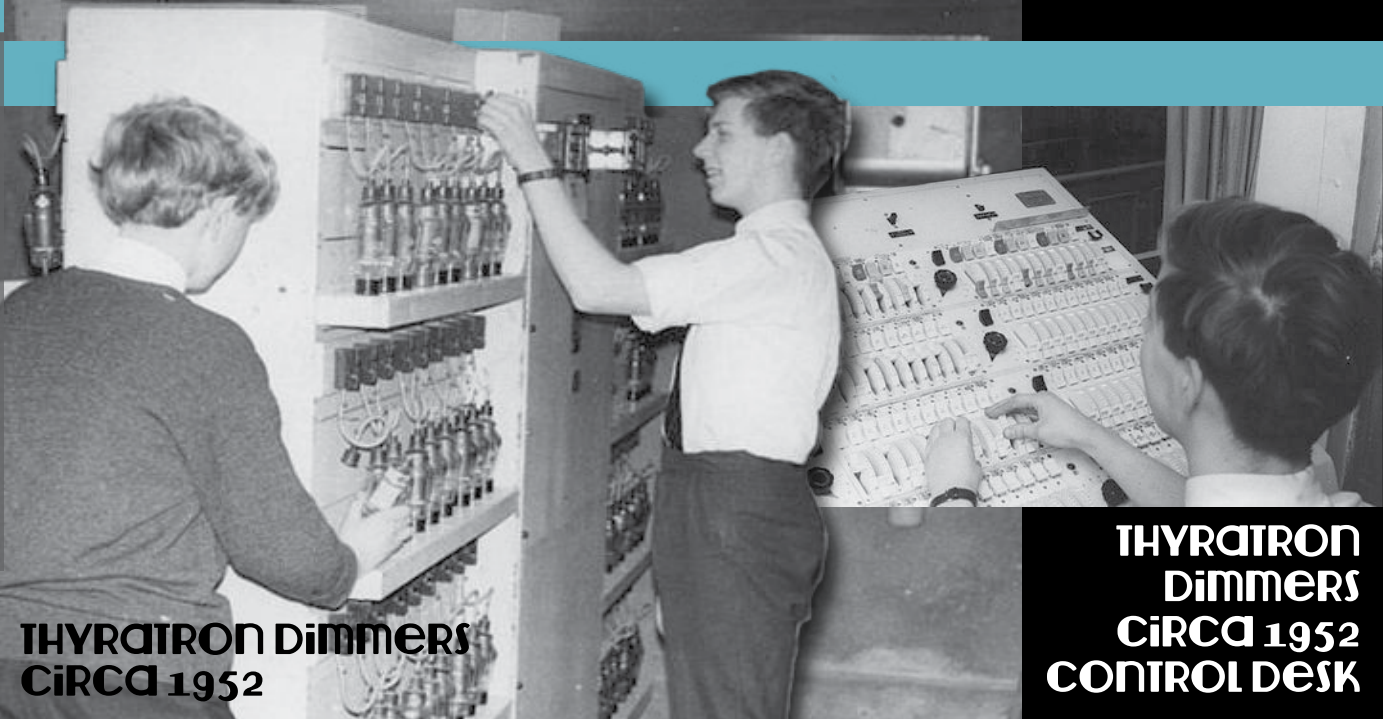
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**THYRATRON Dimmers
Circa 1952**

**THYRATRON
Dimmers
Circa 1952
CONTROL DESK**

7th May 1972. I'll never forget the Steel and Martin carbon arc followspots with their fantastic optics.

MT: What was it like working with Harry?

TY: Everyone was terrified of him. I wasn't. No one would make a decision. I did. When he sacked lighting designers I'd end up lighting it, twice. When he sacked board ops I'd take over. These were the days of double Strand SP40 3 preset desks with quadrant faders all made functional by Bob Cunningham and Nick Dowling from AETT.

MT: What happened post Harry?

TY: I settled down and had a couple of kids, worked for Amy McGrath at the Australia Theatre in Newtown, then for Aarne Neeme at the Playhouse in Perth as administrator. I did a stint at Perth Tech writing the Course which was eventually taken over by WAAPA. I did a few stints as LX designer for the WA Opera, WA Ballet and then was employed by the Albany Council to produce "Amity Day" which celebrated the Albany sesquicentenary with animals, children and steam trains. Avoid working with animals and children.

I came back and wrote to Richard Wherrett looking for a job with the STC, and missed out when Roger Macdougall accepted the job as production manager. So here I was left in Perth with not much to do when Denis Irving, who was running Strand rang up to ask if I was interested in becoming the NSW Lighting Manager. Six months passed without any offers.

MT: Tell us about Rank Strand

TY: I got a call from David Bird, who had replaced Denis, to say that they were interested in my coming to Sydney. David headed up Strand in Melbourne at the time. David was a close friend of Roger Barrett and together they would create mayhem. Anytime, anyplace and anywhere. Roger could be a mad woman.

A bit like Freddy Mercury. Rob Nichols, the hire manager at Strand was the only person to be able to control them.

I took the job as the head of Rank Lighting NSW for the next seven years. Rank was too many things for too many people. It was Rank Strand, it was Rank Arena, it was Rank Aldus and it was also Pinewood Studios and Altec, Lexicon, Steinburg and all the other agencies.

Clearly some things needed to change. I said as much. Rank sold off the consumer electronics businesses to NEC.



At the time David Hannay, Wolf Grey and Peter Amos were there and they as they left took to Amber a fair few professional product lines. I was left looking after Brakell Products making curtains and Screens which I negotiated the sale of to Australux.

MT: So Rank crashed and burned. What was next?

TY: "The wheel turns full circle and now I am here". I found myself back at the Old Parade theatre. I stayed there for 16 years teaching NIDA students and when John Saltzer left I took over as Technical Director.



NIDA STUDENTS 1975

NIDA ARCHIVES



I spent the next two and a half years building the New Parade theatre and the Stage II NIDA Building.

MT: Did you retire after NIDA?

TY: What are you talking about, I haven't retired at all. Far from it. No, there's a new theatre down the road where it has to be lit with LEDs because there's not enough power. I just lit 'Bombshells' for the Ensemble Theatre in Kirribilly. I still get hauled into situations with know all consultants who don't know anything to change their diapers. I'm too old to change diapers.

MT: Who inspires you?

TY: They're all dead. I digress. Peter Smith was the head of production at AETT (Australian Elizabethan Theatre Trust); Francis Reid; Patty Moyston; Jonathon Ciddor; Richard Cotteral; John Newing; John Robinson; Irene Mitchell; John Ellis; Felicity Furkin and his magic touch with electronics; Selecon and ETC to an extent however I believe it's about controlling the beams rather than bashing light onto the stage.

MT: What's your message to the youngsters who read this?

TY: Don't ever be afraid of what you can achieve. Love the industry, the theatre and what it tries to achieve. Big shows have less heart, smaller shows have more. You're here to support the performer not the other way around.

Learn to love the equipment.

While you're there, try and work out how it is best useful.

Nothing beats a Patt 23 with a gobo you made from a pie tray punched out with a toothpick during your lunch break for a fussy lighting designer.

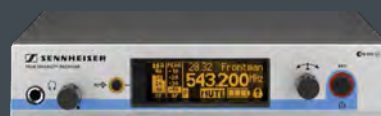


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What-If?

What If the stage hands forget to tighten a shackle?

BY ANDREW MATHIESON

The last few articles have been burrowing deeper and deeper into the complexities of Risk Assessments, Codes of Practice, Standards and a myriad other technical requirements for stage machines and control systems, so we thought that now might be a good time to take a deep breath and step slowly away from the textbooks to consider a few basic fundamentals that help us all work safely in an environment filled with things that can trap you or crush you and things that can fall on you or that you can fall off.

We've discussed at some length certain aspects of designing, specifying and selecting stage machinery and control gear that achieves the highest level of safety that the job can possibly require, but all of this engineering and legislative diligence can be defeated by the most basic acts of ignorance or carelessness.

Let's assume you've carefully done all your risk assessments, decided on the class of hoists to buy and put in a control system that matches the requirements of the hoist and the venue. You've rigged a truss from 4 of these hoists, carefully synchronised the hoists and fitted load cells so you're confident that you can't bend or tilt the truss, and you've then installed an Emergency Stop system so that if something still goes awry, all will be dealt with by hitting the big red and yellow button.

What else could you possibly need to consider now that you have a rig which is safe to operate? All the standards and regulations tell you that you can sleep peacefully, right??? What about when the speaker box hanging from the truss falls off and brains a punter (and of course said punter's father is a Supreme Court Justice) because nobody thought to check that the shackles on the speaker box rigging were tightened up and moused off?

What about the piece of pipe straddling the gallery, you know, the one that the truss clipped on the way up and came tumbling down to the stage, just missing the diva waiting in the wings for her cue?

What about the stage hand who got caught up in a line and broke his leg, just because the flyman assumed the stage

was clear and didn't bother to shout out "MOVING" before hitting the GO button?

What about the visitor that fell off a gallery because of the loose handrail section – the one that everyone has been complaining about but had just assumed that someone else had reported it to maintenance?

I'm sure that everyone could contribute pages more of examples and war stories about "that time when" - hopefully describing near misses and not anything more serious.

So, some food for thought to finish up for this issue...

Check everything, check it again, and to be safe, check it once more, and never move a load unless you're certain that it's been checked by someone who knows what to check.

Observe the load moving – no matter how many times you've made the move, something may have changed. If you can't see what's going on, put safety spotters where they can see what's going on and can reach one of those big red and yellow buttons.

Communicate before you operate – make sure you know who is where and that they are aware of what you're about to move.

Report safety issues to someone that you are confident will deal with the issues. Make sure that there is a system that allows you to report in writing and that the appropriate people get to know about what's reported in writing so they can deal with the issue.

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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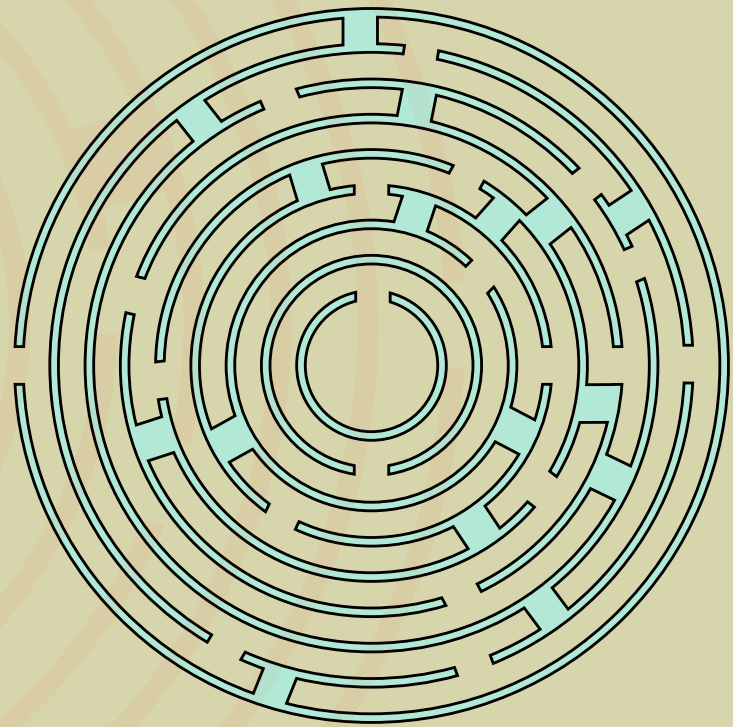
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INSTALL ADVISOR

NIGHTCLUBS

BY JIMMY DEN-OUDEM



HARD WORK - NIGHTCLUB SOUND

THERE'S A CAR RENTAL PLACE IN SYDNEY WHICH IS CHEAP, AND FOR GOOD REASON. THE VEHICLES HAVE ALREADY BEEN FLOGGED TO NEAR DEATH BY THE TIME THEY JOIN THE FLEET, AND THEY REMAIN ON THE ROAD WITH ONLY THE MINIMAL AMOUNT OF MAINTENANCE REQUIRED. THIS IS ABOUT THE SAME AMOUNT OF MAINTENANCE GEAR IN SOME NIGHTCLUBS CAN EXPECT TO SEE IN ITS LIFE. MINIMAL. IT'S NOT RIGHT, BUT IT IS A REALITY. IN MY HALCYON DAYS OF YOUTH I ATTENDED A VENUE WHERE HALF THE PA STOPPED WORKING AT 1AM. I'M RELIABLY INFORMED THAT IT STOPPED EVERY NIGHT AT 1AM. FOR SEVERAL YEARS.

PA systems in nightclubs have a hard life – not because they're toured in and out of trucks and flown and dropped and stuff, but because they're commonly the largest systems around to be operated on a regular basis by people whose specialty is not audio. I've seen an internationally acclaimed DJ drive stacks of dual 18" subs into clip continuously. Another DJ to pass through the same venue was handed a bill for replacement drivers after frying some eight of them. This is not the way "audio" people operate, but it's the kind of treatment these systems face night in, night out. So how can such behaviours be tamed?

The short answer is that often, they can't. The best we can aim for as installers is to mitigate the consequences of the systems we build being abused. There are a few ways to do this.

First up, build a bigger system than you need. A system without adequate headroom will quickly be overdriven in search of sufficient SPL. An underpowered amplifier will output straight DC much sooner than a larger one, and this is the fastest way to send voice coils directly into quiet

oblivion. A bigger system will be capable of producing the expected SPL without amplifiers being driven into clipping. Remember that to achieve a 3dB level increase, you need to double the system power. Building a nightclub PA is not cheap – either you do it right once, or you find yourself continually replacing parts. Fronting up the cash for a decent system first time around avoids expensive and time consuming service work that cheap systems will inevitably require.

