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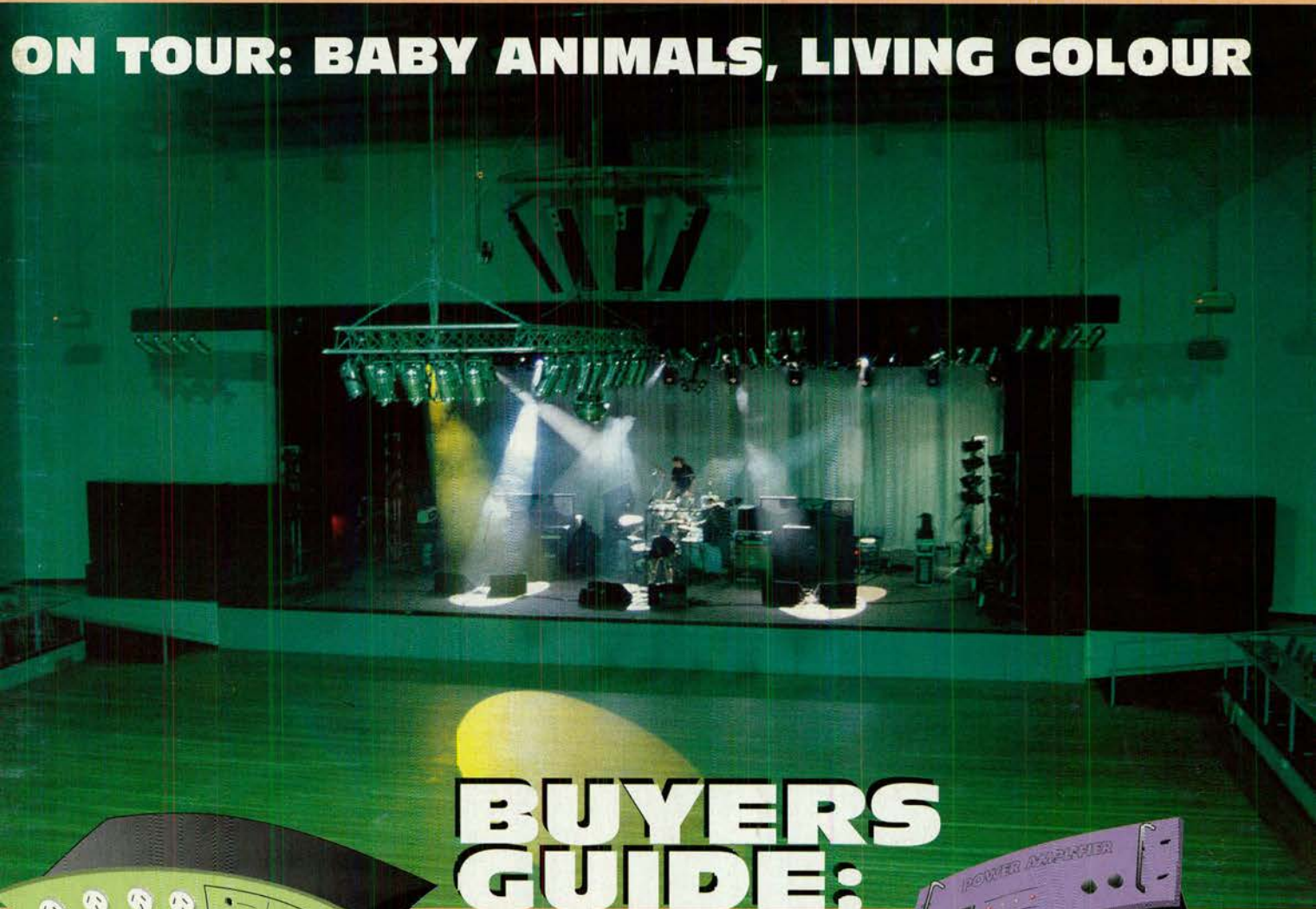
October '93

Connections

SOUND • LIGHTING • STUDIO • AV • MUSIC TECHNOLOGY • THEATRE • TOURING • SHOW/BUSINESS

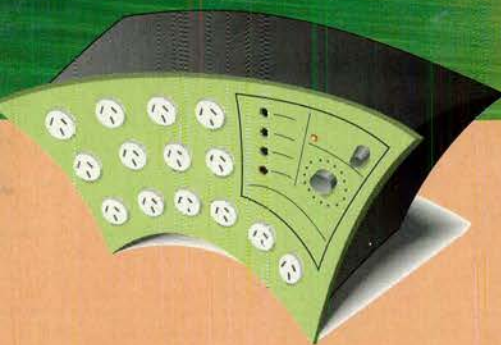
Digital Sound Editing: SSL & Sonic Solutions ♦ **Akai DR4**

