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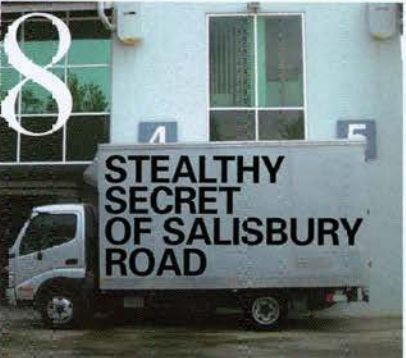
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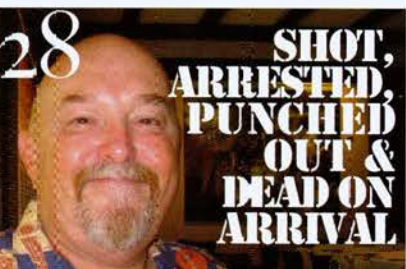


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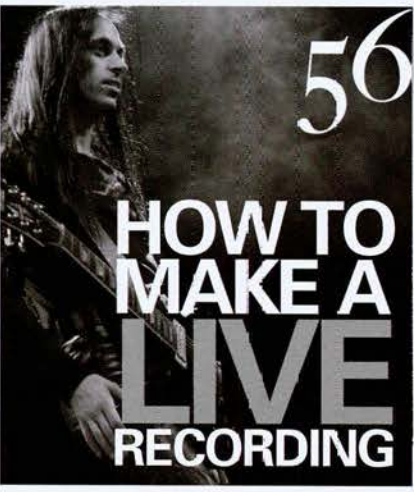
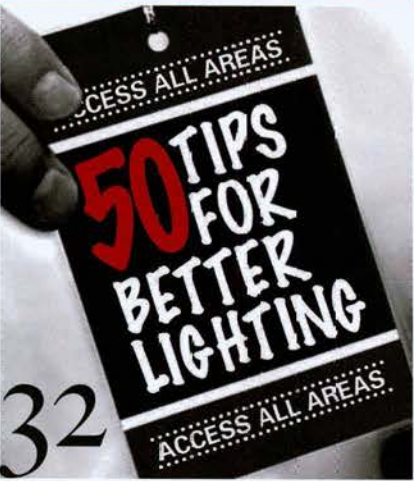


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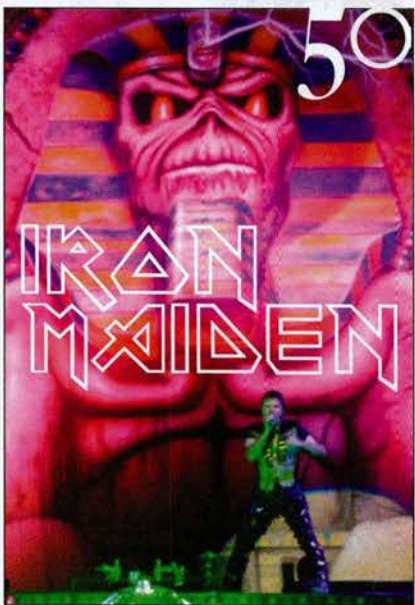
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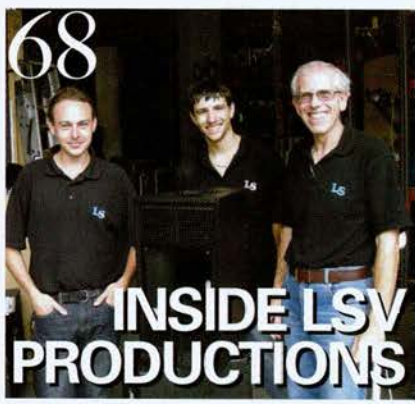
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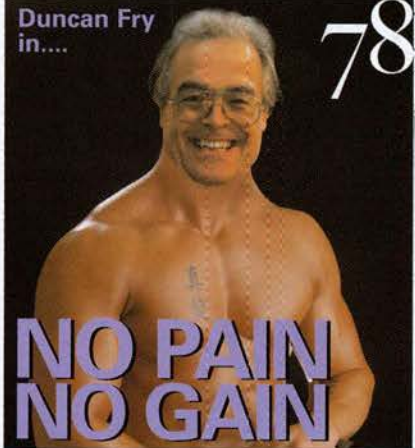
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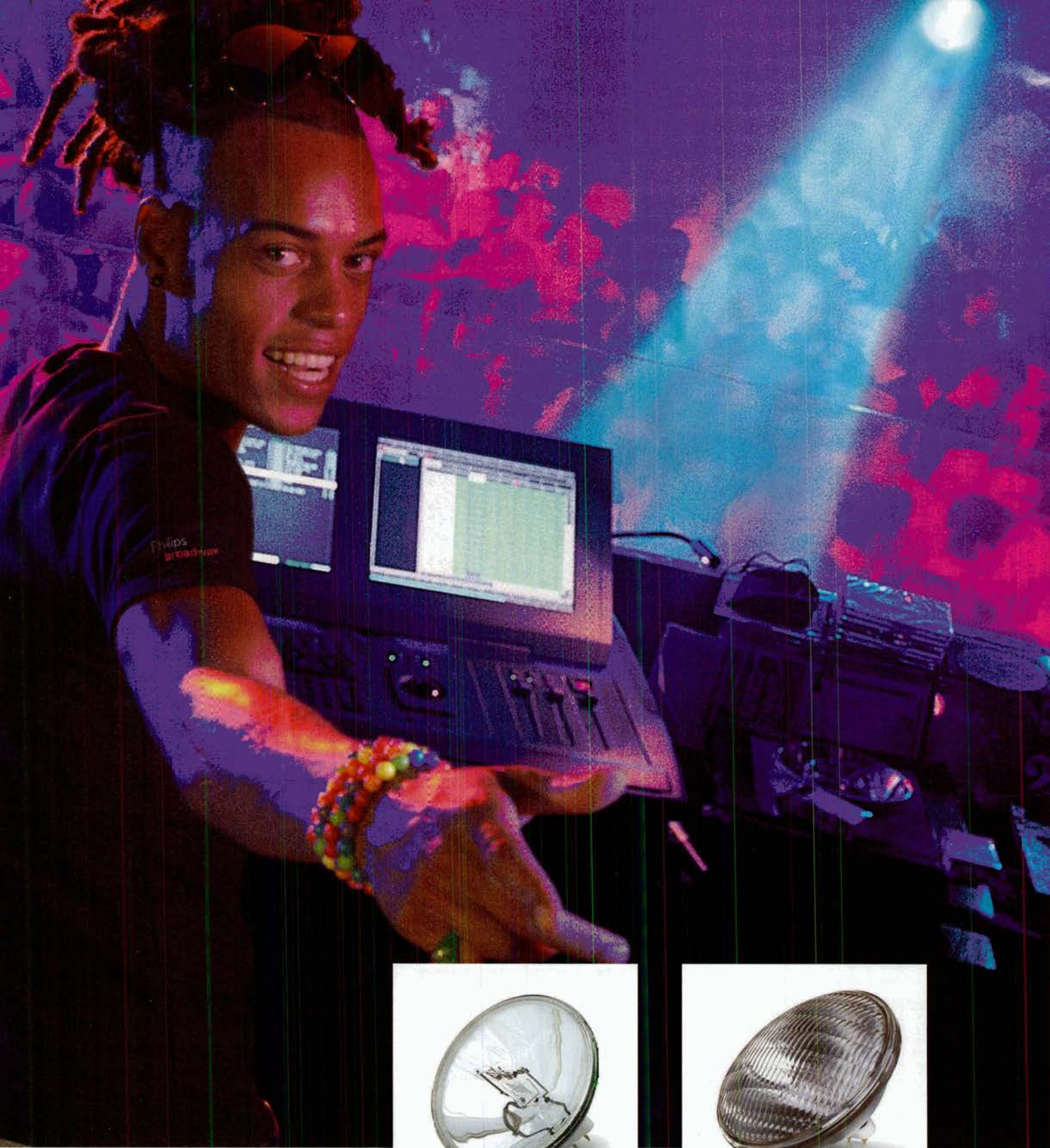
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CUE03

Entertainment Training Resource

This magazine contains much information which is a direct resource for anyone studying from the new Entertainment Training Package, named CUE03. From 2006 we will start to map certain articles direct against the relevant Unit of Competency within the package. This makes CX magazine a very cost effective resource for schools, colleges, and universities. Note that we offer a copyright release where articles in CX Magazine may be photocopied and distributed to students within an accredited course.

EDITORIAL

35 YEARS

March 1st 1973 I registered my first business name: Zapco Lightshows. I've written a history piece about it on the website. For more than half that time – nearly 18 years - I've been peddling my opinions here – a privilege for certain.

FLOOR WALKER

It was my first ENTECH without having to be in a seminar room, so I spent three days walking the floor. I felt the love – everyone managed to be nice to my face and each other. It was a tribal gathering of grown up's.

BEER AND WINE

ENTECH reminded me you need specialists to sell entertainment technical gear. Fosters (beer) merged with Southcorp (wine) and sales went down because beer reps can't sell wine. Kind of like M.I. reps trying to sell pro audio or vision.

CLASS OF '08

Welcome 37 bright young people to Julius College and a record component of females in our technical production course. Every Thursday at 1pm we run a rally in our theatre barn and we welcome industry visitors. Have a coffee - meet the students.

YOUR OPINION

I'll turn this column over to you, if you pen something that you care about. Email cx.mag@mac.com with 'editorial' in the subject line, so my assistant doesn't mistake it for one of the many penis extension offers I get. How do they know, anyhow?

ISES

I was surprised at the calibre of the hombres at the International Special Events Society (ISES) debate at ENTECH. I counted off about a dozen really significant events heavyweights, not including the couple on stage who slaughtered my team. We need more associations like ISES.

ASSOCIATED

And congratulations to the ALIA people who ran some seminars, quite successfully I hear, at ENTECH and generally championed the cause of lighties everywhere. They don't do it for money, they do it because they feel it is needed. Plenty of younger readers have enjoyed ALIA technical tours over the years.

Julius

CX AND THE WEB

18 years ago there was no web, but since 1994 we've had an internet presence. The latest bears some discussion, because it is reasonably unique. CX has benefited first from desk top publishing – they said it would spell the end of magazines since anyone could publish without a typesetting degree. Then came the web, which has killed many publications but enhanced the quality ones. Like CX.

In April 2006 we quietly put the whole print magazine online as an eZine, for Acrobat pdf downloads. Ever since, the whole mag, complete with adverts, has been online a few weeks after the hard copy goes out. It's all there – 17 issues to date, online, waiting for you to download for free.

The downloads have built and built, to the point we have thousands each issue, and just recently we started registering people for free, so we have their details. It's been really successful! People accept that in return for a free magazine download, they are prepared to get a newsletter emailed from CX.

What I like best is that each registration is confirmed by email, so we know who you are. We're re-establishing contact with heaps of old friends and great readers, as well as seeing new people from all the great institutions that we know! Trust me, it is confidential info, no-one else is going to email you if you register, and you can unsubscribe anytime.

Not all our print subscribers need a hard copy, but most still do. We are committed to print, first and foremost, and will keep upgrading and improving the hard copy of this magazine.

Our media friends tell us our registration strategy is the best one of all, people resent if they have to register to gain access to regular web news. You don't have to register to read our website news, just to download the magazine sections, complete and laid out with adverts. Just like the print edition.

It's bringing heaps of traffic onto the website too, which helps our online employment adverts.

Onwards and upwards, and welcome to all those new readers we've found around Australasia and indeed the world.

Andy

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CX NEWS

DEVICES, PEOPLE AND CONCEPTS

STEALTHY SECRET OF SALISBURY ROAD



Julius Grafton writes a story with more questions than answers...

Whether through security concerns, paranoia or just good old Aussie secrecy, a colleague recently advised CX that he could not tell us where he worked. This was a new idea. We assumed he meant that he was now in ASIO or the CIA, but no. It seems his employer, active in the Sydney corporate audio visual, sound and lighting supply business is just completely obsessed with confidentiality.

The industry is awash with confidentiality agreements for when you go work with a major star, like you are not allowed to tell the newspapers all the scandals that you see. This much we understand. But you sure can tell people you work for them.

Our colleague the techie was very embarrassed about the whole thing, and felt legally handcuffed by his employer without a clear idea on the motives as to why. It seems whenever the company needs or supplies a sub hire, one of its silver vans or trucks

would go out. No deliveries were made to its premises. No one was to know where they were located.

Maybe they don't like sales reps calling around.

It only took one phone call for CX to get the address – not from a current or former employee, so no witch hunt should be done by the nervous proprietor. Interrogations of staff and crew are not necessary.


We took the CX surveillance van for a drive up into the Hills district of Sydney, about 45 minutes from the CBD. Our photo (taken incommunicado from the back by our masked paparazzi) shows the premises, lawfully shot from outside. It was like a scene from Men in Black. Maybe this is a front for an alien empire? Perhaps it has something to do with Scientology?

The location of this mysterious entity is Units 4 and 5, number 3 Salisbury Road, Castle Hill. It is just near Hillsong Church, and not far from where Norwest Productions, a friendly and open audio company of some repute, was founded.

There are a few aloof and introverted owners of production companies in Australia but this is the first fully stealthy production company we have heard of. Sometimes with less secretive but generally unfriendly companies we have observed, the climate of suspicion and distrust infects the business like a rampaging fungus.

CX would like to hear from anyone who may shed light on why the business pictured has a penchant for anonymity and secrecy. Information about the owners, contracts, clients, work done, professionalism, and any mishaps if they have happened would be appreciated.

We have heard that the mailing address for this business is located many miles away on the other side of the metropolis. If anyone can direct us to a website for the company then that would also be very helpful. We do know more, including the name of the business, but this is so much fun that we will keep it quiet. For now.

cx.mag@mac.com is the hotline. 



JAMES "ROCKY" MCKENZIE

SAD NEWS with the permanent departure of Rocky McKenzie who has passed away in Melbourne aged 46. Rocky was a leading lighting designer and operator, who has had a bad run of things lately.

Rocky battled with alcohol. There's a strong feeling that Rocky's story is a

Continues next page...

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cautionary tale. "I always knew he was a genius," his girl Anthea says. "I found him and pieced together the tragic accident. He would never have left a double shot of vodka in the bottle and half a packet of Marlboros if he didn't intend coming back. He was going to work the next day. What can I say? Male behaviour is difficult for a mere female to understand. Sadly the health system has lots of gaps for people to fall through and cries for help are not heeded."

The story of Rocky starts in the

1970's when lights were plugged in to a switchboard and many bands had 16 Par cans.

Like many young guys at the time, Rocky had a passion for the music. His friend Geoff Lloyd worked alongside.

"We lived for the music. Lighting guys move with the colours and embrace the music."

Rocky worked with the who's who of Australian rock, and overseas with Tina Turner and Sting. He did theatre seasons in Australia with Beauty and

the Beast, and The Rocky Horror Show.

"He taught me stuff like how to patch a lighting rig on paper in a quick lesson and said if I remembered that I would have a job for life doing dimmers," says Anthea. "He would say to me 'see if you could handle the pressure of having the whole rig your responsibility when they say GO'."

"Funny how all the lightbulbs are blowing in the house now. The McKenzie motto is 'To Shine Not Burn'".

CX

RIVERSIDE CHANGES THE GUARD

100 YEARS OF EXPERIENCE LEAVES VIA THE STAGE DOOR



Bob Peet (left) and Col Peet (right) with family members.

By JULIUS GRAFTON

A theatre era closed in January with the retirement of two Parramatta Riverside veterans, Col Peet and his brother Bob Peet. As Operations Manager and Front of House Manager respectively, they formed part of what's been tagged 'Dad's Army' at the busy western Sydney complex.

Theatre Director Robert Love paid tribute to the pair at 'Peet the Musical', held in front of several hundred friends and theatre identities in the main venue at Riverside. He noted that the Peet brothers and his team which includes the recently departed Tony Hayes had transformed the venue from a place where no one went in 2000, up to one of the more successful subsidized complexes in the country.

Col said that the industry perception of Riverside when they started was one where the staff just said 'No', and that the complex leaked, smelled and was run down. Since then it has been extensively upgraded, re-equipped, and a theatre workshop added under the stage.

Bob Peet has run a staggering number of regional venues, and managed The Really Useful Company tent tours of *Cats* and *Grease*. The older of the two, his theatre career spans the late 1950's until now. He was in the same school class as the former Prime Minister and quoted: "he was just as boring then".

Residents of the Illawarra fondly recall Bill's weekly TV segment on Wollongong's Today Show when he bit off more than he could chew with Mary Coustas, aka Effie the loud-mouth Greek goddess with huge hair. Shot at 8am on a Tuesday morning, the actress was ready when Bob made the mistake of assuming she was not in character, despite the towering wig and yard long fingernails. Introducing Mary Coustas drew a spray from Effie who also accused Peet and then Bob of not knowing his own name but also of perving at her, "you'ze sleezebag. And is that a microphone in your pocket, or are you just pleased to see me?"

Only just surviving the season with Effie, Bob continued his career with stints at Alice Springs, Toowoomba and Ipswich. He built sets for musicals in his spare time. Bob says he has met royalty – the Prince of Wales and his wife opened the Illawarra centre. "I've never met a King, but I've met a lot of queens," he quipped.

Meantime Col ran technical at the Footbridge Theatre and Sutherland Performing Arts Centre before joining

Riverside- a job no one else wanted. Until the end he still worked those impossible theatre hours – my mobile rang by mistake one recent Sunday at 6.15am and it was Col, supervising a bumpout.

Retirement means more involvement with amateur theatre for the duo, honoured at the farewell by a number of cast from various musicals they've worked with over the decades. Col will spend time on overseas aid missions, and Bob will be able to see more of his dozen grand kids and several great grand kids.

The Peet brothers embody the best of theatre and its traditions.

CX

CX and the theatre community are sad that **DENIS IRVING** has passed away over the weekend of February 17th after an illness.

Entertech was established in 1979 by Denis Irving. For over 30 years, Denis has been providing innovative design of concert halls, theatres and cultural centres.

Denis has had a long history in theatre and theatre development and has provided theatre design consultancy to many major projects including the Melbourne Recital Hall and MTC Theatre Project, Melbourne and the Centrestage Theatre Project Perth.

In 2006 Entertech merged with Marshall Day Acoustics to form Marshall Day Entertech. The merger built on a long history of jointly working on theatre development in the region.

Denis was a founding father of theatre technology in Australia, originally launching the local arm of Strand Electric.

He will be sorely missed.

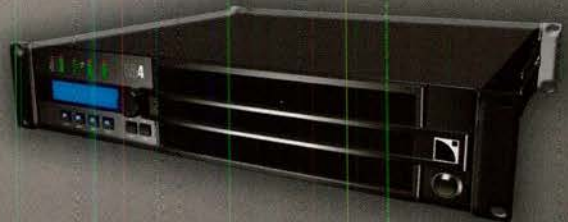
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ENTECH ON THE UP & UP

ENTECH came and went over three big days and two nights in Sydney during February. The trade show delivered exactly what it promised: significant decision makers from the production, installation and broadcast markets across the region. It was a triumph for the organiser Louise Brooks, and the Staging Connections controlled ETF.

Held as usual in the Sydney Exhibition and Convention Centre, the show had a very polished look with major exhibitors all raising the bar – and many running an on-stand bar as well. It was easy to get a drink, but for the first time the famous waffle maker was absent, driven away by the fees charged at the centre for any on stand catering.

Covering one and a half halls, the show has had the same footprint for a while now, but the content has escalated as distributors and manufacturers hone their presentations. Expertise on stands was unsurpassed, with as many as 25 international technical representatives on the Jands stand alone.

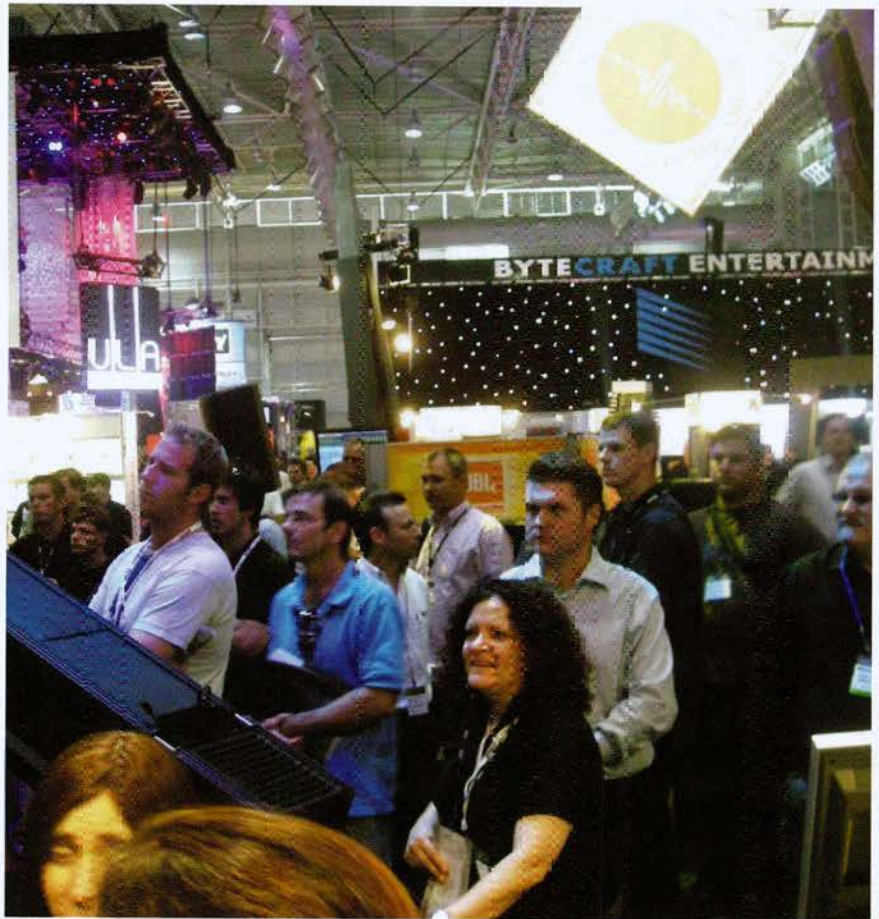
World wide debuts were unveiled for the Digico SD7 live console and the Jands Vista I3 lighting console. Brand new technologies from everywhere were on show, and in many cases connected and working. Turn any corner and you'd see something new.