Know the limits of the system, and have a protection mechanism in place which stops signal before it becomes damaging to the system. Cars have rev limiters to prevent damage, PA systems should have the same. Many turnkey systems have brainy amplifiers, or processors with sense inputs. Understanding how these work is really important, as if they're not correctly connected, setup and calibrated they can't do their job properly. Some systems may support additional limiting which allow you to control SPL as well.

High pass filters are your friend for keeping ridiculously low frequencies at bay – there's nothing wrong with a very steep roll-off which knocks out anything below 20 or 30Hz. No booze adled clubber is going to walk away at the end of the night saying "it was pretty good, but man that 30Hz roll-off was annoying". Honestly. If anyone argues the point, offer to bypass it as soon as they sign a waiver taking responsibility for any damage to LF components. Most systems run out of subs well before higher frequency boxes. It doesn't matter whether the club owns the system or it's leased – protecting it is in everyone's interests. If your client questions this, ask how long people will stick around buying drinks in their club if the music stops due to the system giving out.

An important note relates to ownership protection: If you're leasing a system to a club, get it listed on the PPSR in case the club goes bust overnight (like that never happens!).

This gives you some assurance of being able to prove your claim of ownership, and a better shot at getting your gear back should it come to the worst.

When planning a nightclub sound system, consider where the majority of the sound needs to go. Commonly this will be a dancefloor. Speakers stacked in each corner all pointed at one another is certainly one way to do it, but is almost guaranteed to have some interesting comb filtering and phase cancellation effects. Ideally these should be avoided. A more sensible design is to pick a direction from which the sound originates (perhaps from where the DJ riser is), and use additional speakers back along the venue to maintain SPL. These should be delayed such that they are phase aligned with the main system, again to avoid the PA fighting itself. These delay speakers should be levelled such that there's not an obvious transition between them and the main system.

My general thinking is that in most cases line source array systems are not appropriate for nightclubs in Australia. As a country we lack the commitment or audience to build clubs tall enough for such systems to work properly – not to mention that some of them characteristically have a bit of a dip in the low mid (chest thumping) frequency region. This matters where dance music is concerned. A properly designed, distributed point-source system will likely sound better and allow more even SPL coverage in rooms with low ceilings.

Also think about the nature of the content the system will be used to produce; a DJ only system affords more flexibility with speaker placement, but once microphones are involved you need to keep FOH speakers pointed away from the stage. Are bands going to be staged, and if so will stage monitors be necessary? Does the system need a dedicated mixing console or can an automated DSP system handle a couple of radio mics with some compression and basic filters applied?

When designing the back end of a sound system for a nightclub installation, pause to consider very carefully how the amplifiers are loaded. First up, avoid running really low impedance. Yes, a lot of amps will run down to 2 ohms, but mostly they'll be happier running at 8 ohms. Single boxes on each amp channel are less likely to be noticed and result in a 2am service call if an amp channel fails. Load multiple speakers in single areas across multiple amplifiers – this way if a whole amp fails you'll still have some sound in each area. This is especially relevant for satellite speakers in bars, foyers, bathrooms and the like.

Make sure your DJ monitoring is up to task. Lousy monitoring or over-restrictive limiting in the DJ booth is likely to result in the main system being driven harder so the DJ can hear themselves. Monitoring could be anything from 12" and horn active boxes flown above the DJ position, through to 15" and horn composite boxes on top of dual 15" subs on each side. Some festivals even use small line array systems! The DJ monitoring should be independently fed from the booth output on the DJ console, thus allowing the DJ to set whatever level they want. Put a limiter on the monitors to protect them, but give it enough headroom for adequate level.



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Commonly most nightclubs will have bar, restroom, lounge and sometime pool table areas in addition to a main dancefloor. Sound needs to extend to these places to maintain the atmosphere in the venue, but the delivery mechanisms will often be different. Large point sources in such situations impede conversation, and if bar staff can't hear patrons they can't sell drinks. Small source distributed systems are a much better choice for these parts of the venue. You can even apply a bit of a scoop EQ from 300Hz – 3kHz to free up some acoustic space in which dialogue can then exist. People are social animals, and if they can socialise without needing to shout at each other they'll enjoy the night out more.

Install a proper power distribution system, and balance the device loading equally across phases. Bigger amps draw more current – if you have three amps for subs put one on each phase, then repeat the distribution process for smaller amps. Many distribution boards have inbuilt metering to show current draw – use this with the system running at normal operating levels to ensure your loading is good. Some power suppliers bill based on the highest single phase usage, so good loading can carry ongoing cost benefits too.

Power-up sequencing is important too – hitting every amp at once can pull huge in-rush current high enough to throw breakers. There are two ways to avoid the problem – train the people who run the system, or automate the process to remove the possibility of user error.

Perhaps the best way to sum up sound system design for nightclubs is to consider all parts of the signal chain which are susceptible to user-related problems, and have means in place to prevent or correct such errors.

CX SUGGESTS :

The Allen & Heath Xone:92 DJ mixer provides four line / phono inputs, plus mic / stereo return inputs. It has dedicated main, booth and record outputs as well as two auxiliary outputs to which any input can be routed pre or post fader. www.allen-heath.com



XONE:
92 DJ MIXER

The RTI ZRP-6 is an Ethernet equipped automation control processor with a great number of user interface choices from RF remotes through to simple wall panels. On-board control outputs include RS-232, IR, contact closure and IP. Combined with suitable contactors, it makes a great way to progressively power up a system, as well as providing remote control for the installer. www.rticorp.com



RTI ZRP-6

Avalon CLUB series by EAW are a range of speakers which have been designed specifically for nightclubs – both sonically and visually. The range caters to both main and delay stacks / hangs, and is available in a range of finishes to match room fit-outs. www.avalonbyeaw.com



AVALON CLUB 2

The BLU-160 Soundweb London digital audio processor from BSS has a variety of input options both analogue and digital. It's externally controllable via BSS BLU wall controllers or third party control systems. Routing is setup via HiQnet London Architect and is fully configurable. www.bssaudio.com



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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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NIGHTCLUB LIGHTING

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IN THE DARK, EVERYONE LOOKS AS GOOD AS YOU CARE TO IMAGINE THEY DO. THIS SAID NO CLUB IN EXISTENCE RUNS IN TOTAL DARKNESS. LIGHTING IS AN IMPORTANT COMPONENT TO SETTING THE MOOD OF THE VENUE, SO IT NEEDS TO WORK.

Lighting operators in nightclubs commonly arrive at work just before the venue opens, and leave many hours later ready for sleep. They're not typically paid to do regular maintenance, so often it doesn't happen.

We're at an interesting era in lighting, where LED sources are now a very practical choice in terms of quality (and sheer quantity) of light output. LED is a brilliant choice for nightclub lighting since there's no bubble to fail – most LED sources are rated for 20,000 – 50,000 hours lifespan. Assuming a club runs every night from 10pm to 6am (8 hours), that's just shy of 7 years use at the worst. Compare this to a discharge lamp with a rated life of 1000 hours. The ongoing cost of ownership is lower for the LED.

More likely to be the source of failures are mechanical components in optical paths. A fixture which can strobe without needing a mechanical shutter to do so is likely to be more reliable in this aspect of operation. Most clubs will use haze or smoke on a regular basis, and eventually the residue from this makes its way into every part of the venue – including the equipment. Fixtures which have sealed optical paths will suffer less degradation in performance than those that don't. If there's no way for dirt to get inside, the light output won't be reduced over time as much. Wiping over a single front lens is easier and hence more likely to happen than full disassembly of an entire unit for cleaning of every element of the optical path.

Static LED fixtures are great for reliability, but there's only so much excitement changing colours and strobing beams can create. Most punters expect light beams that move. In most low-ceiling environments (anything less than about 6 metres), better results will be had with a higher concentration of smaller fixtures. More sources gives better options to the operator. Personally I'd be happy with a bunch of fixtures that had a few good gobo selections and a rotating prism. Much more than this in the way of beam features and you're just buying into trouble – rarely is the time to program such features available, and ultimately they're just another thing which can fail. Keep it simple.

Moving heads have been "all the rage" for many years, and it's at the hands of this craze we've seen a decline in moving mirrors. Moving mirror fixtures don't constantly throw the whole optical path about in different directions, and generally a mirror can move a beam faster than a moving head can. In a nightclub both these aspects of operation make mirrors worthy of consideration. Since the movement range on them is more limited placement becomes more important, so keep it in mind. Ensure you research beam angles properly before specifying anything.

Other types of LED lighting are also worthy of consideration – bud lighting can be used to great effect to accent architectural features of the venue, as can LED bars which allow entire walls to change colour in an instant. Now more affordable than in years gone by, LED video screens are gaining popularity. Screens can generate a lot of light - sometimes to the detriment of the atmosphere in the room. For this reason, pause when specifying one to consider just how bright it actually needs to be run. Also give due consideration to what you're actually going to feed into the screen. Is a media server required? How will such a server be run – manually from a computer or triggered by a console? Where will content be sourced from?

OX INSTALL ADVISOR

CX SUGGESTS:

DTS Lighting make a range of IP rated architectural fixtures – of special interest to nightclub installers will be the FOS bar range, which can be used for everything from wall-washing through to very high output large dot-pitch pixel mapping. www.dts-lighting.com



DTS FOS100S



The Pharos TPC customisable touch-screen wall controller outputs one universe of eDMX to directly control ArtNet KiNet, sACN and PathPort fixtures. States and sequences can be programmed and triggered via light and temperature sensors, astronomical clock, Ethernet or manually via the touch screen itself. www.pharoscontrols.com



The ROBIN 300 LEDWash from Robe has 19 multi-chip RGBW LED elements, plus 450 degree pan and 300 degree tilt. 15 to 50 degree motorised zoom and availability of white light in a number of colour temperatures make it versatile both as an effect and as stage lighting. www.robe.cz

ROBE ROBIN 300 LEDWASH

The M2GO from Martin is a lighting console with four universes of DMX on-board, as well as a comprehensive effect engine and internal fixture editor. Its small footprint makes it a good choice for venues where space is at a premium, and the user interface is simple and straightforward to learn. www.martin.com



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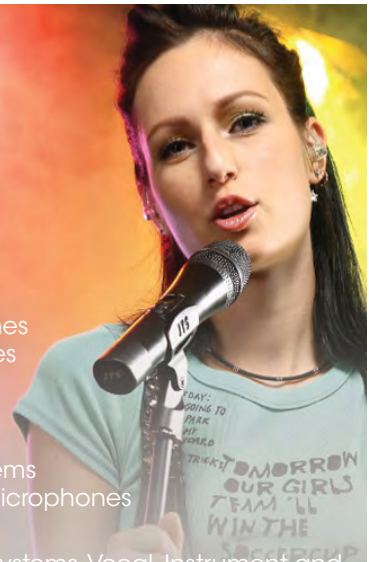
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Contrast

BY ANDY STEWART

Mixing isn't always about balanced sounds and subtle tones. Sometimes the opposite holds true.

Mixing audio – live or in the studio – is so often about merging sounds together and making them all fit that it's sometimes easy to forget about *contrast*.

There are times when a sound needs to be more distinctive and better separated from its neighbours in order to jump out and hook the listener's attention. In your next mix, that sound might be a guitar, a synth, a backing vocal or an effect... or all of these sounds in some circumstances. Next time you're at the console or computer mixing up a storm ask yourself this simple question:

"Do I need more contrast in my sounds?"

FEATURES, WHAT FEATURES?

The question is particularly relevant when problems arise. Maybe your mix sounds too fat and indistinct, or maybe it's grown flat and lifeless. Sometimes you'll reach a point in proceedings where the mix lacks colour and drama, or gets perilously thin as everything competes for the high end. Sometimes a mix can develop a grey pallor where nothing seems 'visible' enough; everything seems buried in a haze of distortion, reverb and over-compression and you can't see your way through it.

When any of these sorts of problems arise, go back to first principles: "Can I hear the things I want to feature, and if not, why not?" Of course, you may have neglected to even ask yourself this basic question, or worse, *chosen* for your mix to be altogether lacking in features. Typically this only results in your listeners falling asleep through sheer boredom. But hey, maybe you're mixing a proprietary soundtrack for a day spa health retreat, where all the towels are white and everyone smells of sandalwood. You certainly wouldn't want to disturb anyone's serenity in that situation!

LOSING 50%

Sometimes your determination to soften, balance, merge and settle the sounds into place can result in a lack of definition. You may not even notice this happening at first until you A/B your mix against another piece of music. You do A/B your mixes I assume?

Particularly when you're mixing in a critical listening environment, like a studio control room where everything sounds more focussed, sometimes you can get carried away with making everything sound too subtle and discreet. Always remember, in these spaces your mix should sound more dramatic than you ultimately want it to. Out in the world 50% of that drama is lost in a sea of sensory distraction.

IT'S ALL UP FOR GRABS

So where does this healthy contrast come from? Well, the best place to start is in the song writing, followed a close second by the recording phase. Here everything is up for grabs: from the environment you choose to record in and the instruments you choose to play, to the people who play them and the recording equipment you use to capture it all. Mixing follows on from there, but here too sounds can be turned on their ear at a pinch. Fat sounds can be turned into tiny midrange squawks, dry sounds into ambient atmospheres and so on – there's an endless world of possibilities out there. It's not the equipment that determines your limitations, but how your brain determines what to do with all that gear.