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BUYERS GUIDE:

♦ **AMPLIFIERS**
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LIGHT A SHOW
MASTER TO TAPE
FIX YOUR DAT

SHURE

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The standard 100% SHURE wireless system for general use. Operates on the VHF band like most other wireless systems. Receiver has one antenna, range is typically 100m. Transmitter battery life is typically 14 hours.

TG: Guitar or Instrument, with L11 beltpack transmitter, WA 300 instrument cable, and T6 receiver. 695.00

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Available (stock) frequencies:

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L Series Wireless

Shure's Professional Diversity (dual antenna) system. Use same transmitters as T Series (above), with additional choices. L4 Marcad® Diversity receiver offers superior reception, rack mountable case and XLR or jack output.

SM 58 handheld vocal microphone system, (ELS24/58) 1,695.00

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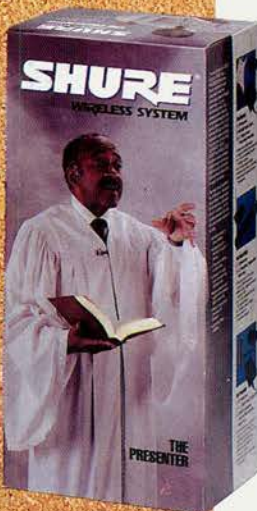
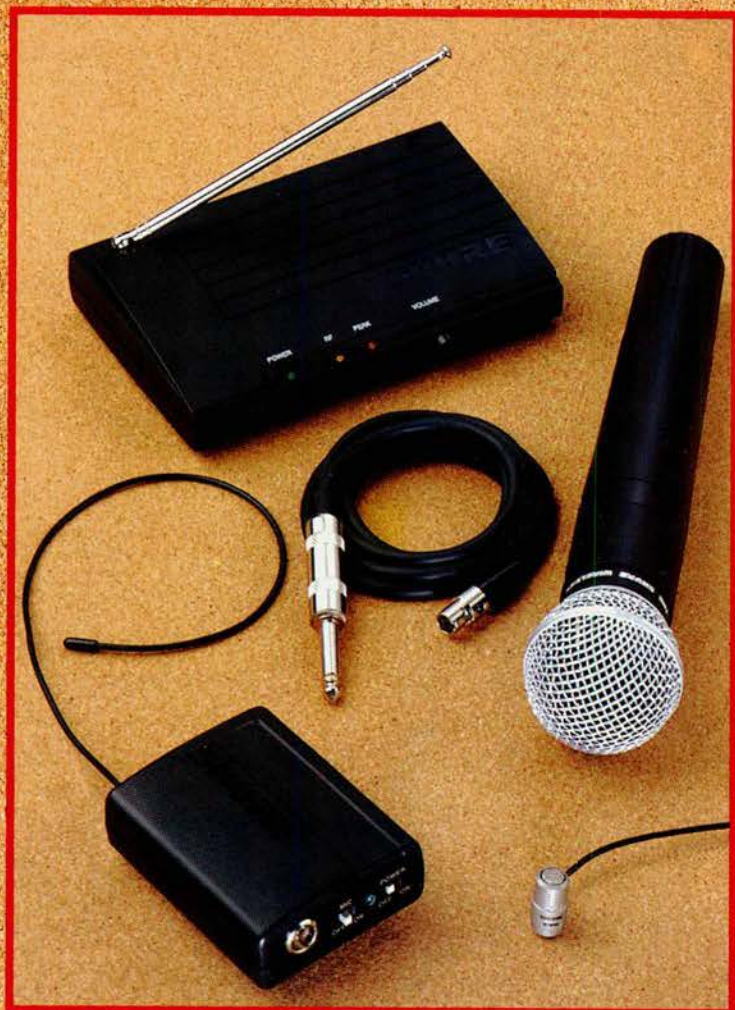
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* Please note up to 14 different frequencies can work together. Ask for details.