The exhibitor balance was spot on too, with the usual exception of video – most camera and projector makers spend their money at SMPTE which is where TV types go. But ENTech is encroaching, with vision devices and LED displays everywhere. Lighting made up around one-fifth of the floorspace, in line with industry revenues.

CX spent all three days on the floor, for the first time. Previously we've run seminars and workshops which kept us on the hop. Down on the floor at the 2008 show we saw new and old faces all the time. "I've been trying to leave for three hours," one delegate told me, as I delayed him a little longer.

The displays were all great. The old days are long gone, where a long carpeted wall of shell scheme would have some tacky laminated posters hung skewiff and badly lit.

Walking in, you saw Group Technologies on the left, and Jands on



This is Entech '08!

the right. Group had a mysterious white curtain encircling the new Digico console before it was revealed, with product on all sides of a funky bar area in the middle. Jands had different product groups in areas with the right wall showing theatre project equipment.

At the far left were TAG, dishing up free coffee and pastries to friends and strangely, also to competitors. In the next row were Production Audio Services with a silent stage showing Aviom monitoring, and flown arrays of EAW product. At centre were Audio Products Group, with a very clean and white vibe. Left side the stands got smaller almost all the way to the back, with ATT Audio Controls, Madison and Digidesign all standing out from the pack.

Slap barg in the middle was the ULA stand, with high impact presentation and a very convenient bar area. Amcer Technology had some musicians on their stand, while Bosch were the major player at the rear in the middle. Bosch made a big debut, having acquired the EV / Telex / Midas

businesses last year, d&b Audiotechnik had a most interesting stand that had a kind of string wall around it. You could kind of see inside. Clearlight had the rear corner right angle, which was in a heavy traffic area. They used very bright LEDs to attract lighting people.

Over in the half a hall (Hall 6) Yamaha and Meyer dominated the entry, while Altronic and Magna both followed on. A central LED bar was a mixed success, most people seemed to find a drink on a stand, but the LED bar gave Staging Rentals a good promotional boost.

Lawco from Germany, Outire (Italy), Eora ADR Audio (Slovenia) and Riedel from Germany were just some new exhibitors to ENTech.

Some brands are not represented at a trade show. Some years there are solid reasons, some years there is no space. For a while the delegates weigh all that up, if they notice at all.

Hills SVL were there in force, after absence that they were open about. CEO Stuart Craig was very happy with ENTech 2008, and the company's broadcast ranges were all well trafficked.



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Aviom quiet stage.



Isn't it rich...

On the other hand, Show Technology chief Emmanuel Ziino was dismissive and contradictory as to why his lighting import firm does not exhibit at ENTECH. Standing in an aisle, the impeccably groomed former DJ said that the decision not to exhibit was taken 'years ago'. Would they be at the next ENTECH? "That's in two years, anything can happen in this business," he said. "Trade shows are popping up everywhere – there are two in Italy now."

While he was talking, his largest customer Chameleon Touring Systems were on the Jands stand, firming up their latest Vari-Lite order, worth around \$2 million. Chameleon represent around half the considerable profits of Show Technology, who host

invitation only events instead of participating at ENTECH.

On the other side of the world, Show Technologies major supplier Martin Professional were defensive. "We feel a more targeted effort towards key customers is of greater benefit, and using some of the large exhibition budgets for more personal, hands-on events gives customers more dedicated attention. Show Technology just had a very successful golf day and dinner with 300 plus attendees."

There were ideas bigger than golf everywhere, new conventions for older technologies, brighter and lighter. The manufacturers are thinking about power consumption – efficiency is the new thing. Green is the new green.

Prices are falling too, as manufacturing costs drop. The origin of the equipment is now not a talking point. The buying decision involves how good the support is, both locally and at the brand HQ. Delegates talk to each other, and bad support becomes known fast.

Church groups were out in force, usually not obviously. The Technology for Worship Conference people ran sessions at ENTECH for the first time, and closer examination showed many delegates with obscure or non church name tags. For example, David Watson had a tag that read EWI which means Extravagant Worship International – the business entity behind Christian mega-star Darlene Zschech, for whom he now works full time. Darlene tours the world, but is Sydney based, and also owns the Grove Studios – formerly Mangrove Mountain. She has multiple platinum records and sells staggering numbers of CDs across the globe.

Most exhibitors now recognise the strength of the church market, but some appear confused about how to engage it. Large churches like CCC and Hillsong attract the occasional sales rep, who sometimes find themselves gently directed to a bible study group or service. You don't cold call a church.

Some exhibitors were quite vocal as to the lack of ability of some church clients, wrongly assuming that all church technical people are volunteers. Some working professionals are also quietly involved in churches, but don't advertise the fact. Talk soon gets around, and today's amateur is tomorrow's professional, whether or not they are well trained.

What about the consultants? Jands seemed swamped in them, as did other exhibitors who appreciate the finer points of precision. With contracts like the new Melbourne Theatre (underway now) worth as much as thirty million dollars, some long term consultant seeding is always a good idea.

If ever there was a trade show where you simply cannot judge a book by its cover, then ENTECH is it. I saw a guy wandering around looking like a displaced bag wash and smelling the same – and I know he is worth millions. Some exhibitors were avoiding him, on appearance.

It's nice to see some spouses of both genders checking out the industry, and the occasional kid – but ENTECH isn't really a great place for

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ULA stand.



Digico chicks.



TAG coffee.

people who don't speak the language. They look at all the gear and ask where the band is. Plus the older industry types were invariably roadies once (or still are) so there is a kind of risqué camaraderie in the air that is hard to penetrate at first. The Australian art of abuse as a term of endearment is endemic at ENTECH.

Another clique who has grown in representation as ENTECH visitors are the pub owners, whose pockets are stuffed full of gaming profits, and who need to reinvest in their place. Where the industry suffered with the introduction of pub gaming and the closure of band rooms, it is now benefiting as the competition hots up and the punters expect music and big screens.

If ENTECH days were full, so were the nights. Monday saw TAG host a party across town in seedy Oxford street, at a venue called Oxford Art Factory. 200 guests watched in fascinated horror as a sword swallower injected a long thin balloon and burst it inside his stomach. He then deep sixed a neon tube, which was turned on, with house lights off, to glow through his body. Those TAG guys do like the weird stuff.

Back at Darling Harbour things were much more civilised up on top of Star City where ULA hosted drinks and very nice finger food (I liked the Duck Tart) at the Astral Bar. It was classy.

Tuesday night the focus was on Home Nightclub, where Jands held their party for 300 or so. There were countless diversions every night, small and large, as thousands of delegates and industry types fanned out across a wet and windy Sydney.

Come Wednesday and it was time to go home; too soon for many since three days isn't really quite enough time to see all there is AND talk to all those people as well.

ENTECH is an idea whose time was always right, since it is almost tribal. What other technology industry has the chance to stay and enjoy your work, decades on? Where else do people not leave their employer, and clock up 10, 20 and now 30 years with one firm?

Marrying sound, lights and vision wasn't universally embraced when ENTECH started in 1994, but it sure did take off, and now more than ever the specialists are learning new skills, because any one specific technology isn't forever.

www.entech-tradeshow.com 

THE SEARCH IS OVER

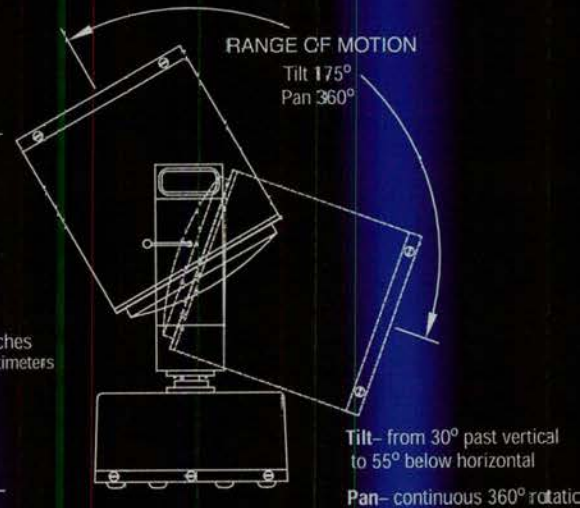
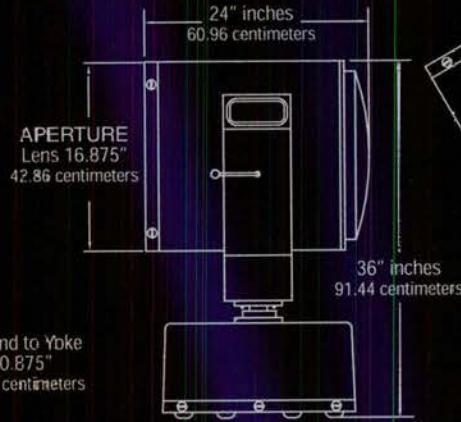
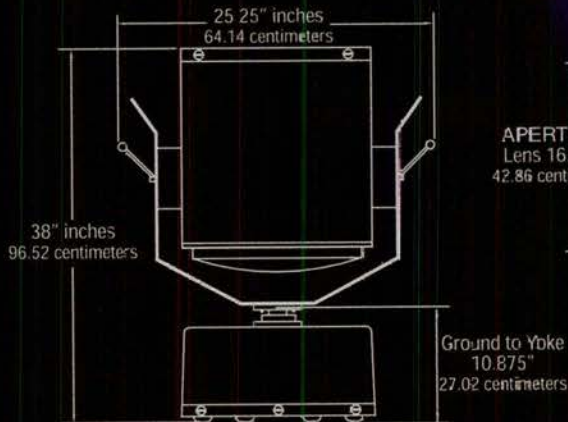
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ISES HOST ENTECH DEBATE

The annual International Special Events Society (ISES) Australian section debate was held at ENTECH with events heavyweights egging on their team. They convincingly argued against the notion that Technology Is The Most Essential Part of an Event. Athens Olympics and Commonwealth Games opening director Andrew Walsh, Staging Connections Chief Creative Officer Paul Kenny, and esteemed events designer Merryn Hughes had no trouble asserting that creative is everything.

Stacked against this freight train of conviction were InfoSalons CEO Jo Anne Kelleway, Technical Audio Group CEO Tony Russo, and CX publisher Julius Grafton. Strangely this team were not ISES members.

The win was outright, against some clever angles from Kelleway – who argued that everything in an event that was man made was ‘a technology’, and Russo who appealed to the heart, ‘because bad audio makes people sad’. Grafton appeared to miss the point altogether when he declared that the only events without technology



Grafton (left) with Tony Russo, Jo Anne Kelleway, Paul Kenny, Merryn Hughes and Andrew Walsh.

may be a riot, or a roman orgy.

Merryn Took from Staging Rentals was the moderator, and he managed to appear unbiased, despite being one of four ex-roadies on the stage. (Russo, Kenny and Grafton the others). Merryn timed the speakers, who all ran for six minutes or less, with the significant exception of Kenny who wrapped up

his teams contribution with a forensic demolition of the propoerent argument.

ISES attracts the 2% of events professionals who have a credible creative streak. ISES also supports events colleges whose students gain invaluable networking when they attend ISES functions.

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- Adamson Y10 Concert System
- Dolby Lake Processor
- Lake Contour, MESA
- XTA DP428, DP226, DP224
- Optocore Digital Network
- LabGruppen fp6400
- Camco Vortex 6
- Crown Macrotech VZ500Z
- Yamaha PM1D, PM5d
- Yamaha M7CL, DM2000
- Yamaha 01V/96 (40 consoles)
- Digico D5 112/EX
- Midas XL4, XL3
- Midas Heritage 3000, 1000
- Midas Verona, Venice

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ENTeCH WRAP

A CX LOOK AT SOME OF THE HOT NEW THINGS AND CONCEPTS AT ENTECH.

This is by no means everything, just a looksee at what the next year will bring.

Production Audio

Services introduced the EAW NTL 720 (pictured at right), a small self powered line array module loaded with onboard technology and EAW's Guinness Focusing. Loaded with 3 x 500 watt amplifiers, the little NTL has a cool 'hinge and latch' innovative flying rigging system, that'll reduce the 'where is that pin?' stress that a lot of systems induce. The best thing: Cat 6 cable carries audio and control.



Also on stand: EAW's UMX 96 High end digital mixing console was attracting a lot of interest, it is about to go to release, having had a beta year out there.

AVIOM's personal mixing solution was well displayed with a 'silent stage' where various professional musicians and acts performed and because of Poland's great V d um system, not much noise was to be heard. Unless you put on the headphones, which hundreds of people did. CX



Studer are at the top of the broadcast audio tree, and their Vista range of digital audio consoles are what the Soundcraft VI-6 is based upon. Soundcraft are kicking serious goals with the VI-6 which was on the Jands stand.

So I was slightly surprised to stumble on to the Vista 5 SR console (above) on the ATT Audio Controls stand. I knew ATT did Studer, but I am behind the 8 ball with the Vista 5 SR which is a sound reinforcement adaptation. Why is it not called Soundcraft?

Ian Staddon from Studer explained that despite the two firms having the same ultimate owners, the technology is shared such that Soundcraft do their thing, and Studer do another. So it comes to be that the 5 SR has more features than the VI-6 which is sold in a fixed input / output format. 5 SR has a standard stage box with 84 mic inputs and 8 line outs, but thereafter you opt out up what you want.

SR 5 has 50 rotary encoders on each screen, where VI6 has 16. Same father, different kids. CX

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ART 315 A	15" + 1"	300W	50W	128dB	20kg	680H 405W 345D
ART 322 A	12" + 2"	350W	50W	128dB	23kg	680H 405W 345D
ART 325 A	15" + 2"	350W	50W	129dB	24kg	680H 405W 345D
ART 522 A	12" + 2"	500W	250W	130dB	18kg	680H 405W 345D *NEW
ART 525 A	15" + 2"	500W	250W	131dB	18.5kg	680H 405W 345D *NEW
ART 705 AS	15"	800W	TBC	130dB	37kg	590H 435W 600D

**All power specifications measured in continuous RMS power.*

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ARTSERIES →





The TAG stand had their customary hospitality running hard, with a strangely compelling clown display on one corner, and a bunch of frozen mannequins on another. There was even a couple of refrigerated displays full of Audio Technica microphones which were somewhat cold when retrieved from within.

Notwithstanding the quirky but distinctive imagery, TAG had a slew of new things on show including AT in-ear monitors. AT are a late adopter, having had a high profile with wireless microphone systems up until now. The M2 in-ear system is low priced at \$1295.

Also low priced is a Euphonix control surface for Apple Logic at about 2 grand. This'll populate post audio places but also find plenty of Mac owners as well.

Martin, FBT, QSC and Community loudspeakers all posted, the Community offering is a water proof unit that was not drowned despite trying. (Above).



A smaller i-Live for Allen and Heath, cheap QSC amps, and stuff from FHB were all eclipsed by a product that everyone needs, the Martin Engineer (above). It promises to gain match and EQ different music tracks so your DJ can get on with not bothering to do anything except looking good

CX

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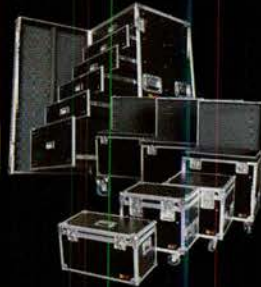


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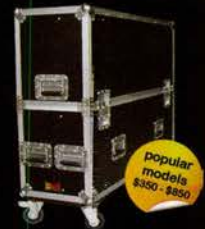
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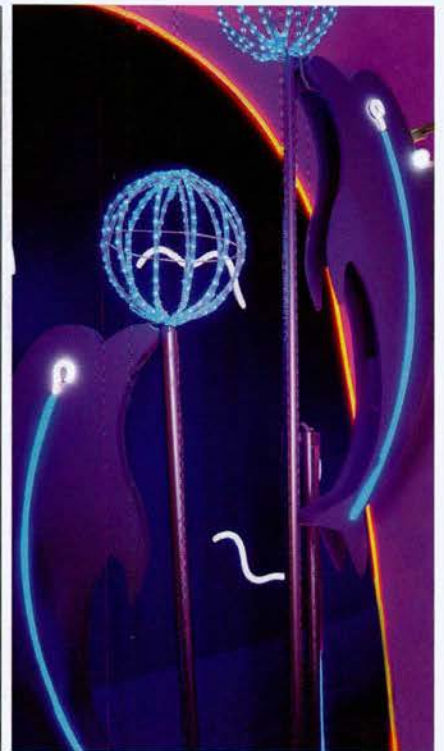


Image Envirclife showed a revolutionary flexible LED product, Neo Flex. It can be used in a variety of applications limited only by the imagination. Some of these include accent, feature lighting and prop lighting. Choices include 12, 24, or 240 volts and 7 colours also with programmable RGB options.

Neo Flex is durable and its weather proof rating of IP 65 make it suitable the day to day high wear and tear nature of production and entertainment lighting.



ULA had the mother of all stands at ENTECH and in there were new solutions by the bushel. Avolites Pearl Tiger is a small footprint 4 universe console. New also: ECue Media Engine 2, ECue fader unit and Traxon LED panels.

Wireless Solutions W-DMX system is taking off in Australia, having been used on Sydney Harbour for an illuminated sailing display recently. At that event,

Mark Hammer had two SGM Palco 5 RGB LEDs on each of 23 boats, controlled by W-DMX. New at ENTECH is the S2, a 2 universe wireless DMX system.

The avalanche that is Robe continues, this ENTECH saw the brand elevate some more, with the Colourwash 2500E AT with a PC lens.

ULA's LED range is expanding, and includes SGM Palco and iLED products.

Digico chose ENTECH for the world wide launch of the new SD7 live digital mixing system. Accompanied by some hoots and a soundtrack that grew rather loud, the crowd assembled as the white circular drape was lifted to reveal the new console. It looks very sexy.

James Gordon (Managing Director, DiGiCo) was on hand, and the essential info is that the SD7 (pictured right) costs about 20% more than a D5. This is interesting, since SD7 and Midas XL8 occupy the same ground but the XL8 appears to cost somewhat more.

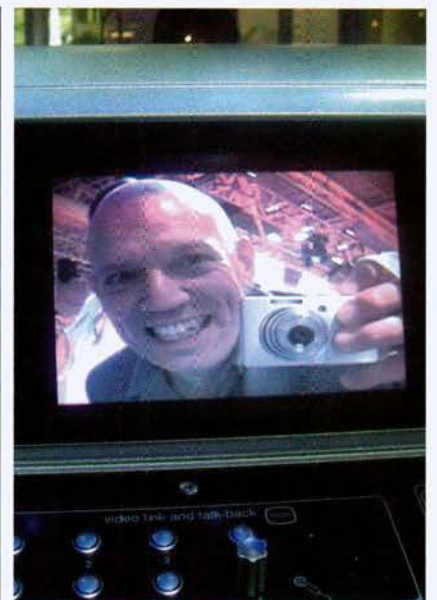
SD7 has a kind of open architecture which allows, in theory, a significant number of mix busses and inputs/outputs.

Drew Menard from Group Technologies (distributors of DiGiCo) showed the foldback mode where the virtual graphic EQ is manipulated with motorised faders (as usual) that have a centre 'click' detent – most un-



usual, and most extremely useful.

We were mesmerised by the TV screen, where one engineer can see another – so you could actually see the



monitor engineer from front of house. This opens all kinds of possibilities.

There's a big story in the SD7, and we will bring it to you soon.



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The Sky-view searchlight, distributed by **Mega Vision**, is specifically designed for placement on rooftops and other locations where sighting other searchlights could be difficult or impossible. It weighs only 62kg and can be separated into two parts for ease of transport and installation.

Sky-view searchlights use an HID lamp which produces considerably higher output per watt than xenon-lamped fixtures. This increased efficiency allows the fixture to draw only 5 amps from a single phase supply rather than requiring a three phase supply. CX

London was calling for **Jands**, namely the BSS Soundweb which is extending its reach with four new London series devices. Soundweb now goes as large as any other distributed DSP audio system, and battles against Media Matrix and BiAmp Audia. Blu-Link is the BSS technology for 256 channels of audio, which can be connected on 100 metres of Cat 6 cable or very long distances on Fibre.

Across the aisle in the small city that was Jands were new Chroma C LED products, the Color Punch was doing just that with a 20 degree round beam that hit the roof of the hall in daylight.

It is IP65 rated for bad weather, and needs no fan. A smaller device was the Color Block 2 which intriguingly has the colour mixing done with optics, so there is no red-green-blue mash. Just a lot of colour, from new even higher powered LEDs.

Vari-Lite, Crown, Shure, Clear-Com, dbx, JBL and Lexicon all had international specialists standing by. Jands Theatre Projects is growing fast with more engineering solutions on hand.

Jands have just taken on Spotlite, a well regarded Italian range of theatrical luminaires. They had them in a demo room out back, where Tim Kennard was showing them to theatre dudes from everywhere.

Finally the new Vista I3 console was released, promising to shake up the middle of the market where MA and Avo rule across the northworld.

I3 has an interesting skew on the way they sell outputs – they are ‘dongle’ enabled, from 128 thru to 2048 or unlimited according to the kind of dongle you have. There are now a slew of Vista lighting control solutions. More on this in a future issue. CX



The all new Vista I3 console.

Hills SVL were at ENTECH in force.