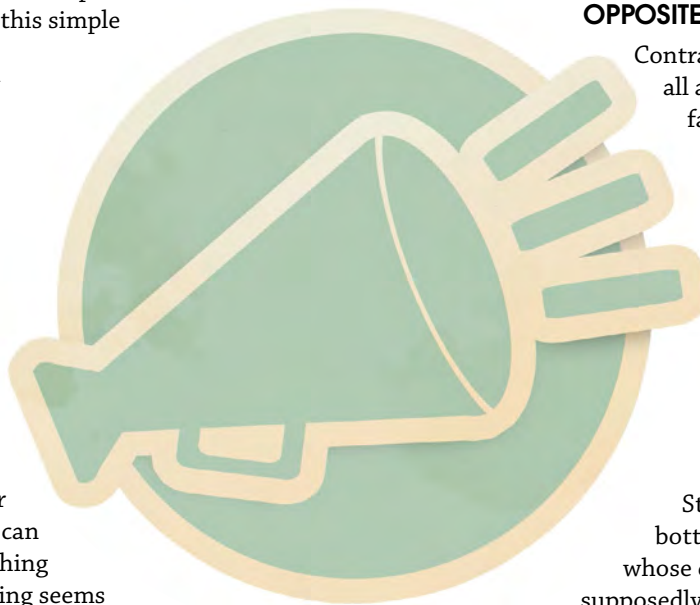
OPPOSITES ATTRACT

Contrast, in the simplest terms, is all about opposites attracting: fat with thin, wet with dry, wide with narrow, long with short, distorted with clean, and so on.

If you're looking for more contrast in your current mix, one of the best places to start is with high- and low-pass filters. Get to work on some of the sounds that aren't pulling their weight.

Start off by ripping the bottom-end out of any sound whose core tonal contribution is supposedly midrange. If that's what you're after, why on earth do these sounds possess frequencies like 38Hz? Get rid of them. It might be a piano or an overdubbed guitar... whatever it is, try hitting the sound with a 24dB per-octave filter and don't just fiddle around the extreme edges either... push it right up to 800Hz. Next try ripping out the tops as well by applying a low-pass filter at around 4kHz. That way the instruments properly designed to articulate the bottom end, like bass guitar, will be far clearer, and the sound you're having trouble with will suddenly fit into places you never thought possible.

The point here is to emphasise what's interesting about a



sound, or create interest where none really exists... some of the coolest, most other-worldly sounds I know are made from heavily filtered, largely conventional ones. Of course it's up to you how far you push the filters, but the key concept here is <<experimentation>>. Listen to the way radical and/or seemingly idiotic EQ tones affect the overall soundscape you're creating. You might be surprised by what you conjure up.

Reverb – space generally – is another key ingredient that can make or break a mix. When used badly it can savage definition. Start by fundamentally increasing the contrast in your mix between the wettest sounds and the driest. Remember, contrast is just that; a dry sound is best appreciated when a wet sound accompanies it. If all the sounds are wet – or dry – the sense of space and scale is far less apparent. Put a dry sound in front of a wet one, however, and the three-dimensionality of the picture immediately springs to life and becomes inescapable to even the most disinterested punter.

EVERY SOUND IS FARE GAME

Nothing is immune from the process of experimenting with contrast. Pan things hard. Where there are too many stereo sounds in the mix, cut some of the left or right channels so individuals instruments suddenly become mono and appear <<somewhere>>, rather than <<everywhere>>. Hack into vocal tones, distort one guitar but not the other, make one reverb effect long and the other very short, mix it up... I could go on here with endless examples but I'm out of space.

HAM SOLO

Too many engineers seem to think a great mix is made up of a bunch of manicured sounds built entirely with the solo button engaged... All they have to do is release it and hey presto, the perfect mix – total and utter nonsense. A good mix is the sum total of all the sounds working together, and how any individual instrument sounds in isolation is essentially irrelevant.

Whether you're song writing, recording or mixing, think about contrast, experiment with the sounds in your mix – particularly the ones that stubbornly fail to engage you – and don't let the word 'mix' be subconsciously replaced with the word 'blended'.



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Meyer Sound UPQ-1P

What kind of speaker does \$10k buy?

BY JIMMY DEN-ODEN

The UPQ-1P is a 15" and horn speaker cabinet and typical of Meyer Sound it has amps built-in.

At nearly fifty kilograms it is certainly no toy, nor is it a one person lift. The dual handles on the side of the box are heavy duty and with good reason. The top and bottom of the speaker box have metal plates, with threaded M10 rigging points all over them (I counted 22 points). Our cabinet shipped with a couple of M10 eye bolts for flying purposes, and there is a top-hat in the base so you can put it on a stand.

The driver configuration is not unconventional – LF is handled by a 15" neodymium magnet cone driver with a 2 ohm 4" voicecoil. The driver is rated to 1200W AES, and the amp feeding it is good for 1000W (unclipped sinewave for at least 0.5 sec). That's serious power. The 4" HF voicecoil and diaphragm exits through a 1.5" constant-Q horn, and has a 275W amp module attached. 4" is huge for an HF voicecoil – probably the largest you're likely to find in anything. Crossover between LF and HF is 700Hz which might seem kind of low if you didn't look at the HF voicecoil specs. Nominal coverage is stated as 80 x 50 (HxV) degrees at -6dB, and this widens out gradually to 100x60 at -10dB. I believe this to be accurate. I really like how the spec details not only numbers, but also the science and measurement methods used to derive them.

Frequency response is 60Hz – 16kHz +/- 4dB, measured at 4m. Again going with what I heard, I'd call this a fair claim. Phase response is 470Hz-16kHz +/- 45 degrees, and maximum SPL is listed as 136dB measured at 1m. You need a source capable of producing +20dBv into a 600 ohm input

to achieve this. The UPQ-1P is entirely self protecting; so long as the input signal is clean (read unclipped) the box will protect itself from overload. You can't destroy it with too much of a good signal. Where it can go wrong is when additional limiters are put in-line on the input, clipping the signal before it hits the amp. Feed it a good source, let the box do its thing and everything will be fine.

Consistent Goodness

Having toured the UPQ-1P around Australia on the CX Roadshow and used it in 6 very different environments, its biggest strength for me was the consistency of its performance across the venues. Completely unprocessed, straight out of the box it just sounded good in every room. It's not unusual for a certain speaker to sound good in a particular environment, but everywhere? The laws of physics dictate this shouldn't be possible and yet somehow the UPQ-1P stands in defiance of these and manages to work well wherever it is. I even stuck it on my studio desk in place of a near-field monitor to test this theory – even in



this utterly inappropriate application it still sounded pretty good. This test (if you could call it that) also highlighted how low the noise-floor is when no signal is passed. Overall response (when not in a ridiculous situation) is quite neutral with a clear roll-off from 60Hz(ish) down, and a gentle rise around 2kHz. Vocals sound incredible. Round the back of the box is the input section and amplifier module. There are XLR input and loop outs for audio, and the same on PowerCon for the electrical supply. There's no attenuator, no network port, no DSP access, no power switch, nothing. Just power and input. There's no way to make it not work. You can option the box with an attenuator / phase reverse module. The punched metal grille is solid and well attached. The amp module is cooled by a combination of convection and forced cooling. The thermo fan that sits amidst the sizable heatsink kicks into gear only when it needs to, and by the time this happens the box is pushing enough audio that you can't hear the fan noise over it. Teamed up with an appropriate sub the UPQ-1P gets even better, but just in its own right there's a huge amount to like about this speaker. It's balanced enough for the most delicate applications, and more than sufficiently brutal for the most demanding. The ultimate point here is that \$10k buys you a really versatile product from a very well reputed name, and that's the value proposition.



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

<p>Voice Two 2 x E435 1 x EA600 1 x EP1 1 x EF45</p>	<p>DJ Three 6 x E435 2 x EA600 2 x E110 4 x E110A</p>	<p>Band Four 8 x E435 2 x EA600 4 x E110 4 x E110A 2 x EF45</p>	<p>EL-835System 6 x E835 2 x E210SUBAS 2 x LSUB1200</p>	
<p>150 300w RMS</p>	<p>350 2,700w RMS</p>	<p>450 3,600w RMS</p>	<p>elements it's elementary</p>	<p>HK AUDIO</p>

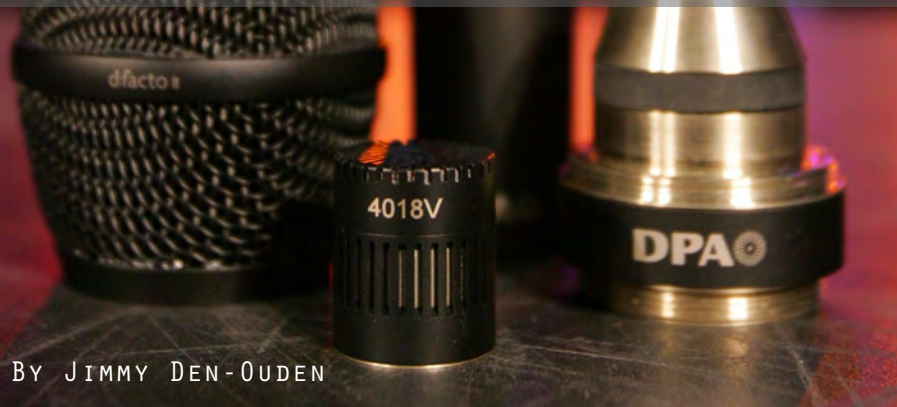
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 ACT: Pro Audio | NSW: Kirby Productions | NT: Top End Sounds | QLD: Guitar Exchange; Musiclab; Mackay Music | SA: BSS Light Audio Visual | WA: Kosmic Sound & Lighting | Vic: Factory Sound; CC's Light & Sound. Distributed by CMI Music & Audio. For more info visit: www.cmi.com.au



DPA d:facto II

Vocal Mic

GETTING A HANDLE ON THINGS



BY JIMMY DEN-ouden

FOR A TIME I WAS RETICENT TO EMPLOY CONDENSER MICS ON STAGES WHERE A DYNAMIC MIC COULD DO THE JOB.

CONDENSER MICS CAN BE A BIT "TOUCHY" FOR SOME APPLICATIONS. ESPECIALLY WHERE MONITORS ARE INVOLVED. UPON DISCOVERING THE D:FACTO II EXISTED I INSTANTLY WANTED TO TRY IT. MAYBE I LIKE BUYING INTO TROUBLE?

The d:facto II is a modular condenser microphone, at the heart of which is a 4018V capsule. The modularity means the capsule can be removed from the cabled "handle" and attached instead to an adapter which allows it to mate with Shure and other wireless mic transmitters in place of their factory capsules. Clever.

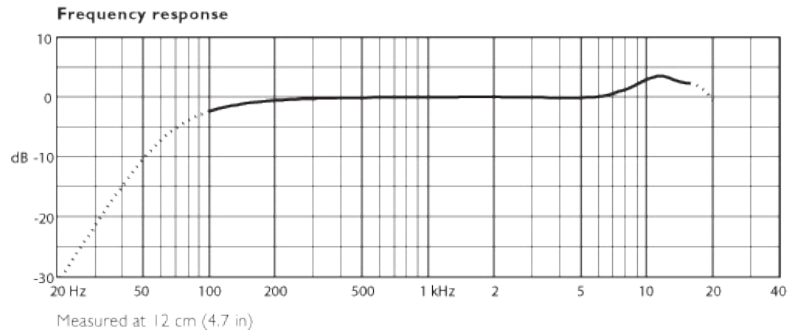
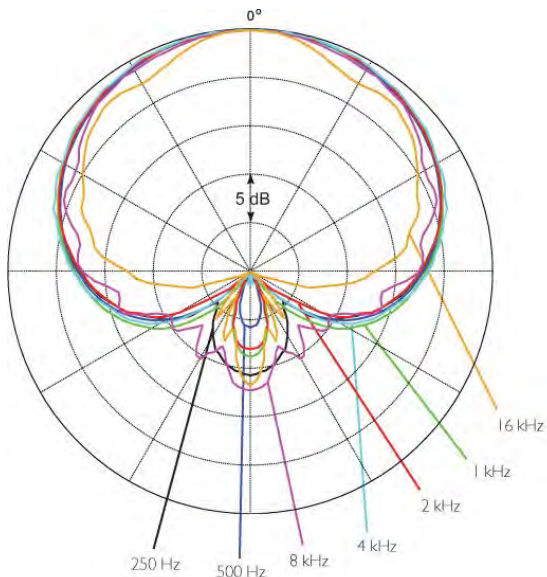
The d:facto II kit is priced as either a handheld or a radio option, though I'm sure you could buy the relevant bits to make a kit that does both. The disassembly / reassembly process is dead simple, and when you twist the bits together they all fit properly. It's well machined, and as you hold it you can tell the majority of the weight is in the head. Lacking a suitable situation in which to try the wireless adapter I didn't try it, but I did take the mic to a gig in its cabled configuration. I did in fact all the things you should never do – rocked up for a walk-in mix on a band I'd never heard, and put an unknown mic in front of the lead vocalist. In fairness I gave him the option to swap to his own mic, but he was happy with the DPA.

I had to do FOH and monitor mix from one console with no time to tune wedges. I took the precaution of Y-splitting the mic signal so I could have some form of independent EQ over the monitor send, though as it turns out I needn't have bothered. I did tape the mic lead into the mic, since dropping a phantom powered connection with the channel open invariably ends badly.

The d:facto is very politely behaved on monitors – more than I expected. I put this down to two factors – the overall frequency response curve and the rather well controlled polar pattern. DPA has its heritage in building reference microphones for measurement, so seeing a very uniform response across the frequency range is not unexpected.