Aside from the Lighthouse stand (read elsewhere) they had a Crestron stand plus the main stand where they showed a considerable raft of audio lines.

Turbosound's new range of Impact speakers are a new installation range with improved aesthetics, performance and features.

Lab.gruppen's new PLM 10000Q is the first product of Lab.gruppen's new Powered Loudspeaker Management Series - it comprises a four-channel amplifier, dual Dolby Lake Processor modules, Dante low-latency networking, and features for load verification and performance monitoring.

Rane had several new products on show, notably the 'Mongoose' system, which provides an interference-free digital audio link from 2-channel audio input/output plates to any CobraNet enabled DSP matrix.

Then there was the Beyerdynamic Revoluto, a desktop conferencing microphone with 'mic array' (line array in reverse) technology. Other audio on show included Australian Monitor, Ampetronic, MediaMatrix, Renkus-Heinz and Sabine. CX



Bosch made a big impact at ENTECH as the new masters of EV, Telex, Midas, Dynacord and KT. The Midas XL8 (pictured) was there, with a line of people waiting to try it out. Australia CEO Chris Dellenty (above) told CX that the changeover was going well, and APAC Audio staff we spoke to supported the sentiment.

Bosch has over 100,000 staff around the world, and the local arm have already made improvements at the Northmead HQ where the audio team are located. CX



ATTRACTING INTEREST: Roland's V Mixer with digital multicore and optional Sonar hard disk recorder interface. This is a unique package as far as we can see, and we will look at it later this year in CX.



ENTeCH BITES

The Resource Corp were at ENTECH with K & V and ARX products leading their push, and the friendly faces of Tony Hoskins and Duncan Fry.

Clay Paky returned to ENTECH on the Lighthouse stand. Lighthouse is new to the show, having been established as the lighting channel for Hills SVL. They showed new additions to the Clay Paky Alpha family. The Alpha Wash 300 is a compact light and extremely quiet washlight. Alpha Spot 300 has the same optical, lighting engineering and constructional qualities as the Alpha Spot HPE 300 but is cheaper. The Alpha Beam 300 produces a super concentrated near parallel light beam, suitable for the same usages as a Par 64 ACL. Opti-Kinetics, ChamSys, DTS and CLS-LEDs were also on the Lighthouse Stand.

Electric Canvas had a good showing with the Onlyview, possibly the most powerful video display software on the planet. This ETC product is only available for rental in four countries. So far it has delivered a display for a show in Canada with a 450 metre wide image from 29 x 20k projectors. That is scary.

Madison Technology had Digidesign's Live digital mixing consoles on show and we're kept very busy. They also have a new ProCo digital multicore solution for up to 256 channels on Cat 6 in modules of 8. Best of all: a phantom power switch for every channel.

CMI were downsized but happy, with HK Audio Contour Array System products on display and plenty of interest. At the extreme other end of the market was the Warfedale Titan, el-cheapo and showing how CMI have a speaker cabinet for every occasion.

Audio Products Group had a central stand with Audia, Toe, AKG, Peavey and Denon brands plus more. The company covers hi-fi, pro audio, installation and DJ/MI retail lines which makes a broad offering.

Amber Technology were busy with all things Danish on show. They seem to like that part of Europe, or maybe it's all a coincidence.



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Travers Falkiner makes a welcome return to pro audio, with ATT. Travers has been in telecommunications for five years after being shafted by Teac Australia who gave him a Tascam franchise, and then changed the rules.



On the Jands stand, Tony Davies (Chameleon) with Jeff Bolt and Paul Mulholland. Firming up a \$2 million Vari-Lite purchase.



Col West and partner Kerrie Alterator from Framelock Barriers, a new success story from Darwin of all places.



One of several demo rooms was used by Yamaha for a fully wired Ethernet audio and digital mixing series of lessons.



Susannah Daly, a fresh NIDA student on the Jands stand.



From left: Ian Stadden (Studer) shows a Hillsong audio team the Vista 5SR. Muchiri Gateri, Michael Cuthbertson, Mikael Salomonsson, Andrew Starke and Steve Le Roux.



Sandy Rutledge, with Margaret and Col Stevenson on the Production Audio Services stand. Rutledge Engineering have 200 staff across Australia.



The Turbo is a cool dual channel video storage and editing solution from Grass Valley.



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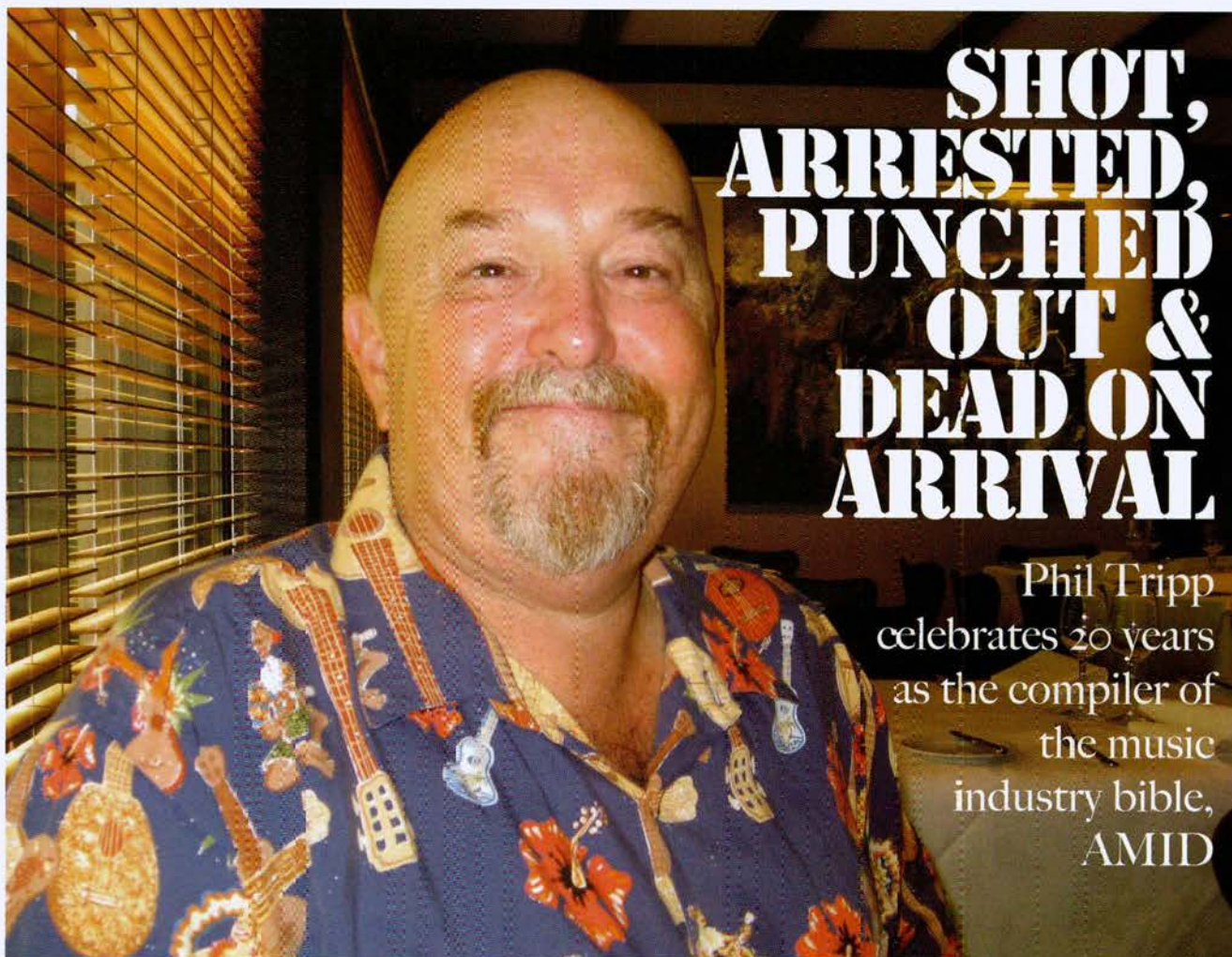


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Phil Tripp
celebrates 20 years
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AMID

By JULIUS GRAFTON

On March 1, IMMEDIA released the 40th edition marking 20 years since Phil Tripp created the AustralAsian Music Industry Directory. Larger than life, loathed and loved in equal measure, Tripp is no-one's fool. Turn on the radio and you'll hear him on the news as an unchallenged spokes-mouth whenever the music business hits the headlines.

As for the directory, it's produced every 6 months and is a must-have for people needing to find managers, music publishers or CD replicators – amongst umpteen categories over hundreds of pages.

Sporting a withering turn of phrase and a ton of confidence, Tripp cuts a distinctive figure, always wrapped in a horrible Hawaiian shirt. You'll find him riding his pushbike around Sydney's Centennial Park most mornings at dawn, with one of his beloved Dalmatian dogs.

Since this issue marks the 20th anniversary of AMID, Julius ventured

to the Immedia HQ in Sydney's heart of grunge, Newtown.

Is it true you carried a gun and were a drug dealer in the USA?

Yes. I'm not really proud of it. I was 19 (1969) and got lucky when a casual connection led me to the higher echelons of hashish and marijuana importing. I did it for two years – just pot, no hard stuff – made a lot of money, paid a lot of bribes, got shot, got arrested three times but was never convicted. The money didn't last though, and funny enough, it was my ability to pack planes, boats and semis with bales and being able to drive big rigs that got me my first gig as a roadie.

As for the gun, in the early days of pot dealing, it was students and hippies and you didn't need one. That changed rapidly. When I quit, I still had the guns but by then society as a whole practically demanded you carry one. In my state of Georgia, I had a concealed weapons permit which came in handy when I became a tour manager and carried lots of money for artists and promoters. But the guns, the drugs that were taking over

America and the racism were what drove me here. And let me tell you, I was happy to give up the guns and also the grind of touring to come to a country in 1981 that didn't really have pistols readily available for purchase at Kmart 24/7.

During Australian Made (the concert tour in 1987) you had a fight in a bar. With whom, and what was it about?

It was Mark Pope. At the time he was partnering the tour with Chris Murphy and I was doing PR but quit (Tripp provided a reason that was probably defamatory – Ed). I had just had the heart attack and was in a bar after a gig talking to Michael Gudinski and Jimmy Barnes when Pope came up and threw punches as the other two tried to hold him back. But he and I became friendly acquaintances over the years. We laugh about it now when we eat sushi together.

Which categories of the Directory have been the most consistent?

Lawyers certainly! We have had some firms advertise with us for all 40 editions and the industry has not suffered a shortage of lawyers. With

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the amount of changes in IP law and the wealth of litigation, the lawyers haven't suffered either.

And which have withered on the vine and gone away?

Looking at the first edition, there were five major studio advertisers and they're all gone now. Certainly there are no cassette manufacturers today and there's only one vinyl company. We don't have TELEX numbers anymore. The major publishers which were full page advertisers, got gobbled up in mergers or acquisitions so they can't afford to anymore

Which internet sites challenge your print directory?

None. Only those which can offer greater value, trust and convenience—the hallmarks of a successful store or site. And no one has been able to top what we do because we have incredible research and updating, our costs are reasonable and consistent and professionals trust doing business with us. We always had prime mover advantage from the beginning; we are a brand and the only legitimate music directory for this territory. Sure some 'enthusiasts' have tried to put together listings of companies online but as free sites, they stagnate and burn out quickly.

God knows we have had some bitter little letters from some we have had to give take down orders to— but only those who tried to copy our info directly onto their sites—because we have fake listings that are easily found online when our server does regular web sweeps. We have settled handsomely with a major magazine publisher whose supposed interns copied over our info into a teen mag— because they didn't want the word to get out if we sued.

We have tracked down owners of websites through Whois searches and ISP info and hit them with legal letters that threaten to sue over copyright infringement. We have never had to go to court with any of them and they usually take them down in 48 hours.

We have a walled garden with the listings. You can only get access to them if you subscribe and we maintain them regularly so there is great value at small cost. And we monitor the use and have ways to see those who try to break in.

When you died, what was it like?

It was like being stuck in an elevator with Eric Robinson of Jands,



The omnipresent hawaiian shirt.

his wife Patti Mostyn, every major label MD at that time (1987) and my three ex wives. I had to get out. I followed the light. I think the idea of going back to that elevator has kept me alive for 20 plus years!

Who would you invite to the funeral?

Believe me, there is a guest list on the computer. You really have to delineate between friends and acquaintances. Julius, you are on it. With a plus one for whichever wife at the time you want to bring.

I have a will and a set of last wishes - the allocation of one of my 385 Hawaiian shirts to my mates and attendees. That may be the only way I can get rid of them, the shirts that is. One of my mottos has always been to speak softly and wear a loud shirt.

What is the BEST thing about running AMID for 20 years?

It is a power base for sure. Also, I've been able to watch them come and go. I've kept the crooks out. There are 40 people who will never be in the AMID, at least the ones I know are thieves.

Who are five of your least favourite industry people, and why?

Whew! This might test my defamation abilities. Three of them are dead and died pretty sadly, lonely and fucked up on alcohol or drugs. That leaves two alive. Chris Murphy,

because of history with him which I don't need to go into. The other one is easy. (SAE founder) Tom Misner. I never quite grokked to World Tomination. But I'm sure both of them have changed and are leading incredible lives with loving people surrounding them. Like I said, people change.

Who are five of your favourites?

Easy, but in no order. Michael Smellie (ex COO of Sony BMG globally) because he's a leader and not a manager and is a visionary and a long time friend. Denis Handlin because he has passion, drive, a love of music and artists and also because we were once mighty opposites and are now great mates. David Williams who is Chairman of Shock and who is one of the humblest and hardest-working persons I have had the privilege to work with and yet he has always been centred on family as well as his staff. Fifi Riccobono of Alberts and AC/DC because she rocks, has solid integrity and is an inspiration. And finally, my partner Lisa because she had not only put up with me for 17 years but also this swimming pool of spit and faux sincerity we lovingly call the music industry. Sure she's my wife, but she has done a huge service to the industry and remained behind the scenes.

You've had some memorable legal battles, which was your favourite, and why?

Aside for never having been convicted for criminal matters, I've been fortunate not to have ever gone to court for defamation either though I had two legal actions launched against me for things I've written. And one huge stoush with the Federal Government over not filling in a Bureau of Statistics form. That was funny and will be in the book. Suffice to say here that I objected to a survey, they'd made a mistake, I didn't fill in the form, they had me charged for violating a 1901 law, dropped the first case when they blew it, paid my costs (even though I was acting as my own attorney) had me charged again, they won the case technically but it cost them a fortune, cost me a slap on the wrist and they got bawled out by the judge for wasting court time and taxpayer money. I never got another Bureau of Statistics form again!

Why do you do your own legal work?

Acting as my own attorney is my strategy for beating any litigat on threatened against me. I have no costs, they have to use lawyers to advise them, then bring a case, file a summons and that's when the fun starts. They are usually in for \$10,000 by that point and since I get to chat with their beaks non stop, I run up their fees to the delight of the firms until the plaintiffs find out that their costs are spinning out of control and discover I not only have none,

I've made myself judgment proof. They usually drop the case after they hit \$20k.

The two defo cases I've had were with the owner of On The Street, Noel Crabbe who later wound up his companies and was not allowed to run a company for many years, {Crabbe also unsuccessfully sued this magazine – Ed} and an British spiv and his company who copied our drectory listings into their own Directory. The principal later went to jail and the company went broke.

The best case though was 13 years ago when one of the top figures in the industry got drunk at a Christmas party, tried to hit me, defamed my wife twice in front of, oh about 100 top industry witnesses, and rather than fighting a criminal defo action by my wife - not me- decided to settle the matter before we even hit him with a writ. That was fun for me but not for Lisa. As for him, it was the beginning of the end and I couldn't have been happier watching him fall.

So how is the industry different across 20 years? Don't just say 'Digital Downloads.'

Music has gone from a collectable entertainment medium to a disposable one. It's gone from physical carriers to digital ones, sure, but it's also gone from a commodity, to a service and now beginning to become a utility, like water or gas or electricity piped into the home as subscription services. That's a simplification, but it best describes the RECORDED music industry.

People may think music is kinda

free, like tap water, but they want the bottled water brands (insert artist names here) at tap water prices. They want to top up their iPods with music that they don't pay for, borrow or steal, after they have exhausted their own and friends' CD collections.

The good news is though that the way online evangelism and marketing can be done globally, instantly with music, images and other forms of communications means that artists and their creative support teams can earn from and license their copyrights without being dependent on the old order of majors.

The other great news is that aside from being more diverse in incomes streams-advertising, sponsorship, TV and film use, online royalties, higher public performance payments- the MUSIC business is doing better, especially in the live concert sector. More people want to experience artists live, touring opportunities abound from shows in fans' homes to alternative venues such as churches, sports halls, schools, etc. There are so many more revenue streams available to artists as recorded music income dwindles.

The other great change? The people we encounter who use our directory, buy our books, attend our conference every two years and go to SxSW which we rep, are smarter, more informed, self educated, aware and cluey than ever before.

That's what this industry really needs.

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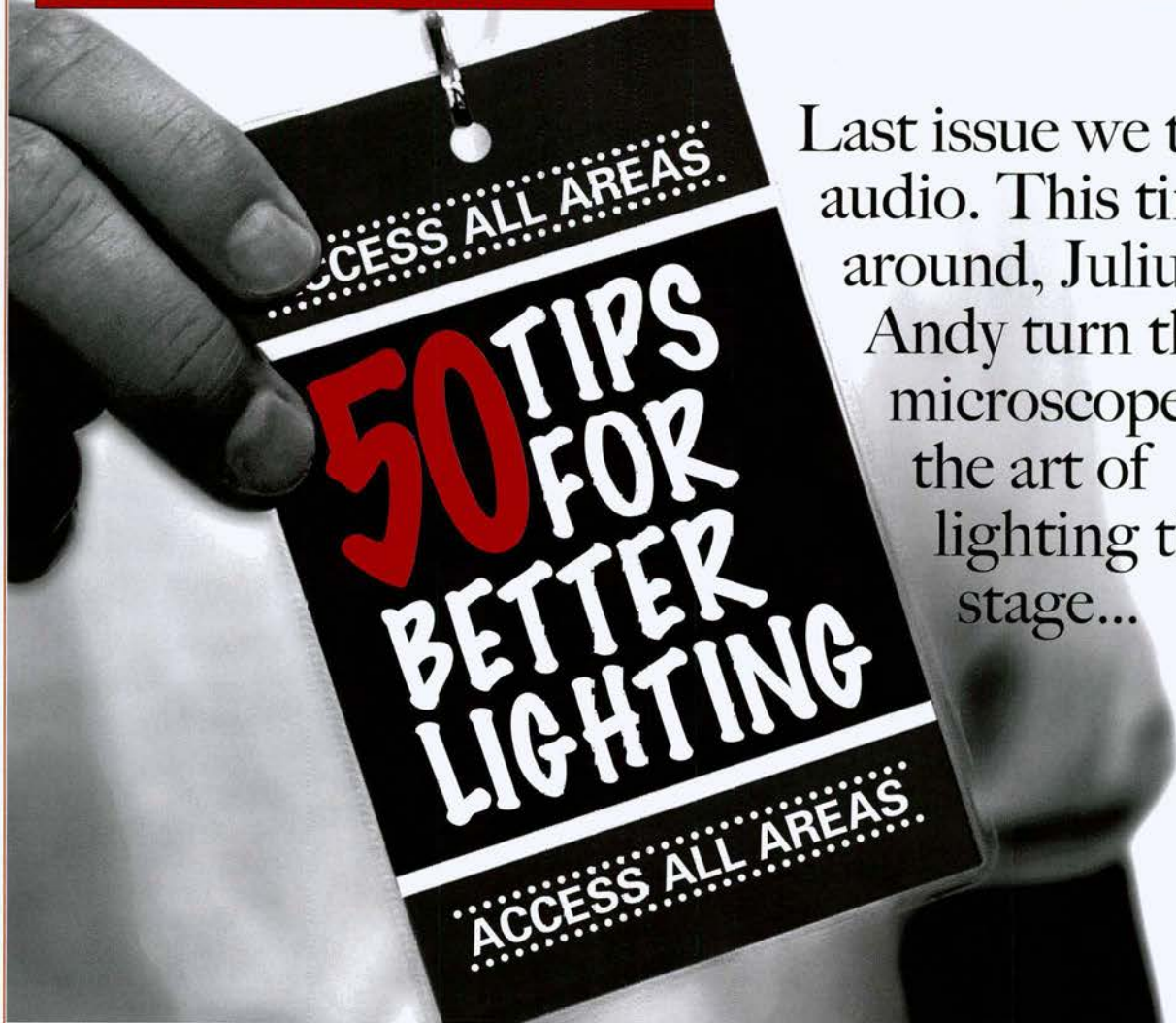
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Last issue we talked audio. This time around, Julius and Andy turn the microscope on the art of lighting the stage...

PEOPLE

Always light people first, sets and effects later. The baseline for any lighting gig is to have coverage of the stage without black holes. If that means one colour wash rather than two, then that's what you have.

MAKE A GRID

Divide the stage into sections, each section is what you can cover with 2 lights. The more sections, the more lights and dimmers. You want to be able to break the stage into controllable zones.



45 X 45

To properly light a subject you need 2 lights out front - 45 degrees up, and 45 degrees either side of centre. The other one is on the opposite side of centre. After a while you'll get used to standing and pointing. If you've got enough gear use a backlight on each area as well, but make sure it's at a steep enough angle not to blind the audience.

2400 WATTS

With our average 240 volt power grid, 2,400 watts will draw 10 amps. This is the rated capacity of a circuit, unless it's a 15 or 20 amp circuit. You need to do head math about your loads: $4 \times 650\text{w lights} = 2,600\text{ watts}$, which you might just get away with depending on the age and tolerances of the breakers. If you're going to overload a circuit like this, try only running the channel to 35 or 90%.