There's a little rise (about 3 or 4dB) around the 12kHz region, but it's not what I'd call over-excited. There's no accentuation at all down low, just a slight roll-off around 200Hz which steepens below 100Hz.





The very linear response down to 200Hz means the mic doesn't rely on an EQ kick down low to sound right. As you move off axis the linearity starts to drift a bit and by the time you're 90 degrees off not only is the overall level down a fair bit, but the high end rolls off markedly. There are some interesting lobes out the back, but the sensitivity of these is quite low relative to the on-axis response so it doesn't really matter – they certainly didn't pose any problems for me.

Handling noise was insignificant – with a HPF on the channel I didn't actually notice any. I would put a windsock on it outdoors on a windy day. The d:facto II doesn't come

with one in the box, but it does include a nice hard case and soft “pencil case” type bag too. The included mic clip looks cheap and nasty to me, Julius reckons it's fine and I'm just being petulant. Being it was the only d:facto II in the country at the time, I decided against drop testing the mic to see how tough it really is. If the DPA lapels we use on CX-TV are any indication, it should stand up okay to routine abuse. So how well did it work on the gig? It did exactly what it was supposed to. Vocals were clear and detailed, smooth down low, and intelligible. It feels very different from lots of dynamic vocal mics – you really notice the low end response extends flatter, a lot further down. For many singers this mic would be an obvious first choice – if they can stand to part with the cash.

There's no question in my mind that the d:facto II performs exactly as a mic of its calibre and price should – it really is a stellar piece of kit. How much difference this will really make though depends on the PA, the environment, the operator, and ultimately the person holding it.



BRAND: DPA
 MODEL: D:FACTO II
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HIPPOTIZER GRASSHOPPER

MEDIA WELL SERVED.

BY JIMMY DEN-ODEN

Green Hippo has been around for some time, and was recently taken on by Lexair in Australia. They make an array of different media servers, and the Grasshopper sits roughly in the middle of the range. Ours was running the latest v3.2 software.

Let's look at the hardware first. The inalienable truth about the Grasshopper is that it's basically a very serious computer in a rackmount enclosure. Just like nearly every other media server on the planet. The machine has the expected gamut of multi-pin connectors on the back, which link to a nice 1RU breakout panel which sits above the 2RU computer. All the ports are nicely labeled, and there's enough connectivity that you don't need to go round back to plug anything in. That's quite appealing. Connectors on our test unit included power, USB ports for keyboard and mouse, dual DVI ports (we'll get back to these), plus BNC inputs for composite, component, and SDI plus an HDMI input. There's also a pair of RJ45 EtherCons for LAN and ArtNet connectivity. The system runs two discrete bits of software. The Hippo Engine manages all the actual video processing, and the ZooKeeper application provides the user interface which allows you to drive it all. You can run ZooKeeper on another machine to keep overhead on the video processing machine lower. Another application (Screenthief) allows video output from other machines on the same network to be fed into the system.

ZooKeeper is quite an apt name for the UI. Launch it and you get a desktop layout, which can be populated with various different components. These can be started as needed, again keeping processing overhead low by eliminating unnecessary tasks. The ZooKeeper layout allows you to have four "virtual desktops" running, and you can switch between these. We ran the video engine and ZooKeeper all off the one machine for our review. While ZooKeeper can at times be a bit laggy in its response to input, the video output was absolutely rock solid and didn't skip a beat. I'd rather a laggy interface (that only I see) than a laggy output (that the audience can see!). I suspect using a second machine for ZooKeeper would avoid much of the problem.

Lay it on the line

The Hippo engine runs in multiple layers, and you can choose anything from a simple two layer mode right up

to eight layers. We ran four since that's what it was setup for when it arrived. Layers can each have different sources – whether it be internal still or motion video, feed from another LAN computer, or external video input. The engine isn't real fussy on video content format – basically if it plays in Windows Media Player it should work on the Hippo. The system is Windows based, and unlike other devices you can actually get into Windows.

Each layer can be faded in and out independently, and there are a number of different overlay options (additive, subtractive, difference, matte, etc etc). I was hoping to find a way to dynamically re-arrange the layer ordering, but there isn't one. Hopefully this will appear in a future software update?

Within each layer, content can be resized, repositioned, re-coloured, keystoned, and manipulated in a number of other ways. Two effect slots are available for each layer, and there are great number of effects which can be applied. Sadly they don't sort in alphabetical order, but that's okay because just like on a lighting console you can save your favourites as presets (think palettes). Figuring out the save process takes a little experimentation, but it does work.

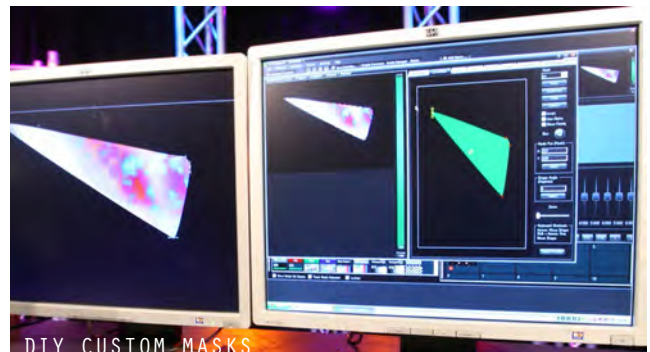
The "master" output has further processing for masking, warping, keystoning, and a range of other adjustments. If you're projecting onto a curved surface you can make up a custom map and adjust it on the actual projection – there are tools to assist with this including gridlines which define the image border. Reality is that there's more stuff going on inside this box than we can hope to cover in one review.



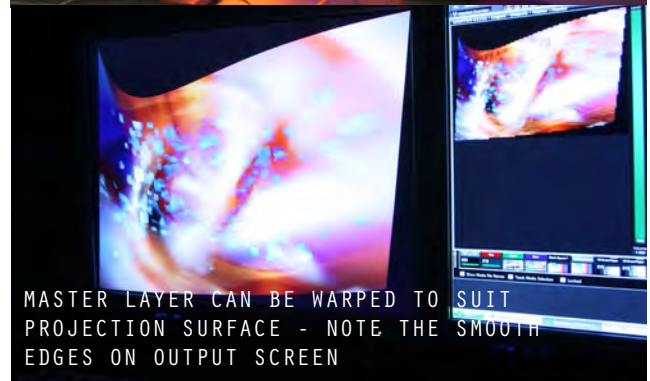
The Grasshopper does both video mapping and pixel mapping. How it does this is quite interesting. The DVI outputs on the unit are pre-designated – one is your content output and the other is the ZooKeeper screen. Essentially what happens is that you define the output resolution of the content port to be whatever you want. So if you have three HD display screens side by side, your resolution would cater to the total number of horizontal pixels across all three (5760x1080). This would give you a super-wide video output, and you then use a device like the Matrox TripleHead2Go to drive all the screens. The Grasshopper then lets you define where each screen sits within the space and this controls how the pixels map onto them. It sounds quite complex, but once it's been explained once it makes sense.

Similarly, the pixel mapping functionality allows you to define the number and type of fixtures you're using, and then position them within your video output area. The Grasshopper outputs ArtNet, and if your fixtures don't cater to this you can just use an ArtNet to DMX converter – just about everyone makes one of these. The setup is actually fairly straightforward, and allows you to define things by their actual dimensions and spacing in the real world which is really cool. The fixture library is limited, but you can build your own definitions. Any of the individual layers or the main output layer can be routed to the pixel mapper, so it's quite easy to have different looks across two types of displays all running from one engine.

If the idea of one engine scares you, clone the show on USB and run a second system in tandem – they can be



DIY CUSTOM MASKS



MASTER LAYER CAN BE WARPED TO SUIT PROJECTION SURFACE - NOTE THE SMOOTH EDGES ON OUTPUT SCREEN

synchronized using timecode. Playbacks (think cuelists) can also be triggered via timecode, as well as DMX input. It's possible to map individual DMX channels to control various parameters of layers in the system, so if you had the time to build your show in advance you could easily trigger the various content changes from within the lighting console. Basically if you can think of a thing you want to do with video, this Grasshopper will probably be capable of doing it. Pricing reflects this. Really the biggest limitation with the system is not a technical one, but how much effort the operator is willing to pony up. All in all it's a very impressive bit of kit.

BRAND: GREEN HIPPO
 MODEL: HIPPOPOTIZER GRASSHOPPER
 RRP: \$18,700 INC GST
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JACK





MDG ATMOSPHERE APS

The finer points of haze

BY JIMMY DEN-ouden

TRUTH BE TOLD, I ASKED FOR THE DEMO MDG ATMOSPHERE NOT KNOWING A REAL LOT ABOUT IT. I JUST FIGURED IT WAS NEW AND IT MUST BE SOMEHOW DIFFERENT TO EVERY OTHER HAZER ON THE MARKET.

How right I was.

The Atmosphere dutifully arrived, accompanied by a phone call saying I should just locally source some CO2 to go with it. What the? Doesn't it just run on haze juice like every other hazer? Apparently not, though it does need some of that too. But not very much.

We have an in-house hazer here at CX - it's a popular model and has served us very well for many years. It chews through haze fluid at

10.5ml / minute at peak output. That's 630mL per hour. The MDG by contrast uses 55mL per hour. Granted the density isn't quite the same as our unit produces, but that's not its purpose in life. The MDG Atmosphere is about subtlety. It doesn't sound like a big thing, but in the same way it requires a very talented band to play quietly on stage, producing really high quality fine haze requires something special. The MDG is just the ticket.



Inside there's a heater block of some kind, which takes about 8 minutes to hit operating temperature. There's a little fan in the front end which runs all the time, but very quietly. What it doesn't have inside is any kind of pump. The haze fluid is pressurized and propelled through the machine using compressed CO2 gas. CO2 is inert, but you definitely wouldn't want to try breathing it.

Operation

Setup is a little more complex than a normal hazer – once you've figured out power you need to connect the CO2 source to the MDG unit. This is achieved via flexible hose with an in-line pressure regulator (just like in a welding setup). The regulator is important, since the pressure you feed into the thing controls how much haze comes out the other end. 10psi gives you a nice controlled output, at 20psi it cranks it out. As with many hazers, there's a procedure for shutting it down too. The only real downfall is the little plastic washer which sits between the regulator and gas tank. It tends to fall out of the fitting, and without it turning on the cylinder valve gets a bit exciting as gas leaks out.

The really defining characteristic of the MDG Atmosphere is the quality of the haze you get out of it. The particle size is specified at 0.5-0.7 microns – most other manufacturers don't actually seem to specify this. They're tiny particles and the CO2 propellant means they linger better in the air. The unit smells a bit odd when you first start it up, but this passes after a couple of minutes. This particular MDG actually followed us around the country on the **CX Roadshow 2013** and had no trouble lending to the atmosphere in our venues (nor surviving the truck journey). One canister of CO2 happily ran the thing across 6 roadshows for 6+ hours each, and had gas left for me to play with it back at HQ. As with any hazer you'll still need smoke detectors isolated according to venue procedure to avoid an



expensive and wasteful call-out from the local fire station. We had this, so no problem.

I was really impressed with how well the MDG Atmosphere worked in a number of different environments. It generates the kind of haze you don't really notice until you shine a beam of light through it. Density is very uniform – really this is a superb product. Getting CO2 is a bit of a hassle and it's not the cheapest hazer around, but for the output quality it's worth it.

BRAND:MDG
 MODEL:ATMOSPHERE
 RRP:\$6558.00 INC GST, OR \$8600.00 INC GST
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UNIVERSAL AUDIO APOLLO UNIVERSALLY SINCERE

BY JIMMY DEN-ouden



APOLLO FROM UNIVERSAL AUDIO IS ONE OF THE MORE COMPLEX DEVICES I'VE EVER PLUGGED INTO A COMPUTER. IT'S AN AUDIO INTERFACE, AND IT'S A MIXER, AND IT'S AN EXTERNAL PLUG-IN DSP BOX ALL NEATLY MELDED INTO A 1RU DEVICE. NORMALLY I RUN AN EXTERNAL DAC AND SEPARATE PLUG-IN DSP BOX (AND NO MIXER) - SO USING THE UA APOLLO WAS SOMETHING DIFFERENT FOR ME.

My computer is a Mac Pro with 8 cores, 20Gb RAM, and more drives than fit into the four internal bays. I can't speak for how the thing runs on a lower spec machine, but presumably if you met the minimum spec you'd have no problems. The device connects via Firewire 800, or optionally Thunderbolt with an extra user-installable card. I used FW800, and just for safety pulled every other device off the bus. In my experience of Mac FireWire ports, they don't seem to handle multiple devices too well when audio is involved - PCs seem less problematic. I'd probably go the Thunderbolt card if given the option. The device handles common sample rates up to 192kHz.

The hardware is well put together in a nice enclosure which is peppered with ventilation holes on top. It didn't get overly warm while I was using it, but then I wasn't running it to breaking point. I'd leave a ventilation gap above and below if installing it in a rack. The front panel is dominated by the central metering display and a pair of large encoders which control input gain and monitoring level. They're encircled by rotary LED ramps, and pushing on the encoders performs either channel select or output mute functions. Six input modifier keys sit adjacent one encoder enabling functions such as +48V, HPE, linking, pad, phase reverse and mic/line selection. Next to the monitor control are two headphone sockets with independent level pots. A toggle switch for power and pair of high impedance inputs complete the front panel.