MARK IT UP

Always label both ends of all the cables - that way you give yourself a fair chance when it's troubleshooting time.

FLASH IT OUT

Don't fly the rig until you've checked that everything works. Check the Tag, and plug the thing in and energise the lamp. Do a quick check of the mechanicals - shutters, Fresnel lamp slide, barndoor. It's easier to fix it on the ground than it is to fly it back in.

DON'T LOOK AT THE LIGHTS

When you're calling the focus, look at your shadow instead. You can still see if you're effectively lit, you can see how the spill is going to look and if it's washing out the screen or whatever, and you don't have to go blind in the process.

DO A PATCH SHEET

A proper one that includes all the DMX, dimmer and power information you need. Don't try and figure it out at the gig - it frequently turns out badly. And take it to the gig with you - the best patch sheet in the world is no use if it's sitting at your office when you're on the gig. It's equally useful

when you have it with you, in an electronic form, stuck inside a laptop with a dead battery.

DON'T LEAVE DARK PATCHES

Everywhere you look these days there's someone with a video camera – it's the way of the future. Get the camera people to pan across the stage and check for dark spots, as the camera shows them up much more than the naked eye. If there's a dark spot on the stage, the presenter will stand in it. No idea why. Basic law of nature.

LABEL GELS

Trying to match gel colours by holding them up next to each other is futile and makes you look like an idiot. Just label them properly when you cut the sheet and they'll never give you any trouble.

THINK ABOUT THE SHADOWS

As well as illuminating things, light casts shadows. Think about where the shadows will fall, whether you want them there, and how to eliminate them if you don't.

THE LAWS OF PHYSICS DON'T CHANGE

Light always travels in straight lines, and it keeps going until it hits something. And no, the universe doesn't care how you feel about this. Just accept it and get on with it.

THE DARKER THE COLOUR, THE DARKER THE STAGE

Dark coloured gels absorb a lot of the output of lamps – some of the denser blues let through less than 1% of the light that goes in. If you need to light a stage in a dark colour you're going to need a lot of lights, and you're going to need a lot of replacement gel too, because all the light that's absorbed gets turned into heat and used for burning the colour out.

BALANCE THE PHASES

Get as close as you can to balancing the load across the three phases of your supply. The further out of balance the loading is, the more strain gets placed on the neutral wire and the more likely you are to overload it and burn the place down. Gensets also don't take particularly kindly to unbalanced loads.

LEARN TO LEAVE IT ALONE

There are times when flashing, whirling multicoloured lights are great. And there are times when they are not. Learn to differentiate between the two and know when it's best to just set it and sit on your hands.

SAVE SOME FOR LATER

Don't throw everything you've got at the support band's first song. Try to save the big effects for the headline act, especially towards the end. Come up with something new in each set or your audience will get bored.

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DON'T SMOKE TOO MUCH

Fair enough, smoke and haze show up beams really well, but they also diffuse light all over the place and make it harder to see. I've also seen more than one video recording of an event where everything looked grey and washed out because of all the smoke in the room. Beams can be fun, but there's plenty more to good lighting.

LIGHT AND SHADE

All the lighting systems we use for shows include intensity controls. If we're just going to run things flat out all the time we may as well just use switches. Intensity controls are there for a reason – try it sometime, you might like it.

REMEMBER IT CAN KILL YOU

The thing about lights is that they run on mains voltage, which will kill you as soon as look at you. Make absolutely certain you can't be exposed to live power – in other words, unplug it. Don't rely on the microswitch or the console operator to keep it isolated, they're both capable of failing. Only handle energized equipment when it's absolutely necessary.

SO BE CAREFUL

Don't grab a light to move it until you've ensured it is not live with

active fused to earth. When moving any live light be careful: lights are hot, heat and live wiring are enemies. It could go wrong at any moment..

LIGHT THE AUDIENCE

Some performers and presenters like to see the audience, others don't. If you get the first sort and you don't have audience lighting in place, it will be you they don't want to see again. It's easier to turn it down than it is to rig it midshow.

BUT DON'T BLIND THE AUDIENCE

Audiences don't like being blinded, so think about the angles and intensity of your audience lighting. The only time the audience should get it full in the face is when you've hit the blinders or strobes – and let's be honest, overdoing these will piss your audience off as well.

STAY OFF THE SCREENS

If you spray light all over the projection screens, it is a safe bet that it won't be long before an irate projector guy comes after you, probably armed. These guys get justifiably upset by this – after all, it is someone else's carelessness making them look bad. While you're at it, try not to light the PA either. The audio guys think it's OK, but no-one else really wants to look at it.

BACK UP THE SHOW

All modern lighting consoles give you some way of saving your show – maybe a disk drive, maybe a USB port – doesn't really matter. Use it. Don't be the kind of person who gets left gaping in slack-jawed horror when the console crashes, taking half a day's programming with it. If you're using primarily conventional lights and dimmers, it may be worth writing down levels during the tech run.

OBEDIENT, NOT INTELLIGENT

Just because there's a computer in it doesn't mean it's intelligent. One of the most frustrating things about working with intelligent lights is that they're not intelligent enough to interpret the difference between you giving them a command and you stupidly pressing the wrong button.

SHOWSTOPPERS

Last issue we talked about showstopping buttons on audio consoles. Lighting gear has them too – controls or combinations of controls that can kill your light output or simply turn it into something other than what you want. The problem is that you can't quarantine them the way you do on an audio console, because you probably need them for the show. Just think about what you're about to do before you do it.

MATCH YOUR COLOURS

Especially when using CMY colour mixers. Very few things look as wrong as one mismatched light in a colour wash. And use colour temperature correction if you're combining tungsten and discharge lamps. If you've got vision cameras to deal with, have a look through one to see what effect your colour correction is having.

KEEP IT CLEAN

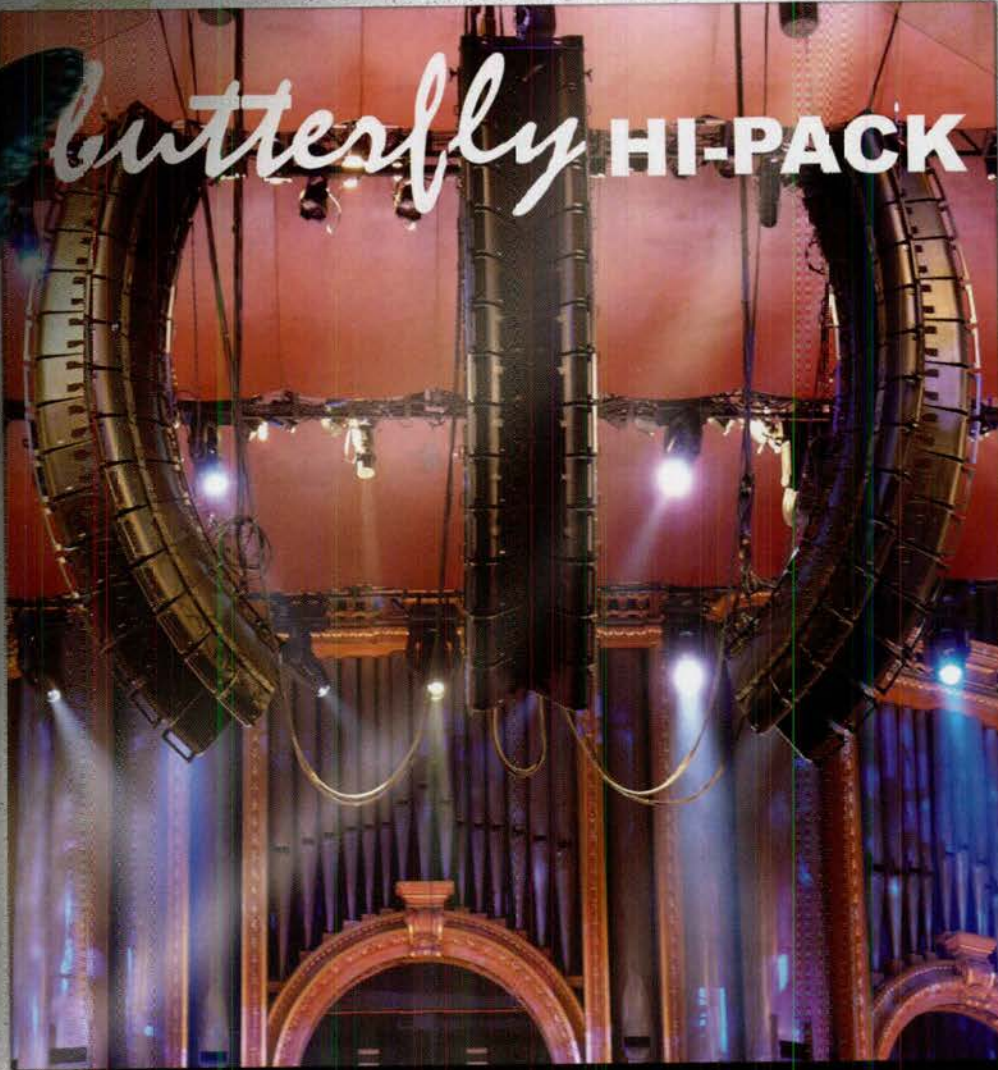
Dirt on lenses stops light getting through. A little bit of dirt blocks a little bit of light, enough dirt will block all of it. I once fixed a venue's 'hasn't worked in years' followspot by taking the lenses out and giving them a good going over with some soapy suds. A tip though – don't use aggressive chemical cleaners or you'll peel the coating off the lenses. If you wouldn't use it on your camera, don't use it on your lights.

WHICH WAY UP?

Make sure you hang lights the right way up. Some lamps like Parcans aren't affected, but if you hang theatre lamps the wrong way up you're going to go through more bubbles. And burn yourself when you



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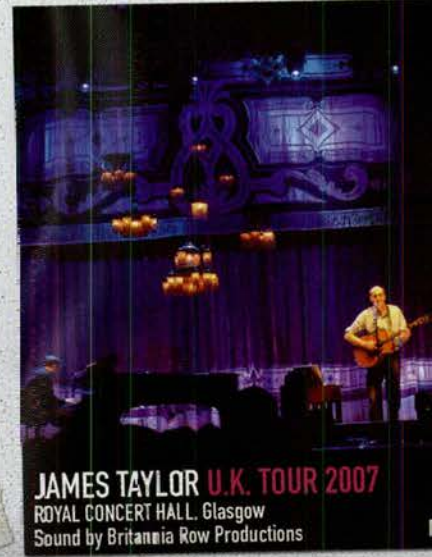


ROYAL ALBERT HALL - LONDON

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try to use the focus knobs on top of the light.

SAFETY IT

Under no circumstances should a light ever be hung up without a safety chain or cable. Make sure this is fixed to a suitable load bearing point, not round the plastic handle of a 40kg moving light. And safety yourself - if you're going up with the lights, make sure you're properly attached. After all, you're more likely to fall off than they are. Harnesses, lanyards, inertia reels and so on are there to keep you alive. Learn to use them and use them properly.

BE CAREFUL WITH THE LAMPS

Most lamps (globes, bubbles) react poorly to oily fingers, so always handle the globe with gloves. Lamps can also explode, so wear goggles or a safety shield when handling them. Discharge lamps (any lamp that has a start circuit) can explode if used beyond rated hours. Always reset lamp timers when changing, and if the show or company has a logbook, keep it up to date.

WHAT WILL IT DO?

Point a 1000 watt Fresnel into an audience and they will squint. A 500 watt Fresnel on a front bar at 15 metres is futile. Know your basics before you start!

COMMUNICATE WITH THE CREATIVES

I know, it's not fun trying to interpret someone's bizarre request for a scene to look 'Thursdayish', but if you don't

delve into what they want, they'll send you back to do it again when you produce something they don't like. Remember, it's their vision.

ERR ON THE SIDE OF CAUTION

If you're not sure you've got enough lights to light the stage effectively, use some more lights. If you're not sure you've got enough power, use lower powered lights. Better safe than sorry.

DON'T FORGET ABOUT HEAT

Pretty much everything involved with lighting makes plenty of heat and there are a few things you should be doing about it. Don't let cables rest against lights or the insulation will melt. Same goes for binding too many cables together and leaving no way for heat to escape. Make sure that vents and fans are clear of obstructions so they can do their job.

COMPLEXION

Surprise pink is your friend when lighting a lectern. Primary green is not suitable for lighting our darker skinned brothers. Think about enhancing the appearance of our on-stage brethren, not making them disappear or look sickly.

WEIGHT

Don't just weigh the lights and the truss - how much will the cables weigh? If the looms are falling 6 metres from the truss, add the weight of the 6 metres as well. Put in an extra chain motor to support the cables if need be.

OOPS

If the curtain is closed, is there worklight on stage? Do your worklights appear on a cue where they are not wanted? And is there a hot button or hot cue you can fall on if something unexpected happens and you need fast light on stage?

BE BOLD

The late and great Roger Barratt used Par 64's at front of house in theatre, and two 5k fresnels out front with barndoors. Why? Just in case a little extra wash was needed to kill shadows. He was prepared to innovate.

LEG WARMERS

As soon as dance enters the script, be ready to light those feet from either side, down low. Sounds easy, but stray wash and shadows are a big deal.

MOOD

Atmosphere is much more important than specification, a great production doesn't care how it is lit as long as all the fundamentals are met. They are spelled out in this article, but remember to work with the director and the scenic designer.

BANG

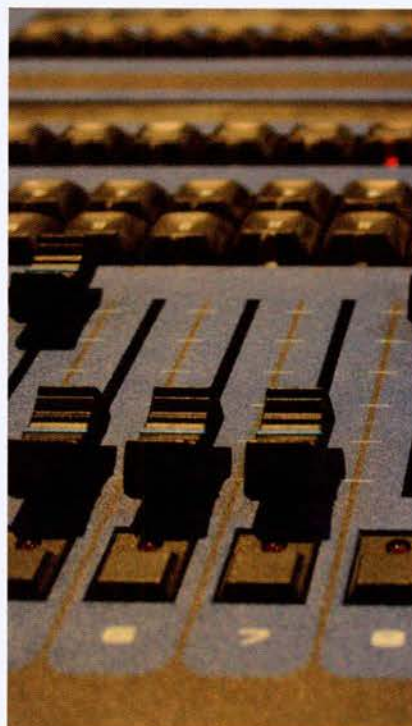
When the circuit breakers fail, how dark is your stage? If you've got follow spots, counsel the operators to go wide if the rig fails. If not, consider some emergency fixtures on a straight power circuit - especially if this is a corporate gig. See below.

CORPS V. AUDIENCES

Audiences boo and hiss and demand refunds when shows go arse up. But corporate clients sue and seek damages plus rude legal costs. Always take all possible precautions, but take extra ones if the gig is for a top 5 bank or law firm!

SPRINKLERS

The spec sheet might say that the



sprinkler head needs 60 degrees direct heat before it discharges 2,000 gallons of rancid water all over the audience, but assume the worst and keep all lights well away from sprinklers.

HEAT PROOF

It isn't. Nor are flame retardant drapes. There have been some terrific fires caused by lights on drapes, and then there is the unedifying scramble of liability. Was the drape treated with retardant properly, or even at all?

ROOF PANELS

Acoustic false roof panels might be Canite or even Polystyrene. They burn bad, and emit toxic fumes while doing so. One light is all it takes, so keep hot stuff away and avoid calamity.

CABLES

When planning a rig think about cable runs, including three phase power feeds. Every hire shop will tell you about frantic calls for more cables, with transport and labour surcharges. On outdoor shows plan to keep cables out of low areas where water can

gather. If the cable has a nick or cut then the area will become live, a condition that can cause you to become dead. Outdoor gigs require a lot of planning.

SPARES

You need enough spare lamps for the rig, and you need to keep them safe and accountable. Lose one and be shocked at the bill. Be clear whether you pay for replacing failed lamps: some rental agreements require this, others do not. While you're at it, put in spares of anything else that might need replacing – fuses are the most obvious thing.

GELS

Did you spec the colour medium you need, and is there a colour frame for every fixture? Nothing looks worse than gaffed gels on front of lights, and the heat will get to the gaff tape eventually as well.

HOOKS

And bolts. And nuts, and shifters. Without them, it's another trip to the rental shop. Lantern bolts are

specialise and are called 'set screws' as they are threaded all the way and plated. Hardware shops do not usually sell them.



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MEET...THE INSTALLER

THE INSTALLER

TALES FROM THE PATCHBAY

Our hero works somewhere in the greater Australia area and is friend and foe to the pushers from whom he buys copious quantities of equipment. Like any addict, he needs to feed his habit, and pleads guilty to lusting after the newest and the best...

TONY THE BUILDER

Installers know the pecking order – the venue owner appoints an architect, then a builder, and somehow the spec goes from what the venue owner needed to what the architect and the builder want. Which is usually a slash and burn exercise as the project costs blow out and the audiovisual is trimmed.

My least favourite builder is Tony Trembles, so named because you do it when he goes off, knowing sometimes someone will get clocked. Then it's police or union or his lawyer to deal with, while the venue owner and architect stand around wringing their hands because the job is late. Better to spit out the tooth and get on with it, since Tony never settles disputes.

Recently we fitted out a club where Tony controlled the tender and after his plasterers had sheeted over all my cables they finished the job by drilling tec screws through the multicore. "Why the f*** was it anywhere near the wall," Tony yelled, unable to comprehend that a stud wall in front of a concrete one left little option. We'd left big notes taped all over the studs, "Careful, cable HERE" but I guess they couldn't read.

Laboriously testing each wire we counted off six balanced lines as ruined, and prayed there were no partially severed legs waiting for atmospheric conditions to go open circuit. We sent Tony a no cost variation that just amended the spec so he couldn't dispute the final payment because there were less audio lines in the multicore. He always challenged the final account.

One thing I learned early in this business is to trust: no one, and to take verbal promises as rhetoric until confirmed.

Some of my day is always spent playing reschedule delivery with the vendors. Some distributors understand contracting. Others change reps without briefing notes, so I get some music shop guy with big hair and a dirty Commodore wagon declaring standard trading terms as he tries to dump seven cartons of stuff I now don't need this month at our reception desk. His commission is a now thing, but his attitude means if we can shift the spec to a more amenable distributor next time then we will.

Worst of all is the rep who doesn't abide by the spirit of historical dealing, and who is absent without return call when I need fast after sales service. The excuse regime only has two chapters with us, then it's new distributor time again.

We are masters of The Switch. That's when the tender says American Loudspeaker and we connive to transform the job into English Loudspeaker – often simply because we can't stand the distributor or the rep. It's not usually a price driven thing, since smart builders and venue owners insist on proof that the switched item costs no less than that specified. Which is why distributor rebates work a treat, since the invoice might say \$19,000 but we will get another 7.5% credit at the end of the month. CX



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I CAN'T HEAR YOU THE MUSIC'S TOO LOUD

The CXpert angries up about things that are just too damn noisy.

... BY JAMES DEN-ouden

Sidebars by Andy Mackenzie

Have you noticed that shows are getting really loud? I have... I don't think I'm a dinosaur since I lack reticulated wings (or something equally archaic), and I know how to make moving lights work. Seriously though, I've been to a lot of events which were louder than they needed to be. Loud to the point where it detracted from the show. I'm not talking about any specific show, or engineer, or venue. I think our whole industry is a bit afflicted with an obsession for bigger and louder. I'm throwing this out there to see if anyone else thinks we have a problem. If you agree with this write in and tell us. If you think I'm wrong, tell me why! But first read the rest of the article!

HOW IT USED TO BE

Back when I started out in production some years ago, 600 watts was a big PA system, and you could cover half a footy field with it. Nowadays a suitable sound system is something which allows 10-15 watts per punter. So 600 watts apparently gets you an audience of 60 people. 600 watts now seems to be more suitable as a rating for a single stage monitor box. So what changed? Lots of things...

Audio gear became better and cheaper. Perhaps not so much cheaper but definitely better, and undeniably louder. We have line arrays, cardioid subwoofers, and single cabinets that are capable of producing peaks of 139db or greater. Modern speaker manufacturers have come up with some awesome equipment in the past few years, and now that such things are more affordable they are becoming more commonplace. It's totally possible to build a PA system which has (for all intents and purposes) a flat frequency response. The tools we use have changed, but why?

Well, shows got bigger. Big scale shows need big audio. Fair enough. The implementation of audio in these forums is not necessarily always best addressed with a conventional approach. Hence we now have line arrays and other such audio wizardry. The cool thing is that lots of these systems can be used in other applications, and will work really well to provide great full-range audio. That's probably why they keep showing up, and people keep asking for them. So what's my problem?

I like music. Perhaps it's my background, but I've always liked to be able to understand what's going on in music, or at the very least hear it. If there's a big dynamic shift, I like to hear a big dynamic shift. If there's a lyric, I like to hear words. Reasonable expectations, so what's my problem? I don't hear this stuff anymore!

WHERE'S THE LOVE GONE?

Nowhere. It's still there, you just can't hear it over everything else. Occasionally there are vocals in the mix, you can hear them when the guitarists and brass section stop playing. Here's a secret. If you can't make the vocals any louder, try making everything else quieter. This works for stage monitors too. Awesome!

Compressors are useful in the right application, and like most things in this world they have their place. System compressors inserted over the master bus are, I think, less useful than having a good mix to start with. A big PA system will be able to accommodate dynamic transients standing on its head. Sure, having a mix which varies no more than 6db in level is nice and predictable, but it's not very engaging. Moreover

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CAN YOU REALLY MAKE YOUR EARS BLEED?

It's theoretically possible to make your ears bleed as a result of extreme sound pressure levels, but you're unlikely to ever see it. The information I've been able to find suggests that your eardrums would start to tear loose from their mountings at about 190dB, and it seems reasonable to expect that this would cause bleeding – but you'd be unlikely to notice with everything else going on. Let's have a quick look at the probable effects on your body of exposure to that kind of SPL. Your ears will already be causing enormous pain and will almost certainly have shut down permanently. You will be experiencing a great deal of difficulty breathing as a result of the dramatic changes in air pressure around your chest and throat, while the same changes in pressure cause violent nausea. Assuming you're still alive (which you might be) and conscious (which you won't) your vision will be so blurred as to be useless as a result of the vibration of your eyes. You're very close to death. And if you were in a building when this started, it's almost certainly collapsed on you.

excessive compression makes music really fatiguing to listen to. The moral? Be subtle! If the band wants to get quiet, let them. If the act is any good the audience will be listening.

There is a difference between sound reproduction and sound reinforcement. Reproduction is good for when you can't hear the snare drum from the back of the room. Anything less than that is reinforcement. A simple approach to this is to have the band play a song, and put into the mix only the things you can't naturally hear coming off stage already.

WHAT ELSE HAS CHANGED?

People expect better sound. JBL published a paper on "business music" (which is worth a read –

jbipro.com). They pointed out that as the quality of domestic equipment has increased and the prices have decreased, consumer expectations of audio quality are higher than they once were. True. I don't remember reading anything about expectations of volume levels being louder. So why have shows become so much louder? I know at least one operator who prides himself on how loud he can mix. Let's not forget also that the accuracy of modern speaker systems really does show up a bad mix awfully fast. Is the sheer volume to compensate for something else?

Australia has rules about how much noise is considered "safe" for a workplace. The ruling is basically that 85db, A-weighted for 8 hours is considered acceptable exposure. Every 3db over this halves the safe exposure time, and peaks should not exceed 140db C-weighted. The U.S. Department of Labor's Occupational Health and Safety Administration website (www.ohsa.gov) tells us that the US basically follows the same rules. The SafeWork SA website (www.safework.sa.gov.au) has some fantastic information relating to noise safely, and is worth a visit.

85dbA for reference is about the amount of noise a domestic vacuum cleaner makes. I can't remember the last show I saw which was quieter than a vacuum cleaner, or even close to it.

So if the noise levels our shows run at are deemed unsafe to work in, does the fact that you're an audience member at the event magically remove the danger of hearing loss? Er, no. It may lessen it slightly but

that's where the magic ends. I realised just how much commonsense some punters have the night I had to ask one to remove himself and his six month old infant from directly in front of a speaker stack one new years eve...

Consider that a band might play for an hour, then add another hour for a support band. Assuming the punters haven't been using chainsaws or other noisy equipment all day, one could allow average an SPL of 91dbA over the two hours they are there to see the show. At an all-day festival though, this figure drops! How about the crew's exposure to noise when you include a few hours of soundcheck? You do the math... After all, hearing damage is a function of noise level and time.

MY MATE DRIBBLES, AND A HEARING TEST

I wanted to find out the effects of being in noisy shows for prolonged periods of time with and without hearing protection, so one fine sunny afternoon I dragged my mate Dribbles out to Northside Audiology in Chatswood, and we had our hearing tested.

I'm pretty careful with my ears nowadays, and for the large part I have worked on relatively quiet events. I've been using hearing protection ever since I felt the need to. Dribbles (whose real name is also James, which just gets confusing) has been hitting clubs and shows ever since he was big enough, but mostly without any hearing protection. He has only recently started using earplugs when he's in a



Dribbles having his hearing test done. Clubbers are such shabby creatures.



While she was there, we asked Valerie to check on Dribbles' brain.

noisy environment.

The hearing test was a relatively simple process. We were introduced to Valerie Smaller, who was our audiologist for the day. The test itself was broken up into several parts. Initially there were some questions relating to medical history, followed by a visual examination of our ears. Then Valerie tested the impedance of our ears, assessing the movement of the eardrum, and checking for fluid or congestion. Following this we donned headphones and listened for a series of tones at varying frequencies and volume levels. The basic gist was "push the button when you hear the beep". This was followed by a speech intelligibility test, which involved repeating words we heard. All up the test took about 15 minutes, and didn't hurt a bit.

THE RESULTS

I always suspected he was going deaf, but it seems Dribbles has just been ignoring me, since it turns out our hearing abilities are basically the same. We're both within the bounds of normality. If you care to get critical about it, I'm a little down in my right ear at high frequencies. Dribbles has a sharp dip around 4KHz in his left ear, and overall my ears are slightly closer matched to each other than his are. In any case, Valerie explained that as long as we're both above the 20db line on the tone audiometer graph, our test results are considered within normal limits.

Valerie explained that noise induced hearing loss usually centres on or around 4KHz, which is the frequency range within which we hear distinction between sounds like "s" and "t". This might ring a few alarm bells for Dribbles – age 19 and his left ear is weak at this frequency. She also explained that in addition to noise related hearing loss, age related hearing loss will compound the problem. The effects of each add together, so in other words noise related damage may not show up for 30 or 40 years. But it will eventually.

So Dribbles hears about as well as I do now – borderline average. Consider now that I'm a good 10 years older than he is, and whether his hearing likely to be just as good in 10 years time. Julius has offered to



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HOW LOUD CAN THINGS GET?

It's impossible to generate an SPL in excess of about 194dB without atmospheric distortion. Essentially, all the air particles in the atmosphere are pushed into the compression waves, leaving vacuum in between. This means that while the highest pressures may increase, there's no way the lowest pressures can decrease – leading to an effect similar to clipping.

Beyond this level, sound waves are defined as shock waves, but things still make them. Space vehicle launches tend to go above about 215dB, as do earthquakes and big explosive devices.

By the time you get to 250dB, there's nothing left but nuclear explosions, meteor strikes and enormous volcanic eruptions.

The loudest thing ever?

It's kind of hard to tell. If the 'dinosaurs were killed by a big meteor' crowd are right, you'd have to think that was a contender.

Strangely though, no-one recorded the event. The general consensus seems to be that the single loudest noise in recorded history was the eruption of Krakatau in Indonesia in 1883. While there's little empirical data on this one, anecdotal evidence tells of it being heard up to 5000km away and breaking windows in Australia. Engineers at NASA lay claim to the loudest noise ever produced just for the sake of making a noise, measured at 210dB, in an Alabama lab in 1965. Who knows why?



Crunch time! Valerie explains the results.

submit his ears for the same test, and natural d'sasters pending we'll include his results next issue.

THE CXPART ASKS SOME QUESTIONS

At the conclusion of our hearing tests, we were joined by Audiometrist Steve Reinhardt (who is also a musician). I asked him and Valerie some questions:

Is high frequency or low frequency more damaging to our hearing? The

answer is it's all bad. Overall too much level over too long a period will cause damage. While our regulations state that 85 dbA is acceptable over an 8 hour period, this limit doesn't actually guarantee that no hearing loss will occur.

Does how loud we perceive a sound to be indicate how much damage it's doing? Not necessarily. When we are exposed to prolonged periods of loud noise, our ears undergo a temporary threshold shift. This is when the haircells in the cochlea become bent and less affected by sound. In the case of a temporary threshold shift, these haircells will return to normal over time. In the case of hearing damage, the haircells die. The outer haircells are the ones which receive high frequencies, which is why they exhibit the first signs of damage.

What steps could be taken in a production environment to minimise or eliminate noise related hearing damage? For musicians on stage, in-ear monitors are a good step since they have a couple of benefits; they isolate external noise, they eliminate the need for foldback on stage (so you're not fighting against stage

sound out at front of house), and generally speaking they don't feedback. Don't mic up things which are loud enough already (like drumkits). Turn down front of house speakers. Basically keeping the volume down is the best thing you can do.

What's the message we get when we leave a show and our ears are ringing? It's called tinnitus and it indicates that a threshold shift has occurred within your ears. It's your body telling you that it's been damaged! Even wearing hearing protection doesn't guarantee no damage will occur, but it's a good start to minimising it.

THE BUCK STOPS HERE

Ultimately as experienced audio operators who are skilled at our craft, we have control over how loud our events run. Bands can ask for more louder monitors, we can say no. Punters can ask for louder shows, we can tell them it's loud enough. Promoters can threaten to fire us, we can remind them we are obliged to comply with work safety practices. We as a whole may not be to blame, but we do have the scope to address the problem. If you're responsible for mixing front of house audio, get your ears tested. Get a noise meter, learn about it, and use it.

WHAT'S THE SOLUTION?

Well the bloody obvious solution would be "turn it down". If people ask you why, tell them "because it was too loud". Tell them you don't want to be yelling at everyone to be understood 40 years from now. The punters at a gig are the ones who are paying your wage, so damaging their hearing not only hurts them, but ultimately us as well!

In situations where noise is unavoidable, the next best step to minimising hearing damage comes in the form of hearing protection (this is about where the story stops looking like a tirade and starts to resemble the normal CXpert thing). Hearing protection comes in a few different flavours, and a few examples of each are listed below. Employers in most states are obliged to supply their staff with suitable hearing protection for the tasks in which they are engaged. Protection that is inappropriate is less likely to be worn as it may interfere with the employee's ability to do their



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job. Another point relating to the use of protection is that availability is only part of the equation. Correct fitting and usage is just as important – without this the device will be less effective. Some manufacturers either supply fitting instructions, or have them available on their websites. Hearing protection devices should carry a rating, which tells you how much they attenuate external noise.

Truth be told, the whole rating system is a bit of a jungle. Different devices are rated on different scales and will respond in a variety of ways across the frequency range. NRR (noise reduction rating) though common is a standard which was devised some decades ago, and looks to be superseded in the near future. Small differences in NRR (4-5db) are largely inconsequential, and the standard should be viewed more as a guideline for categorising hearing protection devices (HPDs). Note also that the NRR is dependant on the HPD being correctly inserted or worn! Australia has a similar thing to NRR called the class system, whereby HPDs can be classified into one of 5 classes. The system is designed to make selection of HPDs an easier

CLASS	EQUIVALENT NRR	FOR USE IN NOISE
1	10-13	Less than 90 dB(A)
2	14-17	90 to less than 95 dB(A)
3	18-21	95 to less than 100 dB(A)
4	22-25	100 to less than 105 dB(A)
5	26 or greater	105 to less than 110 dB(A)

process.

Great, so long as the manufacturer provides the data. At the end of the day, the right hearing protection device is the one which provides the

required level of noise reduction. When selecting the type of protection most suited to your needs, it's important to consider how much attenuation you actually need. Insufficient attenuation will render the device less effective, whereas too much may impede communication or the ability to hear other sounds (such as the rest of the orchestra). There are a plethora of hearing protection devices available, and following are just a couple of examples of what's out there. As always, check out your options!

SINGLE USE EARPLUGS

First cab off the rank is single use earplugs. Cheap and cheerful, "roll-down" foam earplugs will provide anything up to around 30db of attenuation. Foam earplugs are commonly available in bulk packs of individually wrapped pairs, and as such are probably a good choice to have on hand for punters who request such. Foamies will normally provide more attenuation at high frequencies, so they can affect the ability to understand speech. That said, they will go a long way toward minimising noise related hearing loss



E-A-R E-Z-Fit Plugs

encountered when you're standing in the mosh pit right in front of a PA stack.

- E-A-R E-Z-Fit Plugs are made of self adjusting foam, which achieves a balance of pressure on the ear and attenuation. The dermatologically safe foam is non-irritating to skin, and the plugs have a NRR of 28db.
- E-A-R Express® Pod Plugs with Blue Grips have slow recovery foam to make insertion easy. The grips eliminate the fear of hand to ear infection, and they have a NRR



E-A-R Express Pod Plugs with Blue Grips

of 25db.

Check them out at www.e-a-r.com, where you'll also find a stack of great information relating to noise, hearing protection, and how to make the right choice.

- Bilsom X-treme 32 ear plugs are listed as the highest attenuation earplug on the market, being a class 5 device. They're available in packs of 200 pairs for around \$50 + GST. Also available is a corded option so you don't drop them on the ground. Data is available at <http://www.sperian.com.au/hear.htm>, and the plugs themselves are available through Australian Safety Equipment (www.safetysafetyequipment.com.au).

THE SIGNIFICANT LEGAL ISSUES...

Worldwide there have been a number of lawsuits brought to court alleging that various persons have caused permanent hearing damage to assorted other persons and thus far none of them have been successful – because it's difficult to prove exactly when the hearing damage occurred. In areas like Australia where duty of care is a legislated requirement, there is the possibility that a criminal prosecution could be made on the grounds that a venue operator, audio operator, concert

promoter or other responsible person failed to take reasonable steps to ensure the safety of workers and audience at an event. This would not require proof of injury – just proof that the person failed to practice due diligence. A case like this could get shuffled around the courts for some time before a verdict came down, but once a precedent was set it seems reasonable to expect a lot more cases. Just think about what happened with the asbestos and tobacco industries.

MULTIPLE USE EARPLUGS

Multiple use earplugs are the next step up in the foodchain so far as quality goes. These units tend to provide a flatter attenuation across the frequency range, but the amount of attenuation can be less than a foam plug. Multiple use attenuators are well suited to areas where noise levels are high but not extreme. Costing between \$20 and \$50, they are a reasonable choice for employers who want to provide their staff something more practical than a foam plug. Given the lower attenuation, these HPDs would be good for

example, for bar staff as they would provide protection while still allowing them to understand drinks orders.

- Etymotic Research ER•20's (or Ety-Plugs) are designed to provide flat attenuation. In other words, you could probably still pull a decent mix while wearing them. The NRR for ER•20s is 12 dB, but actual clinical measurements of properly



Etymotic Research ER.20 Plugs

inserted ER•20s indicate that these earplugs provide almost equal sound reduction (20 dB) at all frequencies in real ears. Data at www.etymotic.com, and the Australian distributor is Vistra Systems (www.vistra.com.au).

CUSTOM MOULDS

Custom moulds are the next step

in attenuation, and the target market for these seems to be musicians. These units require a mould to be taken of your ear canal by an audiologist or audiometrist. From this mould a custom plug is then constructed. Commonly these are available with differing levels of attenuation; 9, 10, 15 or 25db, or in a solid unit. Custom moulds often provide a flatter frequency response than a foam plug would, but with the option for higher levels of attenuation than a universal plug will provide. Cost ranges between about \$160 and \$250, and they usually take a few weeks from moulding to finished product. They'll only ever work in the ears of the person they're made for, but they'll work well.



GN Resound Hearsavers

DO IT RIGHT!

All the hearing protection in the world's not worth a bent penny if you don't use it properly. Here's a bit of a tip – talk to yourself and listen to the sound of your voice (people may look at you funny, but don't let that stop you. Sing if you'd prefer – it doesn't really matter). Now put your hearing protection on/ir. The sound of your voice should change dramatically as you are no longer hearing it coming in from outside – just bouncing around inside your head. If you don't hear a significant change in tone, the safety gear hasn't sealed properly and it won't do anything to protect you.

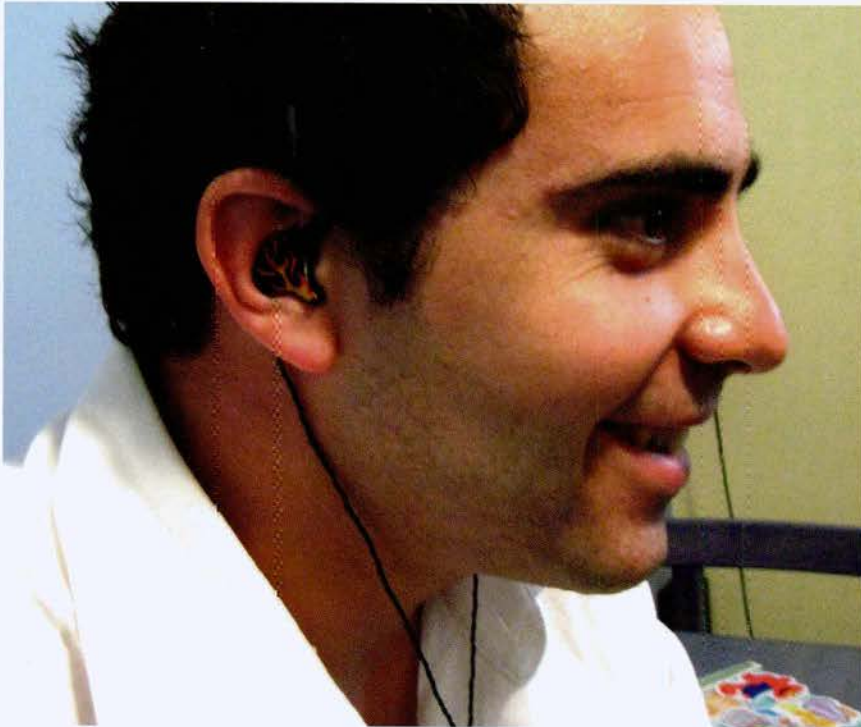


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Crunch time! Valerie explains the results.

- Hear-savers and musician's hear-savers are such products, and they're available with several different levels of attenuation. GN Resound is the manufacturer. Solid Hearsavers will set you back around \$150, and Musician's Hearsavers start at \$160. Excellence in Hearing (eih.com.au) can provide you more information.

Custom moulds are available with drivers built into them, and these are commonly used for in-ear monitors. Ranging between the high hundreds and low thousands of dollars, you have a choice of one, two, or three drivers. Two drivers seems to be popular since it provides a nice full-range sound, and while three-way devices are considered to sound better they don't fit in everyone's ears.

- Westone make custom moulded in-ear monitors to suit musicians. The ES-2 is a dual-driver model and provides 25db average acoustic separation. Starting at around the \$1200 mark, these units also feature replaceable cables.
- GN ReSound make custom moulds to suit Shure E series in-ear monitor systems – see www.gnresound.com.au or www.jands.com.au for more info.

EAR MUFFS

Like headphones, but they're designed to stop the noise getting to your ears. Though hailing from the

building industry, there may yet be a place for ear muffs in live production. Because of the design these are much quicker to put on and take off than an in-ear device, though the style of attenuation would tend to make communication very difficult when using muffs. Often the attenuation is less than can be achieved with a good set of plugs, though these would perhaps be a practical choice of HPD for use during soundchecks owing to the random intervals at which noise occurs.

Unisafe Universal Orange Earmuffs are an SLC80 Class 5 device, providing up to 29db of attenuation. At around \$20, they won't break the bank and will provide effective protection which goes on and comes off quickly. High visibility makes them easy to find quickly. Signature III Wire Neck Band Earmuffs are worn around the neck rather than over the head, and provide the same level of protection (SLC80 Class 5). They sell

Unisafe Orange Universal Earmuffs



CAN A SOPRANO REALLY BREAK A WINEGLASS WITH HER VOICE?

Maybe. But if she did, it would be a result of her hitting the note that caused the glass to resonate, not raw SPL. Glass is pretty tough stuff and if it was that easy to break with SPL alone the nightclubs of the world would go broke replacing all their windows every day.



for \$30.50 Both available through Australian Safety Equipment (www.safetysafetyequipment.com.au).

DOUBLE PROTECTION

Ear plugs and ear muffs – usually deployed in environments where there is an extremely high level of machine noise. Like mines. This level of protection may be required if you're a system tech and you find yourself parked directly behind a huge PA stack for 12 hours or similar. If it's loud enough to need double protection out front, then you've got bigger problems than protecting your own ears.

THE MORAL

With power comes responsibility. Ultimately hearing protection devices can only do so much to protect your hearing, and even less to protect that of your punters. Hearing protection devices are useful as a secondary method of minimising noise related hearing damage, but really the best choice is to keep the levels under control to start with. Chances are your show will sound better anyway!



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ON TOUR



IRON MAIDEN

Somewhere back in time... By ANDY MACKENZIE

Iron Maiden have been here before, but it was a long time ago. For fifteen years, fans have been muttering, rumours have flared and been extinguished, online petitions signed and sent. But the wait is over. The current tour revisits the glory days of the eighties, when the legend was built.

In 1984 Iron Maiden were at their peak, and the 1984-85 World Slavery tour burned itself into the collective memory of the world's headbangers as the definitive Iron Maiden show. So it's no real surprise that when the band's thoughts turned retrospective that was the tour that came to mind, and that was the show that inspired the new one. The Egyptian themed sets are similar, though not quite the same – the enormous backdrop showing album cover and poster art was never there in the original, and some of the more preposterously large set pieces have gone – but the derivation is completely clear.

But there have been a lot of changes in technology since 1985. Last time, the PA was a staggeringly huge mass of (I think) Turbosound TMS-3 boxes flown in giant clusters that blocked out the sun and big piles of 24 inch horn loaded subs. The lighting rig was custom trussing carrying about a gazillion parcans, augmented by followspots. The only lights that moved were followspots (which only moved if you pushed them) and the words 'line' and 'array' were never seen in the same sentence.

So what would we see this time?

The first thing that demands attention is the way they chose to run this tour. In the past, Iron Maiden tours have taken the whole lot with them everywhere they went. That's right. The WHOLE LOT. Presumably including the kitchen sink. This time, at least for the first stage of the tour, everything had to fit on...the plane. And while the plane is a very nice plane, it's still not big enough to let everybody take everything they want. This is presumably the reason for the set being smaller and involving more soft elements (the kind that you can roll up small for transport) and it's the reason FOH guy Doug Hall toured a digital console.

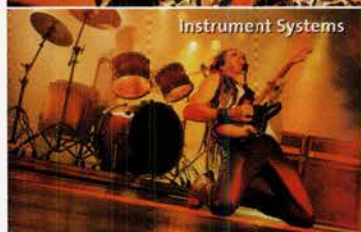
DOUG'S DIGITAL DESK

In the past Doug has always been an analogue console guy, but the size of an analogue console and the associated racks made that a no-go. So off he went to look for a suitable digital console, and ended up with the Soundcraft Vi6. The Vi6 uses a system of touch-screen colour-coded TFT monitors with rotary controls and switches built in and around the glass

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From the side.

to make visibility and access to console functions simple and quick. Ease of use and intuitivity of operation are two features of digital consoles that are starting to be seen as more and more significant – loads of functions is no longer enough.