Round back are sixteen jack sockets for 8 line in and out, plus four XLR mic inputs. There's an additional pair of jacks for monitor output, plus wordclock and S/PDIF in and out. Dual FireWire 800 ports provide computer connectivity,

and interestingly there are dual ADAT Lightpipe inputs and outputs as well. You can't connect MADI, but this is not the kind of interface you'd pick if that was a priority. Power is supplied via 4 pin XLR from the included "Skynet Electronics" 12V 6A power supply. The power supply appears a little cheap but certainly seemed up to the task. Apollo is the kind of device you might use most of, but maybe never all. Fact is it does a lot of things, and somehow manages to juggle these balls without dropping any. Let's talk setup.

Installation of the software is straightforward - drop the disc in the drive, run the installer, reboot, connect the Apollo. It showed up as a valid device in system Sound settings and similarly in my DAW (which is not a mainstream product).

Straight out of the box it works as an audio interface, and a good one at that. I'm used to a pretty serious dedicated DAC for monitoring and perceived the Apollo to be every bit as good. So that bit is easy. Using the device as an input proved similarly simple. The pre-amps are very nice so long as you're conservative with your input gain settings - hit them too hard and you'll notice pretty quickly. Be this as it may, as a straight IO device it works a treat.

UAD-2 powered Plug-ins are another big part of the Apollo, but using them does require you to download an authorization. This bugs me a bit - shouldn't the authorization be in the device already? It's not like you'll take the plug-in license and run it on a calculator? Anyhow, plug-ins duly authorized I set about trying some of them. They're good - in several cases really good. Many of them are modelled on gear I'm not old enough to be intimately familiar with, but I liked what they did. The SSL channel strip was really good as was the EMT140 reverb, which I liked a whole lot. Truth be told I struggle to get excited about plug-ins, but fact is if you're going to use dedicated



THIS IS WHERE THE THUNDERBOLT CARD FITS



JUST A COUPLE OF THE UAD-2 POWERED PLUG-IN CHOICES

hardware to remove CPU load, you may as well use something predictably good.

I did run into a problem when loading too many plug-ins up on my DAW things started to go to gravel, but since I've encountered the exact same fault on other DSP units I'm guessing it wasn't the Apollo at fault. What the Apollo did do was recover a lot better when the "one too many" was removed. You can use the Console software application to apply plug-in processing to input channels either for monitoring only, or you can record with the plug-ins in-line to save DSP later on during mix-down. I tried both processes, they both work like they're meant to.

The Apollo can also have various signals routed and mixed within itself, plug-ins applied then resultant signal output. This process is done also via the Console software, where you can also choose clock source and sample rate and so on. In such a manner you could conceivably use it as channel inserts on a live mix for up to 8 channels (more if you can insert via ADAT). Console setups can be saved as "sessions", and there's a plug-in which allows you to recall sessions from within your DAW.

The Apollo will recall last used channel gain and routing settings after losing power but UAD-2 powered plug-ins are not automatically re-loaded since they're hosted on the computer. If you load up the plug-ins then disconnect the computer however, they will keep running. This is really cool, since it lends the potential to use (in live FOH situations) plug-ins modelled on classic gear that might not stand up well to touring. Doing this on the Apollo I'd feel less like I'm sending my signal chain through a computer, and more like it was just another insert. Or eight.

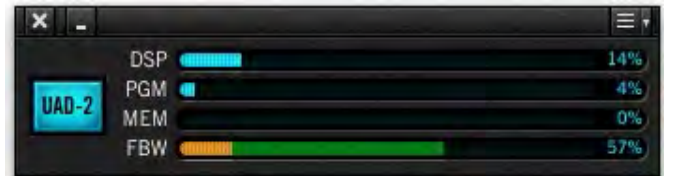


CONSOLE APPLICATION ALLOWS FULL CONTROL OVER THE APOLLO

Really the key here is that the various functions of this device have been designed to integrate with each other, but at the same time they can stand on their own too. At nearly \$3k for the quad model it's certainly not cheap, but nor is it unreasonably priced – especially given there are not many real alternatives. It's a good device.



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 MODEL: APOLLO
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Perhaps the biggest point about the Delta 10F is the IP65 rating. IP65 means it's totally protected against dust ingress, and protected against low pressure water jets from any direction, limited ingress permitted. This is evidenced by the attached fly leads for power and DMX input and loop output - our test unit came with a 240V plug and 5 pin XLR connectors for DMX.

The Delta 10F is externally homogenized, which means you can see the individual colour segments through the front of it. Often this poses problems with colour artifacts, but the Delta seems not to suffer this problem. Output is smooth, and the factory beam is 12 degrees so it throws over long distances very comfortably.

If 12 degrees seems a bit tight you can attach a range of "holographic" filters which come in beamwidths 10/20/30/40/60/80 degrees, as well as 60x10 and 75x45 degree shaped beams. The filters just slide into a set of special mounting clips - no tools required and yet they hold quite securely. 10 DMX channels are required to access the 16 million possible colours, and you can control the unit in RGBW/CMY/HSV modes. It can run white in a number of colour temperatures too.

The really big selling point for me is the IP rating. Of course here at CX we don't just believe everything we read, so we took the Delta out to the loading dock, switched it on and pointed a hose at it. It didn't seem to care, even when the water jet hit the cooling fans. That performance and the huge light output make it a winner in our books.

BRAND: DTS
MODEL: DELTA 10 F RGBW
RRP: \$8298.00 INC GST FOR THE FIXTURE,
THE HOLOGRAPHIC FILTERS ARE ALL PRICED
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PRODUCT INFO: WWW.DTS-LIGHTING.COM
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ROAD SKILLS

BARRY GIBB

SOUNDWAVE GARBAGE

BY CAT STROM

BARRY GIBB PHOTOGRAPHER - Cat Strom
SOUNDWAVE PHOTOGRAPHER - Troy Constable
GARBAGE PHOTOGRAPHER - Ashley Mar



BARRY GIBB

BARRY GIBB'S EMOTIONAL RETURN

Most days Aussie ex-pat Howard Page is busy as a senior director for engineering at Clair Brothers in the US but occasionally he dons his super-engineer cape and jumps into a tour that is in audio peril. Acts such as Paul Simon, James Taylor, Van Halen, and Mariah Carey have all benefited from Howard's magic touch.

"I've been doing this for so long I can walk into any gig and, using all those years of experience, immediately make it work without rehearsals," he states without a hint of hubris. In the past couple of years Howard has forged a close relationship with Sting and has been heavily involved with his projects. Many of the techniques that he mastered with Sting in an Orchestra plus group setting, he is now

deploying with Barry Gibb including having absolute control of both onstage and out front dynamics when mixing a show and the stripping down of songs to highlight the emotion within the story of the song.

"Songs that require you to deliver depth and emotion need to



MONITOR ENGINEER
JOHN MERCHANT

be absolutely stark dynamically to focus on the story," he explained. "The story that is being told in the song needs to be delivered in a way that involves and encompasses the audience in the emotion of the song. You can only deliver that with absolutely pristine balance and dynamics that are perfect."

Whilst audiences often expect their favourite artists to sound exactly like their recorded material, that is hardly ever the case. However, with Barry Gibb it was incredibly so and it was probably one of the best sounding concerts I have ever attended.

"One thing I learnt from travelling around the world repairing tours is that often the live sound is not delivering the artist's material properly," said Howard. "If you are mixing at FOH you have to deliver the audience's expectation of how that type of music should sound. The average age of a Barry Gibb audience is 65 years old so they don't expect the show to be deafeningly loud but to

be crystal clear so you can hear all the words and it sounds exactly like the original Bee Gees records. So the task of mixing FOH for Barry Gibb is already very clearly defined." Howard was using a Digidesign Profile console although his definition of a "real" sound engineer in 2013 is someone who has honed his skill set to the point where he can use any of the current generation of digital and analogue consoles.

"He should also be able to make any state of the art sound system work for him," added Howard. "I am following my own credo here by using a Profile console which I may not necessarily choose, although it is doing me proud and does many things right. Today we're using one of JPJ Audio's premium L'Acoustics K1 systems which I love although, again, you should be able to use any sound system well. My only criteria is that it must be pointed in the right direction, must have sufficient head room to deliver to the appropriate size venue, have all of the audience evenly covered by the way it is rigged and that it is obviously not broken."

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At each new venue Howard asks the audio supplier to ensure that the PA system is delivered at factory default settings. He then sets up a Lake DLP unit, set up as an eight x Mesa EQ, and he will send feeds directly into the various sections of the sound system from that unit.

“Then that sound system becomes my sound system because I am setting the time alignment between the various elements of it, I am doing the tonality balance, and I am doing the final sectional level optimization between the various elements of it,” explained Howard. “By enforcing that technique I have absolute end control of that sound system and can deliver a consistent result on any brand of sound system.”

Howard is a stickler for insuring that everything he does on the mixing console translates to any seat in the venue not just at the FOH position.

He does this by taking the time and the trouble to match tonally and level wise all of the support sections

of the complete system such as the sides system, the front fills and delays systems to match exactly what comes out of the main arrays that are his reference at the FOH position.

Howard describes himself as rather old school when it comes to using effects and so does not use many that the Profile offers.

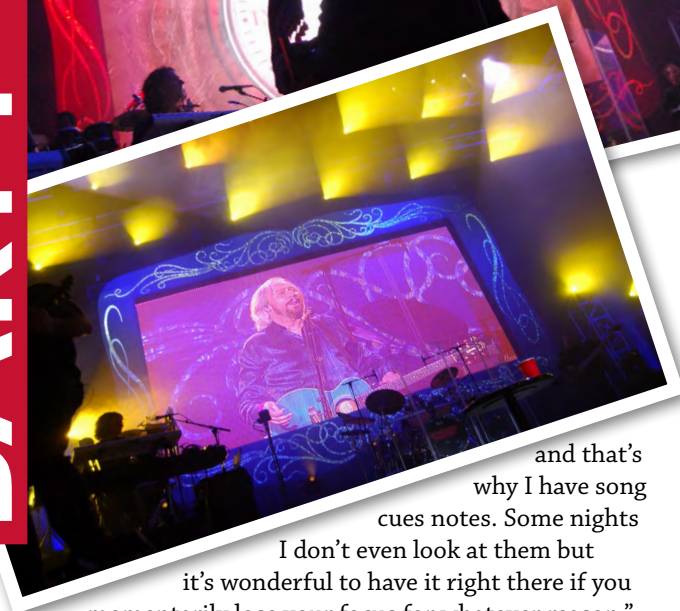
“When I was learning my craft we didn’t have plug ins and fancy limiters, gates and compressors,” he said. “So many guys these days with digital consoles overuse them such that they become a giant distraction to really mixing the music. I’m using a couple of plug in effect units and that’s about it. I’m only using plug ins for delay repeats on vocal lines and I’m using the internal, stock standard Digidesign ReVibe, albeit carefully customized.”

Howard is not a believer in using a digital console’s snapshot ability to recall the console for each song but rather to use a minimum amount of MIDI program change controlled partial snapshots to only set effects send levels, mute effects send levels and to change the delay times on the plug in delay units.

“I mix the show completely and utterly manually,” Howard

stated. “I only have one true master snapshot that recalls the entire console and that way I only have one snapshot to worry about in order to get this console exactly where I want it before the start of each show. The partial recall snapshots are triggered off my Cue Controller program which I wrote to do many useful things. As well as sending out MIDI program change data into the console and serially remote controlling my CD-R recorders to put track IDs and song titles onto my archive discs, it gives me custom set lists and song by song cue notes. People often ask why I have those cue notes and question that I should know the music well enough by now. However I relate it to an airplane pilot who has been flying for thirty years that always still uses check lists. During a show many things can distract you

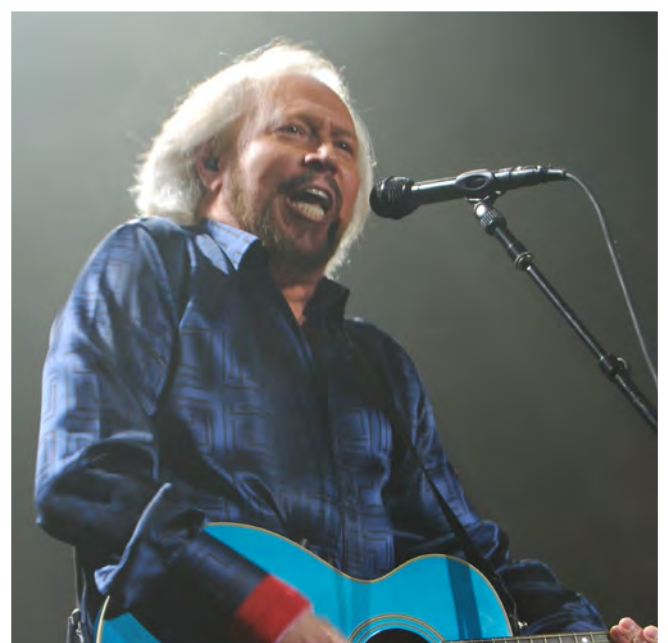
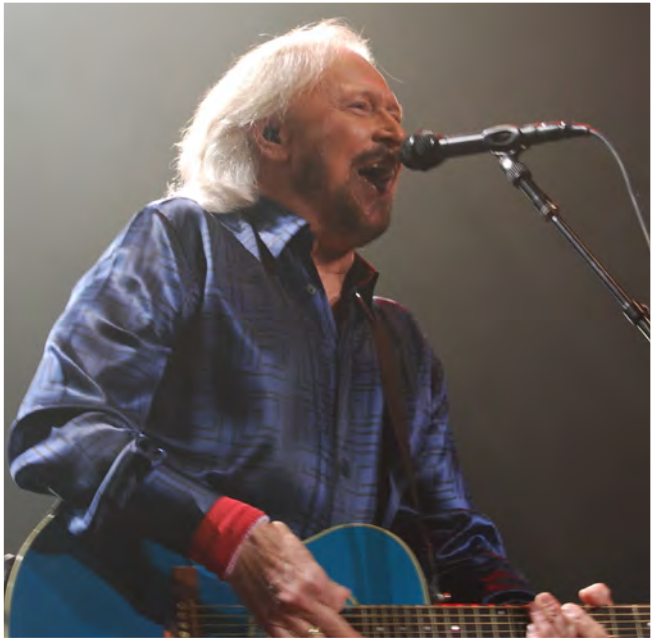
BARRY GIBB



and that’s why I have song cues notes. Some nights I don’t even look at them but it’s wonderful to have it right there if you momentarily lose your focus for whatever reason.”

Howard believes that it is critical to set up your digital console so you can always stay ahead of the show. In fact in this digital era, he cannot stress strongly enough how important it is before a project starts to plan how you are going to lay out a digital console.

“If you have to keep switching between banks and then coming back to another bank to get to a channel to do a mixing move or something, you have not set that console up correctly,” he said. “To run a show live without using snapshots as I recommend, you need to very carefully think about what is going to be assigned to your master show bank – this is the console fader bank that will stay active for about 99.9% of the show. It will have all the texture instruments of the mix, all the things that do solos, all the critical vocals, access to the reverb returns, access to the effects and delays etc. Instruments such as the drums or percussion whose internal mix, once set, remain very static can always be assigned to deeper layers and master controlled using top layer VCA faders. “



Both Howard and his monitor engineer John Merchant, have worked with The Bee Gees and now Barry Gibb solo, since 1989. John, a highly qualified professor who teaches audio production in Nashville, is a studio engineer who has also worked with The Bee Gees for many years as well as artists such as Barbra Streisand, Celine Dion and Michael Bublé.

“The Bee Gees are one of the few acts I actually work live with,” he revealed. “I love working live but the studio work is where my focus is. However these days live sound is much more like the studio especially with in ear monitors which allow you to apply stereo effects and have this big sound stage to control their environment, regardless of the sound of the venue, and provide something that is consistent night after night.”

John is a big fan of the Midas Heritage 3000 console describing it as a wonderfully sounding console that does a lot of the work for you. However on this tour he is also using a Digidesign Profile.

“While I like the functionality of it, sonically I had to put a lot of work into it to get it sounding how we wanted,” explained John. “I realised that what we were missing was distortion. The Midas has a lovely distortion built into it in small amounts in all the pre’s and you add that all together and things just gel. One of the cool things about the digital world is that if you want it, you can have itbut you have to know what you’re looking for.”

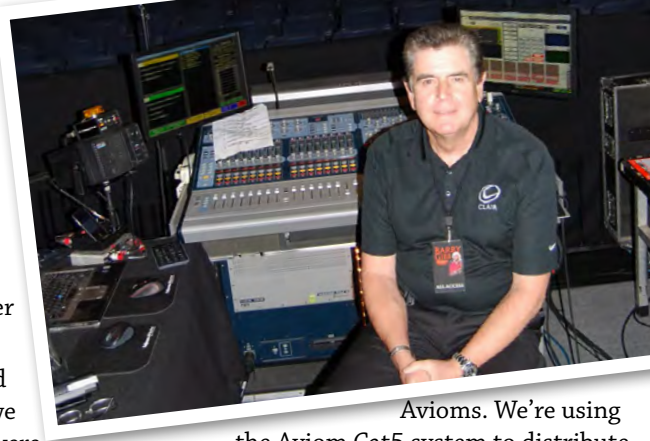
John uses Aphex Aural Exciters on the vocals which fires them up, as well as on the drums to add a bit of extra grit. John added to that better gain staging and proper use of a little bit of effects to get the sound he was after.

“Of course there are a lot of great things that a digital console offers; small footprint, more channels, inbuilt effects, snapshots and I can have my show ready to go on a USB,” added John. “So they are the right tool to use, you just have to be able to make it do what you want it to do.” The entire band uses in ear monitoring resulting in an extremely clean stage and, says John, a huge advantage to the FOH because of the amount of dynamic contrast you can have between songs from an emotional standpoint.

“The audience can hear the tiniest details, the emotional parts of a vocal cord - subtleties that would typically be lost in a large arena,” said John. “All of the reviews so far have talked about how emotional, intimate and close the artist feels to the audience. I would say that’s a huge testament to Howard’s mixing although don’t tell him I said so as it will go straight to his head!”

John favours Shure PSM 1000 personal monitor systems which he describes as sonically very good, incredibly stable and reliable.

“We specified quite a lot of back up and fortunately we’ve only had to swap one pack,” he said. “We use Futuresonic hardwired units for the three backup singers and we have a hardwired backup on the frontline of the stage that can run out to anyone whose wireless may run out. The band are all using Futuresonic ears and the band are all getting mixes on



Avioms. We’re using the Aviom Cat5 system to distribute and they can use it to make their mix the way they want it. As long as their systems are working they are happy as pigs in poop and not at all aware that I am there.”

For vocal John insists on the AKG 535EB microphone which he says ‘sounds like Barry’ and is perfect for him. It does not have the same proximity response of other cardioid microphones so he can move in when he needs to or pull back, without the sound changing too much.

“He can craft the dynamics of the vocal and the vocal sound doesn’t fall apart rather staying consistent,” added John. An advantage of using the Profile was that John could ‘send the console’ via email to JPJ Audio who were able to have the console loaded up and everything patched before he walked on the floor.

“Bob Daniels asked if this really was my set up as there’s so little EQ and I said that’s because it’s not crafted from the EQ rather from the source,” remarked John. “We have fairly conventional mics - Shure 91 on inside of kick, Shure 98’s on the toms and percussion, a Shure 52 on the kick outside, a Shure SM81 for the snare bottom and the high hat, Shure 57 for snare top, a couple of KM84’s and Earthworks for the overheads.

“I also have a couple of shotgun mics that I use for audience mics as one of the things with in ears is that the artist can become disconnected from the audience,” continued John. “The shotgun mics allow Barry to navigate the audience and give the right responses. Part of why he performs is to connect to the crowd so if the technology isolates him it’s going to be disappointing.”

There are unconfirmed rumours that due to the success of the sold out Australian shows, Barry Gibb will take the tour to Europe and the US.

BARRY GIBB

GARBAGE NO PILE OF RUBBISH

It had been many years since Garbage played in Sydney and fans had to wait one extra night after floods and a wayward truck prevented the band from making their scheduled appearance at Soundwave Festival the previous day.

Those who had scored tickets to the sold out, intimate Metro Theatre show were the lucky ones and during the show, the band paused to give Manson an opportunity to apologise to those who had bought tickets to Soundwave just to see them. However, she was adamant that the cancellation was totally out of their control.

Lighting designer Dominic Fanelli favours Martin MAC 700 profiles and washes for his Garbage shows and that is exactly what he got at The Metro courtesy of GRB Lighting, one of many smaller hire companies that do brisk business from the overflow of festival sideshows. Dominic has toured extensively as a technician but Garbage are the first band he has designed for and his roadskills have been put to the test with them.

"We have a lighting design but for most of the time on this tour we have only been able to implement the full show on about 25% of the gigs," commented Dominic. "Usually we are presented with completely different systems and have to use whatever gear is available. You have to be versatile and resourceful, trying to maintain the look and feel that we want with whatever is on hand. Sometimes it's very basic and you go back to your old school lighting knowledge and draw from that."

GARBAGE



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CX NETWORK

GARBAGE



“When we toured through Russia and Eastern Europe we were presented with strange knock-off fixtures from China with no fixture profiles so daily I would have to build them. Often the way they react to DMX is counter what the rest of the industry does. I’ve seen some really bizarre fixtures over the past year but you have to have a show so you have to make them work.”

Garbage’s lighting is best described as dark, moody and theatrical with Dominic criticising many of today’s shows as being sensory overload.

“You need an opportunity to let the music and the emotion of the music come through and just highlight it with the lights,” he said. “The lights shouldn’t be overbearing. I get a lot of feedback from the band although they have given me a lot of latitude. We strive for a cinematic look with lots of haze helping the beams to paint a picture.”

The Metro gig had a fair amount of the MAC700’s Dominic would usually use and about half the conventionals. For control Dominic used a WholeHog Full Boar.

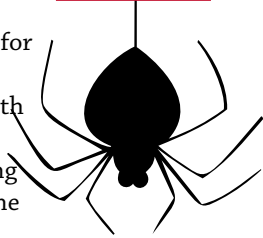
FOH engineer Brad Divens learnt his trade with bands such as Jane’s Addiction, Bob Seger, Mötley Crüe and Linkin Park and really his favourite PA system is just one that is set up properly.

“There are a lot of good line arrays and the Nexo Alpha here at the Metro is fine,” he said. “On Soundwave we have either

Adamson or V-Dosc which are also good. However for FOH control I always prefer the Avid Venue Profile console and I always carry my show and plugins with me. The only thing I have external is a Dolby Lake Processor for system EQ and processing. Everything else is in the console: Waves Bundles, Phoenix Crane Song, SoundToys and some DSP plugins.”

Brad explains that mixing for Garbage includes a lot of different sounds, up to four different guitar sounds in one song, and its effects heavy with a lot of imaging and panning.

“There are many little things that I have to make sure everyone can hear as it’s really important to the music,” he added. “I have to make sure there’s a space for everything, that you can hear everything and Shirley sits right there on top. It can get rather chaotic at times and midst all that chaos, you still have to have the clarity of everything.” Another Avid Venue Profile console looks after monitors with all band members on ears and they carry their own microphone packages of Audio Technica AT4050’s, Earthworks DP30C for the snare, Shure SM91 for the kick drum and an Earthworks WL40V for Shirley’s vocal.



20 QUESTIONS WITH NICK MARSON, PRODUCTION MANAGER, SOUNDWAVE FESTIVAL.

Nick Marson says he has been on tour for way too long - originally as a sound engineer in the 80's and 90's then as a tour manager / production manager mostly with Australian acts both here and overseas. He has also worked on world tours with the likes of Rammstein and Queens Of the Stoneage. Nick has been working on Big Day Out for nearly 20 years and has been the production manager for Soundwave for 5 years and the Harvest festivals for 2 years. As well as this he has worked as a promoter rep for most of the major promoters looking after production and tour management for a lot of the bigger tours that come through varying from Pavarotti to Mötley Crue.



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1. What are the three best things about your job?

Seeing the results of the months of pre production come together when the audience comes in and the show starts. The people I work with.

The satisfaction at the end of the tour that comes from knowing that with the help of a great team we were able to pull it all off.

2. And the three worst things?

Working with idiots (not my team).
Shit catering
Bad weather

3. What do you never leave home without when working?

A spare pair of under pants.

4. What do you do when not working on Soundwave?

Tour and production management for arena tours and festivals.
Relax and travel.

5. What was the worst nightmare you've encountered with the Soundwave?

Having a couple of trucks running 10 hours late.

6. What has been the strangest request from an artist?

There's way too many to mention.

7. Who was hell to work with (probably best not to actually mention name but elude to it)?

The worst ones to work with are the ones who have a bad attitude and think the whole festival revolves around them.

8. What is the most stupid request you've had from a member of the public, artist or promoter?

Our audio director requesting we put shower curtains up in the FOH tower.

9. In your opinion, who performed the best set ever at a Soundwave and why?

Metallica has been the biggest and slickest production we have had. Iron maiden and Slipknot also put on great shows.

10. What is the most bizarre sight you have ever seen at a Soundwave?

A guy in a wheel chair crowd surfing

11. Who has delivered the best audio mix at a Soundwave?

Probably Big Mick with Metallica

12. Who has delivered the best lighting at a Soundwave?

The best so far was probably Robert Coleman with Iron Maiden.

13. Which Soundwave venue is your favourite and why?

They all have their different challenges but what makes the difference is great site management and site crew. So I am going to say Brisbane and Adelaide are my favourites.

14. Which recent piece of production gear do you view as a game-changer?

Although they are not a recent invention...Velcro and cable ties.

15. What is the most outrageous thing you have ever done on tour?

I'm not telling you.

16. What was the worst weather event at a Soundwave?

Last year in Brisbane it started raining on Thursday and didn't stop until Sunday.

17. What invention would make your job easier?

Cloning

18. Who would play on your ideal Soundwave set list?

The Rolling Stones

19. Do you have a favourite mantra to get you through the day?

Its all about the end result and if we all work together we will win the war.

20. What did you really want to be when you grew up?

An international drug smuggler with my own submarine.

SOUNDWAVE





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FROM LEFT - BRAD MAIDEN (SOH), ANDREAS MONKHE (RIEDEL), JULIUS, PETER PAGAC (RIEDEL), JULIAN HEWITT (SOH)



IAN ANDERSON AND MARC SEGAR (GLOBAL TV)



MICHAEL HASSETT (TDC), JASON OWEN (RIEDEL), KEITH COOPER (THE AUDIO COLLECTIVE)



STEWART WOODHILL (ALCHEMEDIA), JOERG HEISE (RIEDEL), NIC BOLING (SOH), CAMERON O'NEILL (RIEDEL)





JULIUS, FRANK MADZIN
(MAZDIN PRODUCTIONS)



THOMAS RIEDEL



IAN ANDERSON (GLOBAL), JASON OWEN,
JOSE ZAMORANO, ANKE KRAMPE (RIEDEL)



T8

THE MILL REPORT

WHEN LARGE STUDIOS BECOME ECONOMICALLY VIABLE

"SING SING SOUTH'S MAIN RECORDING ROOM HAS RECORDED COUNTLESS AUSTRALIAN HITS, FROM KYLIE, PAUL KELLY, CROWDED HOUSE AND HUNTERS & COLLECTORS...