The Vis was only used for the main act – the supports were mixed on a Midas Venice with a typical nest of outboard gear hooked up to it.

FOH PA

Given the plane factor, it's obvious that the PA isn't going to tour with the band. Even with modern technology replacing the old turkeys, it's still too big by a factor of lots, so they're picking up local production throughout the 'plane leg' of the tour. EAW is the speaker brand of choice, and Norwest Productions were selected to supply

the audio for the Australian shows. Ewan McDonald, the Norwest system engineer, was kind enough to talk me through the system.

There are two main arrays to cover the central part of the venue. Each of these consists of fourteen KF760s and two KF761s doing downfill. All this was powered by sixteen Lab Gruppen FP 6400s. In addition to the main hangs each side had an outer hang, to cover the seats out to the sides, consisting of six KF760s and four KF730s (the KF730s were replaced with KF761s in Sydney to cater for the longer throw). Each side was powered by another ten FP6400s. Yet more FP6400s powered the twelve SB1000 subs stacked up on each side.

Four pairs of KF650s provided front fill – a pair on each sub stack fed from the main left and right signal and two pairs in the front of the stage fed from a vocal submix. Apparently when you're right in front of the stage you can pretty much hear everything else...

All this hardware demands some serious control to get the best out of it, and less than the best is not good enough these days. All the crossover tasks were performed by the new EAW UX8800 processors with Guinness focussing and Ewan tells me that the system sounds good straight out of the box and doesn't require a lot of tweaking, which is a good thing since a tight schedule and complex set building operations aren't usually conducive to the audio guys getting all afternoon to mess about. FOH drive and EQ was managed by one Dolby Lake Processor for each side, controlled by a wireless tablet. The signal went analogue into the Dolby



FOH computer control.

Lake Processors then went out to the UX8800s as AES/EBU digital.

Continuing the celebration of all that technology has to offer, Ewan used a MOTU Traveler firewire interface and EAW Smart 6 for Mac as well as a lesser known Mac software package called Fuzzmeasure, which he says is great for looking at impulse responses from the PA, to time align and tune.

MONITORS

In the spirit of travelling back in time, vocalist Bruce Dickinson brought his own wedges with him on the plane, and they appear to date back to the late bakelite era. Apparently he's been using them for a long time, and he likes them. I didn't listen to them myself, but I'm reliably informed that they sound as big as they look.

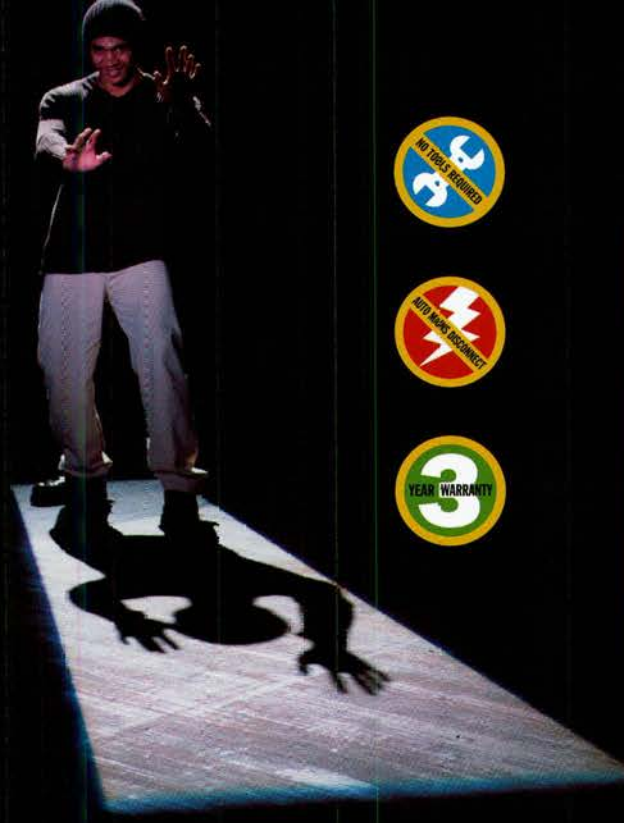
Drummer Nicko McBrain brought his own monitors too, but he failed to really get into the spirit of things and brought new ones. Since 2005, when he first tried them in a trade show showcase, he's been a habitual HK Audio user. His drum-fill is built out of ConTour CT112 mid/high boxes and the formidable SL218 sub – a 2 x 18" self-powered unit carrying its own 2 x 1000W class D power amp. The whole lot is controlled by an HK DSM2030 controller and Lab Gruppen FP3400 amps provide the impetus for the mid/high boxes.

The remainder of the monitor system was dominated by sidefill. Underneath the risers on each side of the stage is a collection of EAW boxes that should make a brave performer tremble. On each side, there were three separate sends to the sidefill. The first provided a general band mix

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Lotsa Lab Gruppen.



Foldback.

through a pair of KF750s, the second went to three KF850s used for vocals. The three 850s were next to each other with one of the 750s to each side. Next to this on the downstage side were two more KF750s on the third send. These did a full mix with a strong emphasis on guitar solos. Amplifier selection for this lot was more Lab Gruppen – eight 10 000Qs and it was controlled by XTA226 processors.

Four more Lab Gruppen 10 000Qs with two XTA 428 processors powered eight Adamson M15 wedges. Six of these were spread over four sends on the front line while the remaining two were used as cue wedges. And just in case that wasn't enough, there was a pair of EAW SM2C0s on each of the

side ramps and another pair on the upstage riser. These were all powered by four Crown 2402 amplifiers using internal Pip cards for processing.

Iron Maiden monitor guy Steve 'Gonzo' Smith piloted this collection using a Digico D5, while the supports were mixed from a Yamaha M7CL.

LIGHTING

At about this point, some readers will be slavering over the possibilities of lighting a show like this, and fair enough after all the talk about the audio spec. Bytecraft entertainment supplied the lighting, and a quick look at the pictures will tell you just about all there is to know about the lighting – trussing carrying about a gazillion parcans, augmented by fellowspots.

Which is only to be expected really. If you're trying to recreate the look and feel of an eighties concert tour, parcans are what you use. There are some movers in there but the rig is predominantly parcans where most current tours are going the other way and using predominantly movers, and the actual show is mostly big strong static looks rather than moving states.

And the light show has got a favourable response from the audiences I liked the look of it, but I'm old and set in my ways, so I thought it would be fairer to ask some of the young folk who went to the show. Everyone I spoke to thought the lights added to the show and many commented that it was nice to see something different because too many concerts looked the same.

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AND DON'T THE KIDS LOVE IT

The most recent song on the set list for this tour dates back to 1992 – so a lot of the people in the audience probably weren't born in time to have been there for the original releases. By the time they reached concert going age, the modern era of moving lights and stadium seating was well established. But they're all going bonkers anyway.

It just proves the point that a good show is a good show, however you dress it up. CX

THE AUDIO CREW

NORWEST PRODUCTIONS

Ewan McDonald - FOH Systems Engineer/Crew Chief

Antonio Calvi - PA Rigger/Monitor systems engineer

Gary "Gus" Oberg - PA Rigger/system engineer

IRON MAIDEN TOURING CREW

Doug Hall - Iron Maiden FOH engineer

"Squid" (Real name unknown!) - Iron Maiden

System Tech

Steve "Gonzo" Smith - Iron Maiden monitor engineer



Norwest crew with plane

FLIGHT 666 – ED FORCE 1

Iron Maiden lead singer Bruce Dickinson has a day job in between tours - as an airline captain. This incongruous double life means the band can travel in their own chartered 757 jet, flown by the lead singer and a first officer. Making the Australian leg of their world tour that much more comfortable.

The 757 itself is uniquely modified as a comci, meaning freight and passengers can be carried. With five 100kg pallets at the back of the passenger deck, plus underbody freight capacity the bands crew, backline and principal set pieces travel with them.

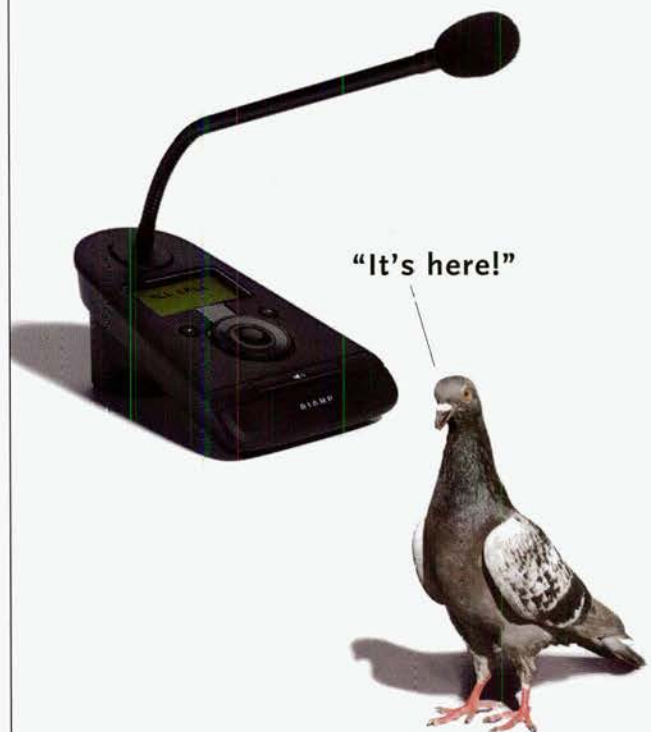
With 21 cities to play in 45 days on this leg of the tour, the do it yourself flight schedule of a charter is the only way to make the tour work. The aircraft came from Dickinson's employer, Astraus Airlines, and he took leave from them to do the tour.

While a 757 normally seats 200, the Iron Maiden entourage numbers around 70 leaving freight capacity of around 12 tonnes. It is the first aircraft of its type to be converted for part passenger, part freight.

On a different scale but with similar convenience, James Morrison and his brother have for years flown their band around Australia in their own eight seat Piper Navaho aircraft. In common with Dickinson, this means no booze for the pilot, so expect these muso's to outlive most of the rest of us

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HOW TO MAKE A LIVE RECORDING

Every live sound engineer in the business has been asked at some point in their career to record the gig they're working on. There are easy ways, hard ways, cheap ways and expensive ways to do it, and they'll all give different outcomes. Andy Mackenzie takes a look at a bunch of different tactics.



One of the trickiest questions facing the person asked to record the gig is "What are they planning to do with this?" In many cases the band just want something to listen to at rehearsal before they start blaming each other, in which case you don't need to break your heart over issues of sound quality. In other cases, they've conceived it as a way of making extra money by selling the recording in which case you:

- a) Don't want to miss out on your share – you've got to eat too, and
- b) Don't want your name and reputation connected with something that sounds woeful because you thought it was a rehearsal tape.

And then there's the even nastier possibility – that someone in the band with a very limited understanding of how sound reinforcement actually works has come up with the cunning idea of using this as a way of checking the quality of your mix. I've known

this to happen and there was a fair bit of unhappiness shared around before the dust settled.

When someone says "Oh, and by the way, can you record the gig for us?", make sure you know what they want it for, and make sure they know what they're going to get.

SUPER SIMPLE

The easiest way to record the act is to send the same thing that's going to the PA to the recorder, and just about every console on the market offers a way to do this (I can't actually think of a single one that doesn't, but I may as well keep myself covered). Many smaller, lower priced consoles are fitted with 'record outs' – frequently using RCA connectors which interface well with recording devices in the same market sector.

Others have two sets of output connectors – TRS jack and XLR, usually – which are connected in parallel. In the olden days this would have been a big no-no for reasons of

impedance matching, but with modern gear you can usually get away with using one set of connectors for the PA and the other for the recorder as long as you don't unbalance the line. Unbalancing the line leaves you open to a whole host of noise and earthing problems, so it's usually not worth it.

Great big analogue production consoles tend to have anything up to half a dozen extra LR outputs, frequently with separate level controls, which can be handy. Digital consoles allow you to assign anything anywhere in any case, so it shouldn't be an issue to route the LR output to an extra pair of connectors.

This strategy works quite well for some things, and incredibly badly for others. You'd probably go OK with a string quartet, since all the instruments produce about the same amount of sound and all need about the same gain through the console. On the other hand, if you're mixing Blisterthroat Bob and the Berserk

Assassins in a concrete bunker somewhere it's a fair chance that poor Bob's vocals are going to be getting a lot more push through the desk than the guitars. Ever heard one of those bootleg live recordings where the vocals and kick drum overwhelm everything else and you're struggling to hear any guitars at all? Now you know what happened.

MAKING IT BETTER

If the super simple option isn't going to do it for you, you can step it up a bit without having to spend any more dollars, but it is going to cost you some work. Ideally you need to be able to send a mix to the recorder which is different to the one going to the PA, and there are a couple of ways to do this.

The least labour intensive is to connect the recorder to a stereo pair of matrix outputs and feed the matrix from the subgroups. If you've used your subgroups in a logical way, this will give you level controls for the different instrument and vocal submixes – you can't turn up just the snare drum on the record, but you can alter the overall balance between the

drums and the brass section. In a lot of applications you can get a reasonable result out of this.

If you're looking for a bit more control or your desk doesn't offer you the option of using a matrix, you can fall back on the auxiliary section. Using a single auxiliary send will get you a mono recording, but it will mean you have independent control of the mix going to the recorder. If you can afford two auxiliaries, or a single stereo one, you're back to a stereo recording. Using pre-fade sends will give you totally independent control, but means more work than using post-fade sends which will follow the changes in your front of house mix.

The big negative about both these options is that it's extremely difficult to hear what you're doing. Little monitor speakers are unlikely to be loud enough, and if they are they'll probably lead you to stuff up your live mix. Headphones offer a little isolation from the noisy world around you, but too little to allow you to be really confident. The people who get the best results out of these techniques are usually pretty adept at interpreting what they're seeing on the meters.



VALE THE CASSETTE

Before the demise of the audio cassette, it used to be much more common to get asked to make a tape at the gig rather than having it organised beforehand. I got asked often enough that I just left the record leads connected to the back of the tape deck in case I needed them, and I suspect I wasn't the only one. Since CD took over, most people's racks only have a playback device in them so anyone wanting a recording better phone ahead. This is nice. Two minutes before the set starts is not the ideal time to spring surprise requirements on the engineer.



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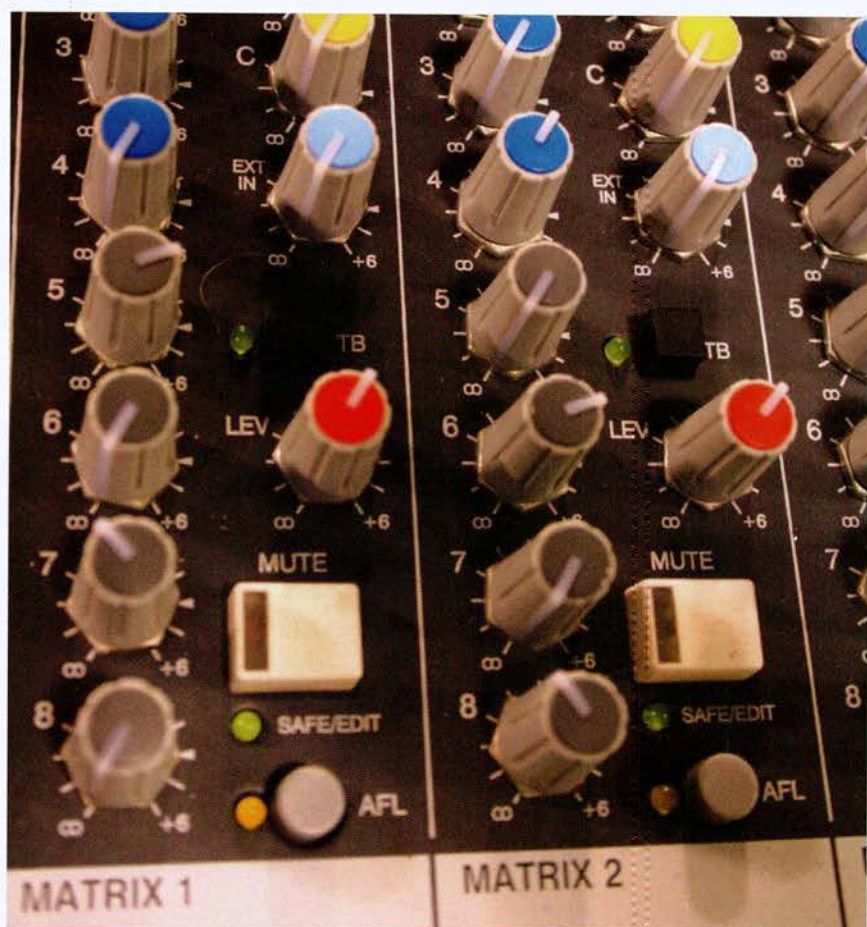
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A typical large format analogue console has no shortage of cutputs.



Matrix 1 feeds left, matrix 2 feeds right - stereo mix complete.

Nevertheless, either of these options represents a significant improvement on plan A.

SAVE IT FOR LATER

So far, the tough bit hasn't been getting something recorded, it's been getting something recorded with enough quality to be worth recording. The easiest way to avoid the problem of having to mix a stereo recording in exactly the wrong environment and conditions is simply not to do it. If you

can capture the audio in a multitrack format, you can mix it at your leisure in the comfort of somewhere more comfortable.

This means sinking a few more dollars into the project, because you need a recording device. In days gone by that could have been a four or eight track cassette recorder (mercifully now long defunct – horrible things they were) or an ADAT recorder (left by the wayside with the rise and rise of hard drive technology), but now

it's most likely to be either a computer with some kind of A-D interface box or a stand-alone hard drive recorder.

Assuming you've got enough tracks in your recorder and interface equipment, you hook the recorder up to the direct outs from the console channels, set the directs to be pre-fade and capture the outputs of the mic pres direct to the recorder. As long as you haven't made a complete dog's breakfast of your gain structure, this should give you plenty to work with when you get back to mix central. Easy.

But what if you don't have enough tracks? The easiest answer to this one is obviously to buy more hardware, but there's that money thing again – most people have an aversion to spending lots of money on something they rarely use. The second easiest and far more cost effective answer is to go back to using submixes.

Give individual tracks to the most critical things like vocals and lead instruments, and group the less critical things – sending all the drums except kick, snare and hats to a pair of subgroups and thence to two tracks could save you half a dozen tracks on the recorder. Similar possibilities exist for horn or string sections where you may have a number of instruments playing the same thing at the same volume and the same time. It may not be perfect, but it's better than leaving something out.

Many digital consoles' feature sets allow for this use in a variety of different ways. At the cheaper end of the market, you find a lot of consoles with options to connect cards to interface with recorders. A number of the consoles in the upper end of the market also have features designed to make them directly compatible with various types of recording software and the process can be as simple as plugging the computer in and selecting an option on screen.

RECORD TO THE RIGHT GEAR

Worth checking with any recording devices is that the format recorded is compatible with your plan for mixing in the studio. Some devices record a format which is compatible with a wide range of equipment, some use very common software platforms, but others are more specifically designed for use with particular hardware. If you are recording onto a stand-alone hard drive recorder, you're going to need to take the recorder to the

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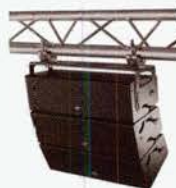
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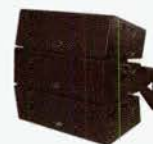
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Andy records to Protools while mixing monitors.



Using the matrix for recording allows the operator to make adjustments to the record mix without messing up the live show.



You could even use the matrix outputs as submixes for multitrack if you're short of tracks.

studio and make sure you've got all the right bits to hook it up successfully. Your chances of success are improved if you record to something like pro tools – you'd probably need to look pretty hard to find a studio that couldn't cope with that.

It's also worth considering the impact of the extra time requirements in this system, given that you now have to take it away and massage it into a mix worthy of the extra time, effort and expense. The idea of giving your client (notice how they've turned into a 'client' now that there's more money involved) the final product on the night is gone, as is the possibility of you not having to think about it any more.

Sometimes your client may be happy to take the multitrack recording – this sometimes means they're going to get someone else to mix it, so you need to make sure you've got some way to collect when the thing goes triple platinum worldwide. It also makes it doubly important that you're recording in a nice portable file format – you don't want to have to lend them your hard drive machine!

BUT I WANT IT NOW!

If your client really wants a completed stereo mix on the night, your best option is to invest in another set of you. Another engineer, with another console and another effects rack, another multicore split connecting them to the mics, in another location which is hopefully reasonably well isolated from the live room. This engineer will also need some decent monitor speakers and would benefit from a little video camera in the live room feeding a monitor in their location.

THE ENGINEER THEN JUST MIXES IT LIKE A LIVE GIG.

There have been some great records made this way over the years, and there's no reason why there can't be plenty more, but it does place a fair bit of demand on the engineer and there's no going back to fix it later if you don't like the result...

SO IF I BOTCH THE JOB, IT STAYS BOTCHED?

Unfortunately yes. But there's a redundancy plan available, and it's not at all complex. Hook the console up to a multitrack recorder and record all

the individual tracks at the same time as the stereo mix. That way when the client appears a week later wearing their angry head and gibbering incoherently at you, you can quickly placate them by pointing out that there is nothing wrong that can't be fixed. And reminding them that it was your idea to have a redundancy plan for just such a circumstance.

Regular readers may recall that during the glorious extravaganza that was Julius' birthday bash (CX3C & 31) we recorded audio. Lots of it. In the most over-engineered redundancy plan in history, I used a Digidesign Venue console for monitors and recorded to pro-tools at the same

time as Eliot used the Yamaha DM2000 in the studio to record multitrack to Digital Performer and stereo to CD. Meanwhile Glen was using a Mackie Onyx to record multitrack to the college's SDR24 hard drive recorder and a matrix split from Dickie's PM5D at FOH was being recorded with the vision capture.