'80S DRUMS ANYONE?'"

BY ANDY STEWART

A few things are being changed down here at The Mill right now. My ProTools is about to be upgraded... to 11 I suspect (this new version is not out yet but rumours abound... it may be announced before this issue of CX goes to press). My Auratones are being replaced by Grover Notting CR-2s (made in Melbourne), my NS-10 amp is getting the flick and swapped for a QSC of some description, and my Neve console is enjoying a full service by Rob Squire (tech extraordinaire) in preparation for four albums that are about to roll through here. In the last month I've kicked off a couple of mix projects as well as several albums, some of which I'm recording here, others I'll be tracking at Sing Sing South in Melbourne. It's a busy time, which I hope everyone is now enjoying in studios around the country.

MARGIN CALL

This issue I'd like to make one simple point: that large studios are not the dinosaurs they're so often purported to be, nor do they all rip you off the moment you step

through the door. Some of the remaining Australian studios represent great value for money if the bands you're recording are well prepared for the sessions.

A popular myth seems to have developed over recent years – that big studios are a rip-off and you're better off recording in a small space and spending long hours overdubbing and mixing.

Hmm, well, that depends. If you can't play very well, or if you spend days and weeks crafting your takes, sure – large studios will certainly prove expensive then. But if you're well rehearsed...

LAY IT DOWN

For the band I was doing pre-production with last week there was an interesting choice to make in this regard, and the answer was by no means clear-cut at first. As the producer of the project it was up to me (to some degree) to decide where the band should record. With limited funds at their disposal the band were keen to record the whole project down here at The Mill, thinking it would be cheaper and better for all concerned in the final wash-up.

However, after a couple of discussions it became clear to me that the better outcome <<for this five-piece outfit>>, both sonically and financially (rather than merely for my hip pocket), would be to record the vast bulk of the album in a big studio. Sure The Mill is big, but in terms of tracking a large band it's not.

The band are well rehearsed and prefer to track everything at once, which is great for the music if they can pull it off. Coincidentally, that's also when a large studio becomes the most economically viable.

DO THE MATH

With good separation, quiet rooms, lots of space, countless sets of headphones, mics and preamps, and a friendly



assistant at our disposal, a studio like Sing Sing actually works out cheaper in the long run, given how much can be achieved in the time allotted.

Once I had a clearer picture of how the band likes to record, the size of the ensemble (five piece will occasionally blow out to seven piece), and the type of sound they wanted, the decision almost made itself. Opting for Sing Sing will reduce the bottom line, and simultaneously improve the sonic outcome. How?

Simple. By spending far less time mixing a brilliantly tracked album (all humility aside) than a compromised one, the mixing costs will be reduced. Sing Sing has bigger spaces too, and this album fundamentally demands some large room ambience, which we can capture during recording. Best of all, everyone will have a great time and that's bound to be reflected in the performances... crucial.

The band looked shocked and excited at the prospect of going to a commercial studio in downtown South Yarra... a good sign.

CHEAP TRICK

It begs the question: how many producers turn a blind eye to these emotional and economic realities when they arise, putting their own profit margin ahead of what's best for the band? I'd wager lots of them. In their defence, most producers know how to scrimp and save. Many of them (along with their families) even tolerate the invasion of their personal space on a regular basis just to get an album tracked on budget. Problem is, this sacrifice isn't always necessary.

There's no one-size-fits-all solution to the perfect album production, that's for sure. Each has its own limitations, needs and aims that require a specific set of plans to achieve the best outcome. (Shit, I sound like a housing loan consultant!)

But seriously, if you're a great band; if you nail take after take in the rehearsal room and feel confident about playing together... indeed you thrive on it, don't shoehorn yourself into someone's bedroom and splinter the tracking into an enormous pile of overdubs in an attempt to save 400 bucks. Chances are you'll wind up spending two or three times that in mixdown ironing out all the problems you created during the recording process. Make the most of your strengths as a band, hire a good studio and go for it. You'll have a better time, spend less money and produce a far superior record. Of course, if you're not a great band, or indeed you're not in a band at all, you might be better off recording elsewhere and spending the money mixing the album with a professional who knows the space they're working in. But if you're a great live band, what are you doing tracking in someone's bedroom?

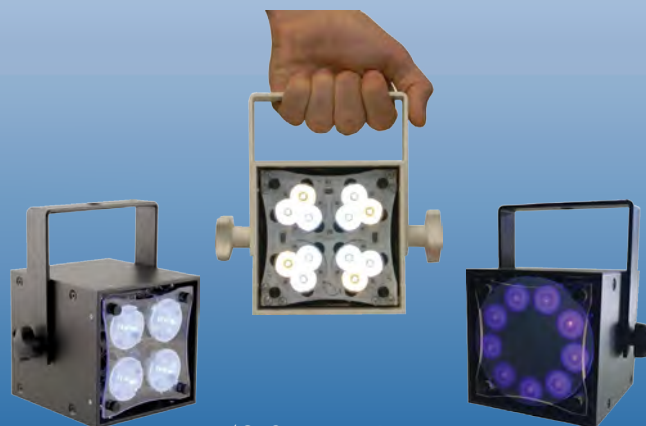
Andy Stewart runs The Mill in Victoria. He's always happy to answer questions about recording, mixing or mastering. Contact him here: andy@themill.net.au

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Fatigue, what about it?

Fatigue, how well do you understand how it impacts on you, your colleagues and your work?

There has been a lot of research about this subject and it is about time our industry took notice.

Fatigue affects us all, whether we suffer from it ourselves or dealing with someone else's. Chronic fatigue is caused by an accumulation of working long hours and not giving your body time to recover by giving it enough sleep. Fatigue affects your concentration and ability to assess situations around you. The chances of injuring yourself or someone else skyrocket. Many of the big disasters last century (Exxon Valdez, Space Shuttle Challenger and Chernobyl) have all been linked to the effects of fatigue. Fatigue leads to poor judgement, poor performance on skilled tasks and slower reaction times. Fatigue stops you appreciating how serious a situation has become. It is harder to undertake complex tasks when fatigued. Poor decision-making as a result of fatigue leads to accidents. Research has shown that the risk of work-related injuries and illnesses is increased in people working more than 60 hours a week, or working 12 hours or more in a day. Compared with an eight hour shift, accident rates are doubled after 12 hours at work. A 17 per cent increase in accident rates occur after the fourth day shift. There are also 30 per cent more incidents on the fourth night shift compared with the first, unless other measures such as frequent rest breaks, are put in place.

Our industry is on a collision course. On one hand, over the years all the penalty rates that discouraged employers to let you work ridiculous hours have all but disappeared. At the same time the requirements for even the smallest production keep increasing, needing more and more time for less and less money. Casuals will work any amount of hours because the work that is here now may not be there tomorrow. Less and less people work for companies full-time, many in our industry work under contracts that rarely will have a clause for long hours. That also limits the amount of control the employer has over the working hours of people on-site, they don't

Fatigue compared with blood alcohol content

- Being awake for 17 hours impairs performance to the same level as having a 0.05 blood alcohol content.
- Being awake for 20 hours impairs performance to the same level as having a 0.1 blood alcohol content.

know if you just finished a 18 hour day with 2 hours rest before you start with them. We as the workers of this industry have to start taking fatigue seriously.

The psychomotor impairment (a slowing-down of thought and a reduction of physical movements) associated with fatigue is similar to that induced by the consumption of alcohol at or above usual legal limits. After being awake for just 16 hours, psychomotor performance deteriorates to levels equivalent to between 0.05 and 0.1 blood alcohol concentration (Dawson and Reid, 1997; Williamson and Feyer 2000). The limit in Australia is 0.05. The fatality and seriousness of fatigue-related crashes are similar to alcohol-related crashes yet the social stigma of driving while under the influence of alcohol compared to tiredness are barely comparable (Pack et al., 1995; Martin 2002). The effects get worse at night time. The worst period in the circadian rhythm is between midnight and 6AM. That's right, exactly when you would be in the middle of a bump-out. Now how long has that fork lift driver been working again?

What you must do

It is a requirement of the Work Health and Safety Act 2011 that hazards be identified and risks be eliminated or minimised so far as reasonably practicable. Fatigue is a clearly identified risk that can be easily proven if you have an accident after 18 hours on the job. And don't forget that very important part of the WHS Act, your responsibility as a worker. If you are

Section 28: Duties Of Workers
 While at work, a worker must:

- (a) take reasonable care for his or her own health and safety.
- (b) take reasonable care that his or her acts or omissions do not adversely affect the health and safety of other persons.

fatigued, you breach both those requirements. It is time that people start taking their own safety seriously and not rely on "he made me do it". If you are involved in an accident and the Regulator, and maybe more importantly your health fund, can prove that you were severely fatigued by working excessive hours, you may be fined for breaching Section 28. It can also mean that your health fund will try to recoup any medical expenses as a result of that accident. And if you are a casual or sole-trader, just stop for a second and think about the risks you are taking when doing a job after only 3 hours sleep. Sure, we all need work when we can get it but that is not going to help if you break your leg because you were so tired you missed the step.

And if you are a production manager, supervisor or otherwise in control of the people working for you, make sure your crews are well rested before they start work. Just think about the time it would take to clean up the mess, and maybe wait for the inspector, if someone has an accident because they were too tired.

How can we fix it?

That is the big problem, there is in our opinion not a single 'fix it all' solution. If there is a code of practice that describes how to prevent or minimise a risk at your workplace you must do what the code says or adopt and follow another way that gives the same or a greater level of protection

against the risk. At the moment there is only a draft Code of Practice on the Safework website:

Go to, <http://www.safeworkaustralia.gov.au> (and search) **Preventing-and-Managing-Fatigue-in-the-Workplace.pdf** (probably easier to Google “code of practice fatigue”). Although it isn’t law at the moment, we encourage everyone to get a copy and read it. And get your production manager, supervisor, producer, promoter, etc. to read it because it contains a lot of guidance that a prosecutor may refer to in a court of law. Remember, ignorance is no excuse.

It is a real pity that an excellent research paper from the Workplace Research Centre at the University of Sydney is hardly referenced. It is available from the WorkCover website : http://www.workcover.nsw.gov.au/formspublications/publications/Documents/excessive_hours_theatre_film_televison_report_2795.pdf The research was requested by Media, Entertainment and Arts Alliance and funded by WorkCover in 2010. It contains a lot of information and can be very helpful for developing a system to deal with fatigue.

The most important thing is to start talking about it. Recognising the problem is the first step in fixing it. People should start taking their rest breaks more seriously. The old 10 hour rule was there for a good reason, currently there is even talk about 12 hour rest breaks between shifts. It is time that we as an industry accept the problem and the devastating effects it can have. It can be fixed if we are sensible about it, work together in finding solutions that suit the situation. And that includes looking at ways to get home safely after a 20 hour day.

Fatigue-risk calculator

A fatigue-risk calculator can be used to assess work schedules and rosters. It is a spreadsheet that can help identify where the most serious fatigue risks are likely to be. A fatigue-risk calculator weighs up a range of data (e.g. number of hours worked, task undertaken, time of day worked) to gauge the risk of actual and proposed work schedules. Fatigue-risk calculators are most effective when used with other methods for managing the risks of fatigue. A free fatigue and risk calculator spreadsheet is available on the UK Health and Safety Executive website:

<http://www.hse.gov.uk/research/rrhtm/rr446.htm>

Hint: Also download the guidance document and RTFM.

References:

Ann Williamson, Anne-Marie Feyer, Rena Friswell and Samantha Finlay-Brown (2000) Development of Measures of Fatigue: Using an Alcohol Comparison to Validate the Effects of Fatigue on Performance - Demonstration project for fatigue management programs in the road transport industry, Brigid van Wanrooy, Sarah Wise, Stephen Jackson (2007) Developing a standard for excessive hours in theatre, film and television.

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BIZ TALK

UNLIMITED FINANCE

By Julius Grafton



Last month I mentioned my forthcoming ENTECH SEMINAR headed BOOM TO BUST - SUCCESS IN AV.

That drew this comment from an esteemed senior in the business: "Following the demise of VideoPlus (and its reincarnations), the level of debt over Staging Connections and all the other hire company failures of recent, it's becoming harder to find leasing finance from the usual major banks and institutions who don't want to finance as the sector is now flagged on their industry reports."

It wasn't always this way.

I had two decades in Production Company land. The first was when banks were regulated in the 1970's. Sydney's top radio station 2SM had a subsidiary called Digamae that at one stage rented a disco concept to pub chains.

Unlike the brilliant and sometimes quirky specialty pub scene we enjoy now, and I enjoy in particular in my new harborside suburb of Balmain, pubs then were very generic. Digamae plugged into the Saturday Night Fever fad and installed a DJ booth, sound and lights (mine) into any pub prepared to pay a weekly fee. They scheduled the DJ and did radio promotion on 2SM. It worked great for a couple of years.

I had to expand each time they added a pub – so I took myself to the bank to see the manager and several times had the overdraft extended to buy gear. It was an old fashioned setup – that manager saw something in me, and had discretion to operate under a limit high enough to help me.

Next decade the stakes were a lot higher. At Graftons we needed to buy expensive touring equipment and trucks. The 1980 recession was underway when we started and it took several years to get a bank manager on the right page. Those were tough years where growth was capped by lack of capital. We relied on suppliers like Rank and Jands to give us extended terms. Paying 90 days late was normal.

From 1983 until 1988 the banks could not lend fast enough. We grew like crazy, fuelled by expensive lease finance, an overdraft, and commercial bills (loans that were rolled over every 3, 6 or 12 months).

Soon I found myself in debt to the ANZ Bank well north of a million dollars, of which 200 grand was for the mansion on the Northside and the swimming pool we had chiselled out of rock. Staff dinners were five star. We knew no boundaries. Installation work boomed as hucksters everywhere surfed the nightclub wave. A lot of work was done for bags of ca\$h.

The party just kept on going. New car for the missus? Call a dealership, choose a car, and give them the number of the broker. New PA system for rental? Have the suppliers invoice the lease company retrospectively after supply. Why? Because we knew we could add the gear into a new lease later on! Guaranteed finance. Minimum paperwork!

How about floor plan finance for the showroom? Borg Warner sent a motor trade rep over, and before you could say Soundraft we had ten (TEN!) mixing consoles on the floor, all subject to settlement on sale. The importer (Klarion) got paid upfront by Borg (less 2%), and we paid a 15% premium on sale – provided they sold within 3 months.

The rep would come around each month.

We got stretched in hire and "borrowed" two, which then needed to be retrieved and cleaned up so the rep could see they were still 'on the floor'.

After a while, the sales slowed and we had 4 consoles at the dead date. Mr Borg rolled the deal over - for another 8% per month.

Lucky for Julius I smelled the end and executed an exit strategy that involved my partners – Hymie Meyerson and Lionel Krupp – reluctantly assuming the massive debt stack. I took the mansion (less mortgage) and the earlier proceeds of the sale of Graftons Lighting and got the family out of town before the world collapsed at the end of the 1980's into 'The Recession Australia Had To Have'.

Be thankful we don't work that way any more!

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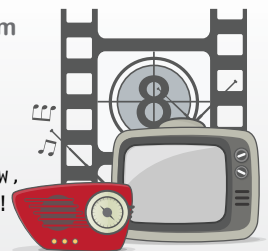
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Industry guidelines - a matter of transparency, integrity and trust

All businesses that operate within an industry sector are subject to a raft of rules and regulations. Some of these are specific to the sector. Aviation, higher education and medicine are three of the more highly regulated sectors but all of us individually or collectively are subject to sets of rules that guide how we conduct ourselves in business, on the roads and in the community in general.

Many of these rules are externally applied mostly by governments or government agencies. Other industry rules, codes of conduct or industry guidelines are developed by industry for a variety of reasons but usually including one or more of the following:

- **Integrity of the sector** – for example protecting safety standards in the airline industry, or protecting the quality of education standards and the value of qualifications offered by organisations in the higher education sector
- **Public safety** – such as occupational health and safety, the safety of workers or EMR standards for public use
- **Making the best use of resources** – the mining tax is an example of a government regulating who and how the benefit of our limited resources are managed. Radio spectrum regulation is another example that is a little more pertinent to our sector.
- **Revenue generation** - all our tax regulations, for example, are really designed to ensure that government revenues are identified and can be collected. Further regulation is also a means of producing additional government revenue. In other sectors such as the medical and legal sectors malpractice insurance represents a significant cost and therefore requires income to fund that cost.
- **Stability** – often regulations are imposed to smooth the vagaries of markets, to protect from monopolies or market failures, to serve the public good and so on
- **Enable, support, encourage** – not all regulations impose limitations, some provide frameworks through which activities can be developed. We have seen this recently in actions by government with respect to solar energy rebates that encourage a new industry to develop or with TV broadcasters where the government has acted to reduce licence fees in return for an increase in local production and broadcast content.

This is not a definitive list by any means but what we know is that regulations have been imposed formally by legislative process (by government) since at least Egyptian and Roman times. In Australia, the Constitution when introduced in 1900 formalised many of the regulations we know today such as the ability of the Commonwealth to levy duties and excise (Section 90) and forbidding of States to raise their own military (Section 114). Such regulations are often seen as limitations or prohibitions, like a parent telling a child you can't do this or that. There are, however, examples where these regulations do the reverse and enable opportunities. One example might be freedom of religion (Section 116) and another less well known is the freedom to trade across state borders (Section 92). In these instances



the regulation enshrines a right rather than limits. Like other sectors the entertainment technology sector and the industries it interacts with are subject to regulation. A very short list of these regulations might include:

- Occupation health and safety.
- Business laws including taxation, registration, directorships and employment conditions.
- C-Tick, EMR and LIPD class licences are some more specific examples that apply to our sector or parts of it.

Governments are not the only groups to apply regulations. Industry groups and member organisations will have their own rules and regulations and in general these industry based prohibitions or enablers are constructed to benefit the working of the sector in the context in which they operate. They vary considerably from formal rules to codes of practice or to industry guidelines. Two well-known examples are the Australian Bar Association (ABA) and the Australian Medical Association (AMA). Both these organisations and the sectors they represent are rightly concerned about integrity and therefore apply a set of professional standards onto their members. And why wouldn't they given the responsibilities their members have with respect to unbiased conduct in executing the law or the provision of good quality medical practice.

What has this all do with the entertainment technologies sector you ask?

Well, it is simple. Like other industry groups from the ABA to the AMA down, ACETA needs to assist its members and the industry more broadly in the execution of transparent, honest and sustainable industry wide practices. As part of its remit as a peak industry body ACETA is developing a set of what will be known as Industry Guidelines. ACETA is preparing its guidelines for many of the reasons noted above, in particular for the reasons of sector integrity and stability, as well as the future enabling and support of new industry initiatives.

At the outset the purpose of the guidelines is to provide, '(ACETA) Members with a platform of professional standards, ethics and conduct, and to codify the standards' and therefore any organisation or individual dealing with an ACETA member company can expect that an ACETA member will, 'follow the spirit and practice of The Guidelines in their mutual dealings.'

The Industry Guidelines will require ACETA members to comply with:

- The Australian Competition and Consumer Act 2010
- The State and Federal fair trading acts and regulations, and consumer protection laws
- Australian consumer law in the area of consumer affairs legislation and warranty agreements
- Product safety and integrity requirements such as those issued by the ACMA through the Telecommunications Act 1997 and the Telecommunications Labeling Notice 2001
- The Privacy Act 1988 concerning the information held by the organisation on individuals

- Safe Work Australia Act 2008 or any subsequent revision of this Act regarding occupational health and safety.
- Australian Human Rights Commission Act 1986 and Australian Human Rights Commission Regulations 1989 with respect to bullying, intimidation and a safe workplace.

These are, in fact, the rules under which all business operate in Australia but the explicit statement by members adds to the credibility of the sector.

The Industry Guidelines will extend a little further to ensure that they provide stability, transparency and integrity within the sector through application of the following principles:

- Transparency in tender processes is maintained
- Products sold by the members are supplied with the appropriate warrantee agreements
- Members maintain the appropriate documentation in relation to product, information, workspace, safety and other relevant standards
- All statements in advertising or publicity material are not misleading or deceptive
- Published performance figures for products sold by the members will be in accordance with accepted industry engineering standards and be clearly identified as such.
- Supply of branded product to the Australian market is sourced from the brand owners along with the intellectual and copyright aspects that accompany the brand
- There is no marketing or promoting of counterfeit products
- Confidentiality and privacy principles covering resellers,

end users and suppliers intellectual property and information are maintained and upheld

- Where acting overseas, members agree to discharge their legal obligations within the countries in which they operate and where possible using a similar set of guidelines as to those developed by ACETA for activities within Australia

What do we want to achieve?

The industry-wide adoption of the guidelines will help ensure the integrity and stability of our industry sector. They will provide us with the level of credibility required to work more closely with government, with respect to both regulation and the enabling of new industry opportunities. The customers of ACETA member companies will have more certainty and assurance in their dealings. Levels of transparency and trust will increase throughout the sector. Finally, the guidelines will also assist ACETA members who work and supply government and government departments and instrumentalities both here in Australia and overseas, through a recognition of standards, improved transparency and trust.

The draft industry guidelines will soon be circulated to members for ratification at the ACETA Annual General Meeting to be held in May. Members are encouraged to read and respond to them. Once they are approved at the AGM, members can use the ACETA logo as a badge of probity because they are adhering to the industry guidelines. From early discussions with major buyers, there is an interest in then making this a key element in tendering.

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FOR ACCORDINGLY! **BUT WHAT HAPPENS WHEN YOU'RE MIXING, AND YOU'RE THE PARENT?**

LAST WEEK I HAD A PHONE CALL FROM DAUGHTER AND DRUMMER FIFI TRIXIBELLE BRITNEY LOURDES, TELLING ME SHE HAD THE FIRST GIG WITH HER BAND, AND COULD I HELP THEM OUT?

Ah, her first gig...cue swirling harp music and soft-focus slo-motion reminiscences of my own first gig all those years ago, playing drums just like my daughter. My first and last gig playing drums, as I soon realised there was lots more attention given to guitarists! It was at a church hall in suburban Melbourne, now pulled down and replaced by retirement housing for the youngsters who attended the gig!

"Where are you playing?" I asked. "It's a club in the city," she replied. Aagh, not the city, I groaned inwardly. It's hard to think of a worse place for loading in and out, and to get a parking spot on the street. You've got far more chance of finding a parking spot in midtown New York. But it got worse.



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"Whereabouts is the club?"

"It's in Swanston Street." Nooo – say it isn't so. With the possible exception of Federation Square, Swanston Street is the worst of the worse places.

For those of you not in Melbourne, Swanston Street is the main street running North-South through the city centre. Or rather, 'used to be' the main street. But in order to totally remove any risk that someone might drive into the city for some shopping, over the last ten years or more, a succession of short-sighted city councillors have turned it into a pedestrian Mall. Thus sending all the shoppers to the suburban shopping centres, to which you can easily drive and park free! The downside of no vehicle access at all means nowhere to load in and out.

"Oh well, I guess I can catch the train in," I said, hopefully. "Well, I need some things if you can get them. We need a guitar amp...and a bass amp...a chorus pedal...an overdrive pedal...a delay...some leads..."

"Hang on – sounds like the backline rider for a Guns 'n' Roses comeback tour!"

"Huh? Who?" Hmmm. Wrong demographic I know, but it was the first old band name I could think of.

"What about getting your drums there?" I asked.

"That's OK, I'm using the other band's drums."

"Can't you use their amps and stuff, then?"

"No, they don't have any and want to use ours. But we don't have any, so that's where you come in!"

Sigh. My dream of a leisurely train ride in and an easy walk-in mix disappeared down the phone line.

"Alright then, I'll see what I can organise. When is the gig, then?"

"Thursday night."

I shot up straight in my chair. "What this Thursday – the day after tomorrow?"

"Yes, that's right. Gotta go. Thanks Dad." And with a click she was gone.

Since I wouldn't be catching the train into the city, I'd thought I'd better work out how to get the stuff to the club. Hopefully a way that didn't include a long walk from the nearest horrendously expensive car park carrying everything!

When the going gets tough, the tough get Googling. And luckily the Google map showed that there was a laneway down the back which ran parallel to Swanston Street, and with any luck I'd be able to drive down it and load in from there. A quick call to the club confirmed this, along with the helpful advice to 'just bang on the back door and someone will let you in'.

With a starting time of 10 o'clock, I hit the city at 8 o'clock with the good old '89 Turbo Capri loaded to the roof with the required equipment. Actually the roof was down so I could get it all in, so it was just waving in the breeze. Unfortunately for me, when I arrived at the lane entrance a waste truck busy pumping out the grease traps from the restaurants was blocking it. I'll try the other end and come in from the opposite direction, I thought. So I reversed back into the street, and went on a leisurely circuit around the city so I could get to the one-way cross street to enter the lane. Sadly that end was blocked by an industrial dumpster

truck emptying the big bins down the lane. By now it had gone half past eight and I was well behind my schedule. Hoping that the fat pumping truck had finished by now, I went around the city again and luckily it had been larded up to the limit, gone off to dump it at Homer Simpson's* house and the lane entrance was clear.

If the lane was more than a couple of metres wide I'll bare my bum in Bourke Street (although not till the restraining order has been lifted!). I slowly picked my way down to where I thought the back door might be. It was quite hard to find – no numbers at all, although the graffiti sprayed all around it was a bit of a clue. There was graffiti everywhere down the lane, but it was a little more music related around the back door of the club.

I hopped out of the car and banged on the door. No-one disturbed the steady thump of doof-doo music and the heady aroma of rotting garbage and urine. Rather than go round the front and tell them (a long walk) I used my new smartphone to look up their number online and call them. Hi-tech stuff! A few seconds later a smiling barman opened the door and let me in.

From then on everything happened in a rush. Fifi etc etc's band arrived, the other band arrived, and while they carried my stuff in I went and parked in the nearest multi-level car park for the bargain price of ten dollars all night! Things were looking up.

Both bands were minimalist and similar lineups, ie. two person trios – guitar and drums. Girls in one; guys in the other.

With the help of Sean the resident sound man, we had everything set up with a minimum of fuss. There was only one small problem. The guitarist and occasional singer in Fifi's band wanted to run her vocal mic through a Big Muff for some distortion. This is becoming a more common thing than you'd expect, but to do it you need a couple of male and female XLR-to-guitar-jack adapter leads which she didn't have and neither did I. But I'm going to make a pair up just for such an occurrence. So it was thumbs down to that idea, and there were no vocals that night. It was all-instrumental – shoegaze music, where the audience spends the night gazing at their shoes!

Every tune was met with rapturous applause from an audience consisting of all their friends who were nicely pickled by the time the band came on. After their final song the crowd went wild, and Fifi jumped up from behind the drums and threw her sticks into the audience! Ah, a chip off the old block. Reminded me of setting my guitar on fire at The Catcher. That's my girl!

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