A dramatic example of overkill, but an effective demonstration of how many different ways you can capture audio.

MAKE IT SOMEONE ELSE'S PROBLEM

If you just can't face doing it, there's always the option of just turning the

whole thing into somebody else's problem. Even though they're no longer the only option for making a high quality live recording, there are still mobile studio operators out there who can, for a suitable fee, turn up with a truck kitted out to the nines and deal with the whole thing for you. If you ask them nicely, they'll be able to give you a rough stereo mix on the night and a polished one soon after. They'll set up and pack up all their gear, deal with splitting mics and so on, and all you'll have to do is relax and enjoy your regular gig. Not an unappealing option, as long as you don't mind saying goodbye to all that cash. CX

AUDIENCE MICROPHONES

Never underestimate the importance of audience microphones in any live recording with a commercial future. The swelling of applause between songs achieves a whole lot of things: It lures the listener into feeling some of the enthusiasm of being in the live crowd, and lets them feel what it was like to be there. If you ask people what they like about live recordings, it's usually that it captures the energy of the performance. Audience response is part of that. It stops the gig sounding pitiful. Even without audience mics, you'll get some audience noise through the stage mics, but it will be small and weedy. This will make it sound like the audience was small, unenthusiastic, or both. In any case, it's not a vibe you want the people listening to the record to pick up. It reminds the adoring public that this was indeed a live performance without opportunities to go back and redo duff bits, and that they should be a little forgiving of the occasional bum note or tempo drift. It makes the performers and their management feel big and important and more inclined to pay your bill on time.



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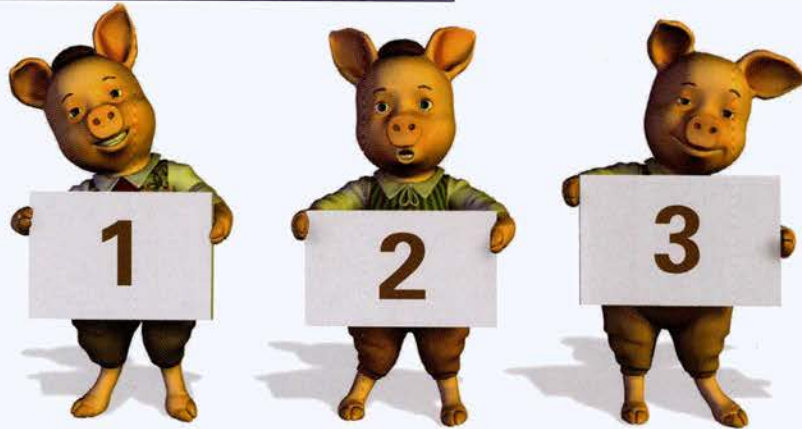
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THREE BAGS FULL OF VOLTAGE

“If some day they say of me that with my work I have contributed something to the welfare and the happiness of my fellow men, I shall be satisfied.” – George Westinghouse

By **RICHARD CADENA**

The three little pigs. The three branches of government. The holy trinity. The number three is an interesting number. Yes sir, yes sir, three bags full.

Long ago, a Serbian inventor named Nikola Tesla recognized something special about the power of three. He started out working on a solution for an AC induction motor and in the process he ended up defining the familiar three phase system of alternating current that we've come to know. We've been using three-phase power ever since. Now when you hook up power in most venues there are three hot phases, a neutral, and a ground.

Three-phase power is simply three separate voltage sources produced by a single generator. Three individual phase windings, called armatures, are built around the periphery of the stator, or the stationary part of the generator, that interact with the rotor to create the voltages by converting kinetic energy to electrical energy. In a balanced system, each of the three voltage sources has the same amplitude and frequency but they are each separated by 120 degrees.

WHY THREE-PHASE POWER AND NOT TWO-PHASE OR FOUR-PHASE?

Tesla found that three-phase power at about 50 or 60 hertz was ideal for

powering motors. Since each of the three current carrying conductors in a three-phase system is out of phase with each other, they reach their peak voltage at different times. It has the effect of distributing power transmission evenly throughout a single cycle; as one phase falls off, another kicks in and reaches its peak. That way, one of the three phases is supplying most of the power at any one time. It's similar to the way a three-piston engine would transfer power more evenly than a single piston would.

Three-phase power has several advantages over single-phase power. First of all, it's more efficient for power transmission. Secondly, it is much easier on the generator since it produces less resonance and destructive vibrations. Thirdly, three-phase power allows for an option of two different voltages – phase-to-neutral and phase-to-phase.

In Australia and many other parts of the world, the phase-to-neutral voltage is 240 volts and the phase-to-phase voltage is 415 volts. The 240 volts to neutral is easy enough to understand. Each phase is an independent voltage source producing 240 volts to earth. If proper earthing techniques are followed, then the neutral and earth on the secondary side of the feeder transformer are bonded, creating a very low impedance path to earth from the neutral at the service transformer. Therefore, the phase voltage on the secondary side is the same whether

it's measured to earth or to the neutral.

The phase-to-phase voltage is somewhat deceptive. You might think that by measuring two hot legs, each of which is 240 volts to earth, that you would come up with 480 volts. And that would be true were they opposite in phase relative to each other. But since they are 120 degrees out of phase with each other, the result is something more than 240 and something less than 480 volts. The – ack! – math behind the calculation of the exact voltage is very reason that many people have a phobia of formulas and equations. It very complex, involving imaginary numbers and natural logarithms.

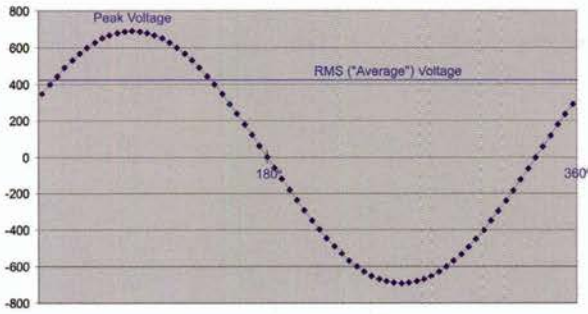
BUT WAIT, DON'T TURN THE PAGE

There's a much simpler way to understand the addition or subtraction of two sine waves that are out of phase with each. It involves little math and computation on your part. All it takes is an Excel spreadsheet and a little bit of time. So put away your slide rule, your calculator, and your math book, take out a computer and open your Excel spreadsheet.

Now create a series of numbers in the left-hand column from 0 to 360. This represents the phase angle in one complete cycle. In the first cell of the next column, type the following exactly as it appears below:

$$=399.46*(\text{SIN}(A1*(3.14/180)))$$

399.46 is the peak value of the sine wave; SIN is the sine function; A1 is



the top cell in the second column again and drag the fill handle to the right so that it copies the formula into the top cell in the third column. Now change the value that says "B1" to "(A1-120)," click on the cell again and drag the fill handle from the first cell to the 360th cell. It will fill in the appropriate

amplitude. To calculate the RMS value of that sine wave, find the peak and multiply by 0.707. You should get a value of 415.69 volts.

Of course, if you prefer, you can either use the phasor method or you can use the natural logarithm formula and calculate the peak value the old fashioned way. I prefer to use the graphical method because it shows you in graphic terms, rather than using imaginary numbers, how two sine waves that are out of phase, add and subtract.

With this method, you can see how two out of phase sine waves work together to produce the phase-to-phase voltage. For example, in North America, the phase-to-neutral voltage is 120 volts. That, of course, is the RMS voltage, so the peak voltage is 169.73 volts. Try replacing 399.46 with 169.73 in the formulas above and see what you get.

Math is a great way to model the real world and it is absolutely vital in engineering calculations. But sometimes you just want to see a picture rather than a bunch of numbers.

Now put away your slide rule and e-mail the author at rcadena@austin.rr.com

the phase angle; and $(3.14/180)$ converts the phase angle from degrees to radians, which is required by Excel. This will all become clearer to you when you are finished. Now click in that cell and drag the fill handle (that little square in the bottom right of the cell) from the first cell to the 360th cell. It will fill in the same formula in each cell except it will replace "A1" with the appropriate cell to its left. In the end you will have every value of a 240VAC sine wave for one complete cycle. You can see it in graphic form by selecting the entire second column and clicking on the Chart Wizard. Then select the line as the chart type and click on "Finish" to create a graph of a typical 240VAC sine wave.

But we're not finished yet. Click on

formula in each of these cells. You have just created another 240VAC sine wave, except this one is 120 degrees out of phase with the first because you replaced "A1" with "(A1-120)."

Now comes the fun part. In the first cell of the fourth column, type "B1-C1." That represents the instantaneous value of the voltage between the two phases at the first point in the sine wave. If you now click in that cell and drag the fill handle from the first to the 360th cell, you will have created a new sine wave showing a complete cycle for the difference between two of the three phases. That is phase-to-phase voltage. If you then highlight that column and create a graph using the Chart Wizard, you will see the resulting sine wave with the correct peak



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HISTORY

Join us on a voyage backwards to last century – a time when men were men and women were women. Just how it should be. Oh, and equipment was heavier, hair was longer, and money was the same except we had less of it.

10 YEARS AGO: CONNECTIONS FEBRUARY 1998 – ISSUE 51 CONNECTIONS MARCH 1998 – ISSUE 52

Two issues cross this magazine's timeline since Connections was monthly, and CX is 8 times yearly. The fifth birthday edition was one of the rare ones with a gatefold cover. This was so we could run an ENTECH advert that was three pages wide – to promote the last ENTECH of the 1990's, since it was to be a gap year in 1999. The show was touted as Bigger. Better. Less Often.

'Dollar Fall Triggers Panic' reported that the Australian dollar had tumbled to .65c against the American buck. We tracked its fall: \$1.16 in 1980; 77c in 1990. The fall at the time had just seen importers hoik the price of equipment by 10%.

The editorial tracked the changes in the biz since the mag started – "Studios have really suffered as technology puts hard disk recording in every bedroom." Quite. "Hire and Production is now dominated by corporate theatre". Still is. "Contracting is dominated by computer control". "Clubs: we see less money spent on audio, and more on moving lights and video." That's changed: people want audio and video and those movers can move right out in 2008.

Our BASF Tracking Guide detailed what sessions happened in which recording studios for several pages. If we did one in 2008 it'd be very small.

QSC launched RAVE, which has

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Connections

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REVIEWS: SOUNDSCAPE
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morphed into QSCcontrol.net. We also reviewed Soundscape Digital's DAW which solders on today as an SSL company. Ten years ago it had a chance, but now it's a ProTools world.

On a more serious note, we hosted submissions for the 1001 Uses Of Gaff Tape competition, and aside from Danny Bishop at Yamaha (6kg gaff ball) the winner was Suzy Brandstator from Picton High School. Suzy is an excellent entertainment educator to this day, but

... "The gaff baby was a poor effigy of Suzy's baby, breast fed during a production. The boy students would breast feed their gaff baby...." Damn strange stuff they put in the water out there!

NEWS: AAV was sold to a South African group. Telex acquired AV. Music Link in Australia were championing Behringer (who they represented) in a court win against Mackie, who sued alleging patent infringements. Now

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NAMM: NEW EQUIPMENT



LIVE REVIEWS

Promoting the Gunner's
Lighting Moscow Circus
Screaming Jets P.A.

P.A. Installations: We don't spend enough!

Digital 8 track war

Music Link represent Mackie....

Gearhouse chief Stephen Lakin was interviewed, it all seemed too good to be true and it was, since the group collapsed later. They did \$10 million in Australia in 1997.

High End Systems were advertising the TechnoBeam, last of the moving mirror generation. Meanwhile Martin were advertising the new Mac 500 and the Mac 600, it was game change time, and Martin grabbed the game. At least for a while.

And finally, our Hire and Production Directory was headed with a story on Venue AV Policies, where we reported on allegations (by production co's) of restraint of trade against some venues where in-house or preferred audio visual suppliers were, well, preferred. The story generated a backlash against Connections from some affected venues with thin skin.

WHAT THINGS COST:

- InterM 8 channel mixer: \$399.
- Meyer HD1 monitors: \$10,275 pair.

- 100m Connectronics Mic cable: \$280.
- CM Lodestar 1000kg chain motor hoist: \$3,420.

15 YEARS AGO: CONNECTIONS ISSUE # 1 : IT STARTS! FEBRUARY 1993

Wow, I remember this issue so well since I lived it for months and months before it birthed. The single most important project I've ever undertaken, maybe except making a baby but that was easy. Connections replaced Channels. When we hit 2010 I can do a '20 years ago' segment with Channels issue #1.

As always the mag came together late, since NAMM and Guns and Roses were both run near to deadline. For those who don't know, NAMM is the huge trade show held in Anaheim (Los Angeles) every January. Although acres of guitars and instruments are the main focus, it was and is a great place to get

new audio news. So I was there.

There were lots of new things in the inaugural issue, but they were eclipsed by the nocturnal proclivities of one Dolly Roadbox who reported on the action inside the ladies lav at the Anaheim Hilton. With pictures. Yolanda, Lynn and Dana were also pictured sitting all pretty in the Hilton bar waiting for Mr Right, who was anyone with two hundred bucks.

Dolly created a ruckus that quickly led to her sacking, which was a shame.

Meanwhile the new mag was all bright and cheery with fantastic industry support.

IN THE NEWS: Vari*Lite activated legals against High End Systems. Against this news, we reported that Pan Command had a new automated luminaire called the Pro Spot. LSD also were trying to launch their ICON moving head fixture. Both would be dead and buried by Vari*Lite before long.

'Getting Rock & Roll On The Road' was one of our best ever features. It was a recorded transcript of a seminar at another American trade show, this time LDI. In it, five production managers all spoke freely. Ergo: Morris Lyda: "On most of our shows we issue a standard bid form with 450 moving lights on there. Then we select a vendor!" Marty Holm: "You gotta realize that dealing with artists, at some point half your brains get sucked out!" Steve Lemon: "Some people have an opinion that Clair Brothers staff have a bit of an attitude..."

EXCLUSIVE: New Lone Wolf Audio Control Protocol WILL take over! That's how we plugged Media Link, which was the star seminar topic at ENTECH several years later when the demo crashed.

The 8 track digital war was heating up; with the ADAT and the Tascam DS80 both attracting a lot of business.

Catriona Forcer was onboard for lighting articles, the start of a great partnership that was to run for seven years. Duncan Fry led his Connections debut with a story about 'The Return of Chickenman' where a concept band with a lead singer in a chicken suit crashed and burned in front of a footy club audience. Sounds fair to me.

WHAT THINGS COST:

- Jet Chaser \$295.
- 16 ch Ross mixer \$2,000.
- Megatone's new dimmable strobe was \$999.
- Soundtech launched a crappy 2 x 15" and horn speaker box for 'just \$1,449'.
- Used BOSE 802 series II 'hardly used' \$2,150.

CX



2008: a speaker odyssey

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David Thomas, Tanner Lightfoot, Noel Lightfoot.



INSIDE LSV PRODUCTIONS

By JULIUS GRAFTON

December isn't a good month for Noel Lightfoot. In 1989 his newly acquired Hunter Sound and Lighting was hit by the largest earthquake of modern times, at least largest in Australia. The earthquake damaged 35,000 homes, 147 schools and 3000 commercial buildings – including Noels. It also collapsed part of the Newcastle Worker's Club, killing crew setting up for a gig. The club was one block from Noel's business.

Fast forward to December 2006, and a fire ripped through Noel's equipment warehouse. That disaster has taken a year to sort out, and through under insurance cost an immeasurable amount. Plus the December curse has also seen the business forced to move premises a few years earlier, at the busiest time of year.

"We didn't lose a single gig – the

day of the fire we had three shows on", says David Thomas who is the Product on Manager at LSV Productions. Noel nods his head in agreement. "What's most important is the customer base. Thank goodness most equipment is black!"

LSV Productions started life as Lightfoot Sound, which in turn was the part time business that Noel started way back in the 1980's to supplement his bass playing in a band. He had a day job as the spare parts and service guy for an audio importer – a handy grounding for someone starting a production business.

In the late 1980's Noel's employer – Rank Industries – withdrew from Australia and Noel found himself at Amber. It was time to go full time, and the Newcastle business was acquired from Neville McLean. It was called McLean Sound and Lighting, not to be confused with the large McLean Audio Services in

Melburne. Or the not as large McLean Sound. Confused yet?

Because Noel had stretched himself buying the Newcastle business as well as going full time, the earthquake was almost too much. He couldn't even access the building in Newcastle for a month afterwards. It got so tight he says he sold his house in Sydney. That is tough for anyone in business.

Fast forward to three years ago. Noel bought a staging business, Centre Stage Systems. Two years ago: Noel bought Sound and Video Innovators, or SAVI as it was known – which in turn was the rental and production business that Ian McLean (no relation to Noel McLean in Newcastle) ran for many years in Sydney.

Then David Thomas assumed more responsibility in the business, and together they re-branded it, LSV Productions instead of Lightfoot Sound. The L is for Lights, S for



d&b amps back.



Nexo alpha e.



a&b light suit!

sound and V for vision. Or another interpretation is that it is short for Lightfoot Sound and Vision.

These days the company covers staging, sound, lights, vision and a few more things.

David is 23 years old and was an annoying neighbouring boy on a bike when Noel ran Lightfoot Sound from home. Somehow David dropped out of school and just kind of attached himself to Noel. In a good way – now he is working beyond his years; fully responsible for all production work at LSV.

LSV are located at Terry Hills which is on the northern fringe of Sydney.

EQUIPMENT TIME!

d&b Line Array

Up the top of the audio inventory is d&b audiotechnik's Q Series line array. This is a small to medium scale system made up of a line array element (Q7) and an underhang (Q7) which can be used as a stand alone

box. The Q7 can also be rigged off a stand

The Q-Sub hangs underneath, and the Q series can be ground stacked. In addition LSV have some B2 sub woofers that typically sit on the floor. d&b have a fairly unique approach in that they supply an amplifier, the D12, which does processing and amplification. It is a relatively simple arrangement where all speaker cabinets use the same 5 pin speaker cable.

So why buy d&b?

"We looked at JBL Vertec, EV, Martin and Nexo. The criteria included that it had to look neat and be the right colour with presentable finish," David said. "Easy to use and assemble, and easy to move are important. The boxes are light weight. The processing is inside the amplifier, there's no patching and no matching."

"Some line arrays we looked at are not friendly when ground stacked," Noel added. He also stated that supplier support was a very big aspect of the d&b decision, and noted that another relatively close production house (IJS, at Mona Vale) also had a Q Series system. Which makes crosshire easy.

Nexo Alpha-e

This has been around a while now, and there are a lot around Australia. LSV have six stacks of this 2 box system that comprises a top box and a horn loaded 18" bass box.

"It's done a nice job, and the six stacks can do 4000 people," David says. Where there is rock music involved, they sit some d&b B2 subwoofers underneath for extra oomph.

LSV use Camco amplifiers and Nexo NX241 processors with their Alpha-e.

Nexo PS15 and PS 10

The PS15 is an industry favourite, a 15" and horn box that can be tipped on its side and used as a wedge. There is a matching subwoofer (LS 200) and the combo can be run active (3 ways) or passive/active 2 ways.

PS15 in LSV use end up as front of house speakers in single or doubles, and monitors. They are roadcased, to keep them presentable, and processed with Nexo's PS15 controllers. These are driven with Lab Gruppen 6400 amplifiers.

The baby brother of the PS 15 is the PS 10, "the best box we ever bought" says David. It also has a matching subwoofer, the LS500. "It has good output and it's compact."

Plastic Time

The fire forced some changes to inventory, since it melted 30 Bose 802 speaker boxes, some JBL EON, and a bunch of RCF 300 and 300A boxes – amongst other things.

LSV also have RCF 400A boxes, "A good heavy 15" and horn, powered box. Suitable for DJ's, drum fill or putting around a football field," says David.

They had a few newer RCF 322A powered boxes, loaded with a 12" driver and a 2" throat high frequency horn. In the process of deciding what to order to replace the melted stock, David and Noel decided to try out some FBT MAX4A powered 12" and horn boxes.

The RCF322A's were sat alongside the FBT MAX4A's and ... I heard the difference myself, when I visited, because the guys wanted me to. A new SM 58 mic plugged directly in, with no processing, produced a full and rewarding sound from both



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d12 amps.

boxes. But it sounded better coming out of the FBT.

"The 322 has a woollier bottom end," says Noel, "the vocal presence in the MAX 4A was there."

"Our criteria for choosing new boxes is price, sound and supplier support," says Noel. "Plus we could get more MAX 4As for our money."

Amplifiers

Aside from the flagship D12 amplifiers which are essential for driving the dBQ Series, the guys have Lab Gruppen, Camco and Crown amplifiers in stock.

"For the future, I prefer Lab Gruppen," says Noel, citing the weight and performance as a factor. "I've had some hassles with some Camco amps not liking outdoor gigs and moisture," says David, "to the point where I put a heater next to them overnight."

We have a general discussion about amplifiers: Noel still has some Australian Monitor AM 1600's that I built in the early 1980's. Talk turns to unusual practices and David claims that he has seen another production company where Mackie M1400 amplifiers – hardly a high powered device – are run in bridge mode to get enough grunt. The problem with this practice is that one amplifier drives one speaker – a wildly inefficient way to power a sound system!

Mixing Consoles

"Soundcraft are well known and trusted" says Noel, so they have some, including a Series 2 32 channel, and Live 424 in 16 and 24 channel varieties.

Allen and Heath are represented with a bunch of Mix Wizard consoles, "rack mountable with six auxiliary



Allen and Heath i-Live.

sends. That's a big factor," says Noel. A GL 4000 48 channel console was added after the fire did them a favour and seized an older Soundtracs console. Some fires are better than others...

"The GL 4000 came with a good price, and almost any operator can use it without too much thinking," Noel reports.

Digital i-Live

LSV Productions were pioneers as the first Sydney rental company to purchase the Allen and Heath i-Live digital mixing system. It wasn't an easy decision, says Noel.

"The Yamaha PM5C and Digico D1 were both some months away in terms of availability. The Digidesign console wasn't yet available. It did bother us pioneering a new type."

The i-Live comes as a work surface with one very complete set of channel controls spread across the top. When you select a channel, all these controls snap into place and light up, so you don't need to look at a screen to change anything. That was a big plus, say the guys.

On stage is the processing rack with 64 inputs and 32 outputs. It's a powerful package and overall LSV are happy with it.

"There's been some quirkiness," says David, "but we are now on our fourth software revision and it's working very well with the upgrades."

"Whenever I had a query, TAG (importer: Technical Audio Group) would get onto the factory and have an answer the next day," says Noel. "It's never crashed or broken, we have no issues."

Wireless

Like most production firms, the demand for wireless microphones

keeps growing, just as the federal government contemplates removing many of the frequencies that are currently used for entertainment. That problem will be hard to deal with when it happens.

LSV have Shure ULX-P systems, and Beta 58 heads. "We go with Shure because they have a good product range and good R/F output."

DPA headsets are used for theatre productions. They also have Audio Technica 3000 and 5000 series wireless receivers with belt-packs and condenser microphones. "Chosen because of value, and usability," says Noel.

Lighting

The mainstay of the LSV fleet are Par cans, 200 of them. The firm covers festivals, carnivals and corporate events. There are a few moving lights – Martin MAC 550's "never again," says David, "because things keep falling off them, internally," and Mac 250 en-Tour's "great, no problems."

Control

A recent addition was a slew of Martin SCX 700 scanners, a moving mirror automated light that can be dmx controlled. According to David, they do a great simple stage wash and spot function at low cost.

At the control end, LSV use LSC Maxim consoles.

Noel: "It's because there is a combination of preset and moving light control on one console. David convinced me that when we go into a venue with a DMX system, we can unpatch their preset board, connect the Maxim and still have preset control over the house rig. It beats having two consoles – one for conventionals, one for movers. That way you don't need to be a moving



DR rack.

light operator to make the first 24 or 36 channels work."

For dimmers: "We mainly use Jands HP12 or FFX racks, we still have some Dynalight racks that we are phasing off."

There's plenty of other lighting in the warehouse: effects, Selecon profile spots, and a bunch of followspots. I spotted an old Strand Patt 293 - still doing work despite being a 50 year old design.



A fine selection of microphones.

In the 'how strange' dept are 300 fluorescent fittings, used when there are marquees to light up. A bunch of makeup mirrors with Hollywood lights around them are also arguably part of the lighting dept.

Staging

LSV have a LOT of rostra, in 300mm to 1200mm heights; and 1200 to 2400 depths. They have timber tops, carpet tops, poles and uprights, skirting and drapes. They



Fatt 293.

have so much of it that the 26 foot truck is about to be upgraded since when loaded with staging it runs the risk of being overloaded

A ten tonne pantech is under consideration. As to making more rostra, Noel has a workshop at home where he can build 3 risers in one day - if the phone doesn't ring.

Video

There's enough kit to do some shows, with 42" L&G Plasma

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Got to move it all somehow.

screens, NEC data projectors, fast fold screens and some cameras. A Fosom switcher does the hard work. "The video gear from SAVI didn't amount to much, I mainly bought it (SAVI) for the customer list," Noel says.

The rest

There are all kinds of bits and pieces at LSV, including some fashion clothing racks, and department store plinths. You know, those round things they stand the mannequins on. These come dressed in different coloured vinyl.

They come about because the firm do fashion shows, and the customers need them. This has driven other purchases at LSV, and also results in crosshires of things as diverse as mobile stages and generators.

Some of LSV's customers are councils who tend to rely on a trust relationship and prefer that LSV act as a kind of event co-ordinator in some cases. Which leads to LSV supplying

a 'turn key' production for an event.

Generators are a hot topic right now, since Noel and David were accustomed to dealing with Viking Generators who had the events market figured out. That company was sold to Coates Hire, who have a different approach. "Mind you, we have an excellent customer service relationship manager just now," says David.

However when Coates purchased Viking, things changed in terms of after hours delivery. Viking was service oriented towards events, so a Saturday 8am delivery was routine. At Coates, it is an after hours delivery, and a premium is charged. That's how they do business.

Another issue is, according to David, after use Coates will refuel the generator and charge around \$1.90 plus GST. You can't exactly take a skid mounted genset to the local servo yourself. An Australia day concert David just managed where a 330KVA

generator (that's EIG) was used resulted in a fuel cost of \$481.

David (and CX) are not saying this is not right, simply that there are on-costs (like delivery and fuel) associated with hiring a generator, such that LSV are seriously contemplating buying a couple of 40 KVA trailer mounted units which could be synced.

But before that, they would like to buy some mobile cool rooms.....

LSV Productions

P: (02) 9986 1117

www.lsvproductions.com.au

BURN, BABY

The fire at LSV's premises was an act of vandalism, where someone smashed a window and lit the stuff inside. Noel and David and the other 3 staff then had the pleasure of salvaging equipment, all of it badly coated in smoke, within a smoke damaged warehouse.

There's still traces of the fire 14 months later.

The smell is gone.

The insurance was kind of OK, but the process is long and Noel was under insured. The way it works is that you must cover the whole value of the business, and then justify what is lost in the fire, using receipts and proof of original purchase. While Noel could do this, the overall amount insured was underneath the overall value of all his stock.

That's where an averaging process is employed, legitimately, by the insurance company. This resulted in Noel getting around \$500,000 for the loss of equipment worth \$752,000. The moral of the story is to be careful and to insure for the full value.

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Sound Basics: (3 days)
April 21, 22, 23. July 8, 9, 10.
Oct 6, 7, 8.

Video Basics: (3 days)
April 24, 25, 26. July 14, 15, 16.
Oct 3, 4, 6.

Certificate Three: (2 weeks)
April 14 - 26. July 7 - 20.
Sept 29 - Oct 10

Production Workshop: (1 day)
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Or in school holidays: April 26.
July 19. Oct 10.

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(5 days) April 21 - 25. Oct 6 - 10.

Advanced Mixing: (5 days)
July 14 - 18.

MELBOURNE

Stage OH&S: (1 day)
Monday 30 June

Sound Basics: (3 days)
July 1, 2, 3

Lighting Basics: (3 days)
July 4, 5, 7.

Video Basics: (3 days)
July 8, 9, 10.

Certificate Three: (2 weeks)
June 30 - July 11

Production Workshop: (1 day)
July 12

BRISBANE

Stage OH&S: (1 day)
Monday Sept 22

Sound Basics: (3 days)
Sept 23, 24, 25

Video Basics: (3 days)
Sept 26, 27, 29.

Lighting Basics: (3 days)
Sept 30, Oct 1, 2.

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SOUND AT SUMMER CAMP

Julius heads off into the Aussie bush to mix on a Yamaha LS 9. A quiet week turns into SPL hell thanks to your youth...

Countless summer camps are run everywhere when it's summer, my special one features kids in year 5 and 6 of school. Several hundred of them, pumped and excited, for three days and two nights of water bombing, lollies and church activities. My daughter and her husband are pastors, so this is my chance to help them.

I do sound and the church arranges things. The PA was ready to go when I got there an hour before the first busload of kids, so I went on a fast familiarization mission. Churches are media shy so I'll keep the story relatively anon, but I need to give credit where due. So read on.

This camp had a band with several guitars, keys, bass, drums and up to six singers crammed on the steady stage. I quickly found four Shure UFX beltpacks with E6 headsets and a pair of wireless Beta 58's in the draws case under the wireless racks.

The headsets are more the 'Madonna' or Garth Brooks type, last year we had little DPA miniature units that took time to fiddle with –

suitable for talking pastors who have time to prepare. The E6 is more suited to crash and bash church work where they are on and off different people all the time, and on and off the floor some of the time.

Out front the production dept of church had arranged two EAW NT29 powered speakers on stands and two EAW LA400 subs. In the empty hall this combo had buckets of gain, but once the kids started to scream, sing and jump I struggled for headroom. I suspect anything would struggle in there – until you are in the middle of a youth crowd, you have no idea how loud they are.

The mixing desk was a little Yamaha LS 9 in 16 channel form. This newish live digital mixer is a really versatile device with 16 XLR inputs and 8 XLR outputs. If you buy optional cards to go into the rear slots then you can option on more ins and outs. The desk also comes in a 32 'channel' version.

Onstage were four Nexo PS15's – which are exactly the combo tool loudspeaker of professional audio since they can be upended as a 15

and horn main PA box, or sat in a tilted way for onstage monitors. With Nexo processing, they actually don't really need much or any external equalization which was just as well, since it took me a little more time than I had to figure out the 'Rack' area in the Yamaha mixer.

There were four rallies during camp, each of ninety minutes duration. A rally started with four band songs and a lot of kid noise. Then there was a game of some kind, one featured raw octopus and a drop sheet with a lot of simulated or maybe real puking noises. A formal talk/message then happens for about half an hour, and the kids are surprisingly receptive. The theme is usually life stuff: live well, look after your parents and don't start dating too young – things I was not taught about until now. Doh. Yeah, and they warn about boys water bombing the girls huts at midnight too. As if that ever happens.....

My job was to get the voices over the riot. Boy it was a challenge! Forget about trying to mix the band underneath the voices – I just worked



Julius having a headache after five days of youth camp.


on the voices and keeping feedback at bay, which is hard when you can't really see what's going on. Several hundred pogo'ing 11 year olds – you got to see it to understand. On top of that, the kids are literally all over you like a plague of rampant sweaty mammals, and the summer heat makes the hall a sauna. Your ears ring all night afterwards.

With several hours experience under my belt, the little Yamaha desk and I were firm friends. A great feature of digital desks is the scene recall. While I was away between rallies there were a lot of sticky little fingers all over the mixer since they needed to run movies through the system. When I got there and entered the war zone I just recalled my scene, to reset everything. I got caught out once – arriving too early for the breakfast rally, the first of three monitor sends was not going. Turns out the master fader for auxiliary one was down on my memorized scene. You need to switch the faders to 'Master' mode to see them. Quickly sorted.

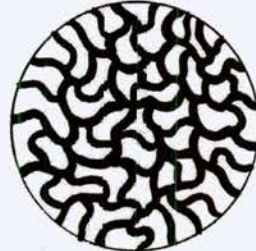
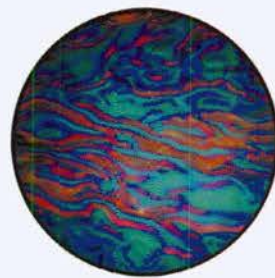
I made big use of the onboard dynamics, with compressors on all the vocal channels. The leaders and singers get caught up in the crowd vibe and yell their microphone into massive peak overload. Lucky the LS 9 has headroom in the head amp, because digital overload is a cracking and splatting no-no, quite unlike the gentle distortion of a conventional preamp.

There's plenty to know about church gigs. No swearing, no beer, and no tanties. No hooking up to stray talent – although those days are long over for me. And no pay, either, since the whole idea is to volunteer, which removes the tension of negotiating and collecting your fee!

But everything else is weirdly similar to rock and roll : the music, the sound pressure, the sweat, the youth, travel and the lack of sleep.

Finally, a curtain call for Nick Macfie of Production Technologies. His audio gear on this job was very well presented and packaged with proper roadcases and not a trace of grime anywhere. He also called me to check how things were, and picked up quick when I called him about a small issue that I could have resolved myself. 

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NO PAIN NO GAIN

Dat Rick Springfield, he sho'
am dam' fine lookin' man



*All New Duncan Fry!
(artist's impression only,
actual product may differ
from that shown here).*

BY DUNCAN FRY

Just before Christmas I turned on the TV one Saturday evening and found that the Countdown Spectacular #2 was shuffling its way to a geriatric close. Yes, I know that I shouldn't be too critical because these artists are my peer group, but who said life was fair?

Onscreen, a large woman dressed in black with a John Lennon sailor's cap was singing The Motels' 'Total Control', one of my all-time favourite songs. I bought the original vinyl 45s of that and also 'Take the L out of Lover' at a flea market in Perth a few years ago, in perfect never-been-played condition, for a dollar each. Fantastic productions, both of them. The sax solo on Total Control, and the chunk-a-chunk solo guitar in the middle of 'Take the L out of Lover' still send a tingle down my back every time I hear them. (You've got to get out more, Dunk. Ed)

It dawned on me that it wasn't a bag lady who had wandered in off the street that was singing, but Martha Davis in person. Hrrm. I've always felt that it's a good idea not to put your lipstick on while blindfolded, as she appeared to have done - I always use a mirror myself!

So who would be on next. I wondered? It turned out to be none other than Rick Springfield. I was a bit worried by this - I mean Glen

Shorrock looked pretty good in the Twilights, and even LRB, but now he looks like he's auditioning for the Danny DeVito Story telemovie! What's Rick going to look like, I thought, but I needn't have worried.

He bounded out on stage and performed a well-choreographed medley of his three hits. I can't remember them, but I assume Jesse's Girl was in there. "How I wish that I was Jesse's girl" or something like that!

It was a very slick production, and he looked great. Unless you looked very closely, where some wrinkles could occasionally be seen, he looked to be about 35. Lean, with muscles bulging from his sleeveless black t-shirt, floppy dark hair that couldn't possibly be natural, he slashed at his guitar with bunches of roses that showered over the stage and the screaming housewives in the audience. He then threw the guitar in the air at the end, smashed it to pieces, and tossed them into the audience.

Despite seeing Pete Townshend do it at Festival Hall in 1968, and then Ritchie Blackmore ten years later, I was still mightily impressed.

And yet I remembered being in bands in my youth, and doing supports for Zoot when Rick was in it, so his age couldn't be much different to mine. (I checked on the Internet and I was right!)

Like myself, he must have a fairly major birthday coming up soon, so I thought, "Well, fuck me, if he can look that good at his age then so can I!"

I'm often reminded of the classic quote from Keef Richards, who said, "If I had known I was going to live this long, I would have taken much better care of myself!"

A brand new year, and an impending major birthday have inspired my New Year's Resolution to become more like the lean and hungry Dunk of earlier days but hopefully older and wiser. They do say, though, that inside every jolly, chubby person there's a mean thin one trying to get out, but unlike Dr Jekyll, this time I'll do my best to keep Mr Hyde under control! 'What are you looking at, pal? Smack!'"

I was having a pre Christmas lunch with Dazza, the singer from one of those early bands I was in, and his wife, and we were discussing the show, which they had also seen. They had jetted down from early retirement in Queensland (Lucky bastards), and he had questioned my choice of a warm chicken salad, no dressing, instead of my usual steaming pile of spaghetti marinara with double oil, despite the fact that it was his turn to pay!

So his wife said, "Of course, Rick was always good looking and photogenic when he was younger",

with which I had to agree. And then Daz chipped in with "...And of course you weren't!"

Oh, that's lovely, isn't it? But hey, if your friends can't take the piss out of you, then who can?

It's like the often asked question "Why did he leave the band? Musical differences - they were musical and he was different!"

Anyway, now I'm finally putting the exercise bike I got for my last milestone birthday to good use. For Christmas I bought myself a DVD on how to achieve rippling 'Abs of Steel' - a sixpack instead of the keg I have now. On the DVD an impossibly lean but attractive well-muscled woman with less than a milligram of excess fat and the Body Mass Index of a racing whippet demonstrates these murderous abdominal crunches while smiling and chatting to the camera, while I'm groaning in burning agony on the floor trying to replicate them. Still, no pain, no gain, they say.

But I really need something for the upper body as well, something to give me pecs of steel that will match my soon-to-be abs of steel. I read in the latest issue of 'Impending Pensioners Weakly' that weight training is very good for people like me who are approaching the early foothills of imminent middle age. A home gym would be really good, but they are quite a lot of money, and I'm sure you know my thoughts on that by now.

As luck would have it, though, a couple of months ago I was having dinner with RH Positive, the bass player in the Tweedz, and when I went into the garage searching for the beer fridge I saw an elaborate home gym setup.

"Wow, when did you get this?" I asked, and he told me that the keyboard player had parked it there because his flat was too small for it.

"I wish he'd come and get it," he continued. "He moved down the coast a year ago into a big place, and I need the room here."

Bingo! So late last year, at the annual band pre-Christmas get together and beer-a-thon, I said to the keyboard player "Do you still want that gym you've got at RH's place?"

He ummed and aahed, then said, "No, not really."

"So how much do you want for it?" I enquired.

He ummed and aahed some more. "How about a hundred bucks?" he eventually replied. "It cost me a whole lot more than that when I bought it."

"No worries, it's deal." I agreed "A hundred bucks, delivered."


"Delivered?" he gasped "Snit, how much is that going to cost?"

"Well," I smiled, "I could probably organise pick up and delivery for, hmmm, let me see...a hundred bucks?"

He threw a bread roll at me and said "Jeez you're a bastard...OK. Just take the bloody thing. Merry Christmas!"

CX readers can rest assured that any future mention of my birthday celebrations will be absolutely minimal, not the twenty-seven pages of self-indulgence spread over three issues that was Julius's.

Hang on - he's the one that's paying me...Andy, can you erase that last bit?

Got any thoughts on ageing performers? Have they still got something to offer, or should they just fuck off and die? Email me: dunk@dunkworld.com 

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PROFILE: SHANNON GOBELL



What do you do?

Technical & Production Management

Where do you do it?

Major events in Australia & O/S, but at the moment my focus is the St Kilda Festival. In fact I have been the St Kilda Festival's Production Manager now for the last 9 years and

seen it develop into the 400,000 person, free music for all, street festival extravaganza that it is today.

What was the moment, the event, that set you on the pathway you are now on?

I think I have to credit Keith Tucker for that one, he engaged me on the 1994 Adelaide Fringe Festival (one of

the largest arts festivals in the world) and this moved me from the world of touring theatre and into major events and I never looked back.

Who has really, truly inspired you, and why?

I don't know that there is any one person who inspires me but there are a number of people I work with on a daily basis that challenge and inspire me to produce better and better work and to continually evolve. My very good friend Kim also inspires me everyday with her commitment and resolve.

Is there a gizmo, product, or device that has changed your (working) life? And why?

Like most people now-a-days I couldn't go on without my iPod Touch and Navman GPS unit, although I am partial to lashing out on the newest Leatherman every time one is released.

What are your hobbies / interests?

When I am not completely absorbed in work I do like to play as much sport as possible, keep fit, eat out, see a lot of movies and generally relax. I do like to stay abreast of the latest gadgets and gizmos in the big wide world of technology; old habits die hard. I have found myself in recent years also purchasing a lot of

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photography equipment and shooting off more snaps than the average Japanese tourist. I do love it though when you get that great 1 in 1000 photo, which then makes it straight into a frame and onto my lounge room wall.

Describe your family/nearest/dearest...

Unfortunately I don't get to see my family all that often with them living in SA and my continual habit of moving around the place on various gigs all the time, but with my mother and father now recently retired that may change, as they may be able to come and visit me. I do have a very close friend in my home base of Caloundra, QLD and she is my rock and I turn to her for all the important life advice. I also have a close circle of friends in Melbourne and they do help to keep me sane given the intense nature of some of the jobs I take on.

Is there a significant trend that you think about (good or bad), about your job/industry sector?

I do like where LED technology is taking us at the moment and just can't wait to see the next high end format of this. I am also very concerned with the trend of Policing at events around Australia and particularly in Victoria with the general Police approach seemingly being to pull more and more resources out of these events and rely more heavily on security personnel. Nothing works better than a police presence of course, it's all about the blue uniforms being seen and the general respect for those.

Is there a guru in your industry that you have not met, and why would you like to meet them?

Fortunately most of the people I hold in very high regard in this industry, in Australia, I have had the pleasure of meeting or working with already. I would be interested in having a chat to Bruce Jackson, I think that would be very educational given his years of experience in the industry.

Do you have a funny moment, or an incident, to share with us?

I do recall my interview for the Adelaide Fringe Festival back in 1993. I had applied for a permanent position with the Festival and been granted a phone interview and the timing was a little tough as I was on tour with a small show. I committed to the interview without fully understanding at the time what communication issues I may have. Needless to say the town I ended up in was very country and very small, a one pub town, with an old town hall and a post office and not one of these places had a landline phone and the town had no mobile reception (being the very early years of mobiles). The only phone in the entire town was a public phone box outside the post office, surrounded by sheep. Do you know how hard it is to have a serious interview for a job in a phone box surrounded by sheep?? Anyway, the interviewers got a laugh from though that and I think I may have got the job for my ability to do an interview from a public phone in the middle of nowhere surrounded by sheep.

Anything you'd like to add?

I do get up every day with a real sense of enjoyment in my job and what I do, yep that's right I actually enjoy my job!! I'm not sure whether its the ever changing technology we deal with all the time or freelance nature of moving to new challenges all the time or the new people we are constantly meeting and working with but it all adds up to quite an enjoyable lifestyle that I wouldn't like to trade.



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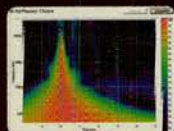
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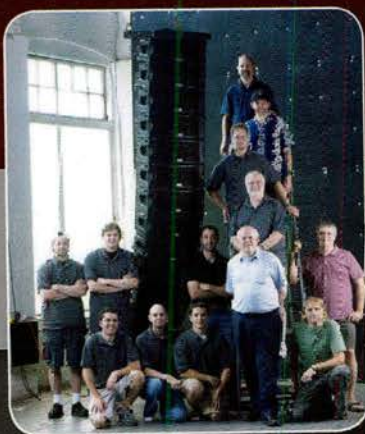
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