All prices include sales tax

For the name of your nearest Dealer, call Jands. (02) 516-3622

JANDS



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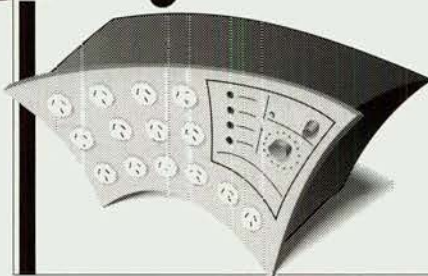
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AMPLIFIERS

-the COMPLETE guide to everything available, from 100v to Mosfet & BiPolar

DIMMERS

-From touring to installation.

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Connections

Connections Magazine

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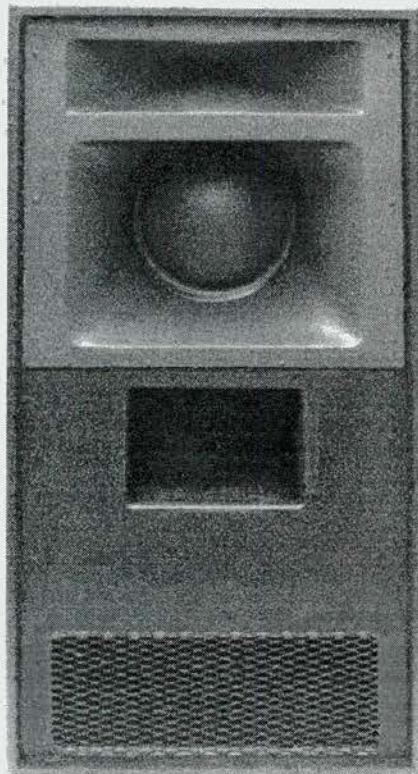
Editors Olympic Note

Winning the Olympics gives the tourism trade a boost, so along comes a lot of extra contracting work for our industry. Concert Production firms will also benefit from increased activity leading up to the games. When the games are staged in 2000, it will have been almost thirteen years since 1988, and not too many will think back to what happened to our industry then.

Remember the bicentenary and Expo? We all raced about dealing with a lot of business that was linked to these events. Cast your mind on to 1990, when the industry had all but collapsed through lack of business. Many contractors, hire firms and suppliers had geared up through the late 1980's to cope with an artificially high level of business - then it wasn't there in 1989. Come 1990 and the filleting began. Jobs were lost, losses mounted - we are only today starting to recover.

I walked the corridors of firms large and small, whose proprietors all asked me what had happened to the industry. I saw much of the plant and equipment installed leading up to 1988 back on the market, often sold at auction for 10c in the dollar. I saw expensive homes sold out from under many in the industry today, who'd taken the level of business pre 1988 as an average.

You'll probably think all business is swings and roundabouts - but if the tourism industry goes into hyper growth again, I say expect a quiet time through the first few years of the new century. But of course this is a long way off, so in the mean time we all need to draw a deep breath and remember 1988.



Pocket Rocket!

All New

Here it is - the all new ARX 922 speaker system, the smaller, louder, trapezoidal successor to the incredibly popular 912 composite system.

And we're only kidding - you can't really put it in your pocket, unless your pocket happens to be 40" high, 20" wide, and 22" deep!* The 922's efficient use of every available cubic inch of box space means that it packs a punch that is the envy of speaker boxes twice the size.

Power Packed

Thundering bass that will really rattle your fillings is coupled with breathtaking highs. The ARX 'PowerDome' midrange delivers a crystal clear vocal sound that traditional double 15" boxes can't hope to achieve.

Totally Professional

The 922 comes ready to work hard, with flying points top and bottom, all ply construction, tough black splatter paint, castor fitting points, plus XLR and EP connectors as standard.

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The 922 is processor controlled by the CU922s, with Interactive System Control™ that provides transparent speaker protection plus 24dB per octave phase corrected crossover functions. It's a Dual Channel processor, too, unlike others that cost over twice the price and are only single channel!

Made in Australia

Yes, made right here in Australia, by real people that you can ring up and talk to, not some faceless overseas conglomerate. Best of all, your dollar stays in Australia where it can be re-invested in the future.

Find Out More

So, if you haven't looked at ARX for a while, now's the time. In over 35 countries it's the new industry standard.

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Call one of the ARX team listed below and they'll be happy to help you out.

*Metrically minded? 1000 x 510 x 560mm

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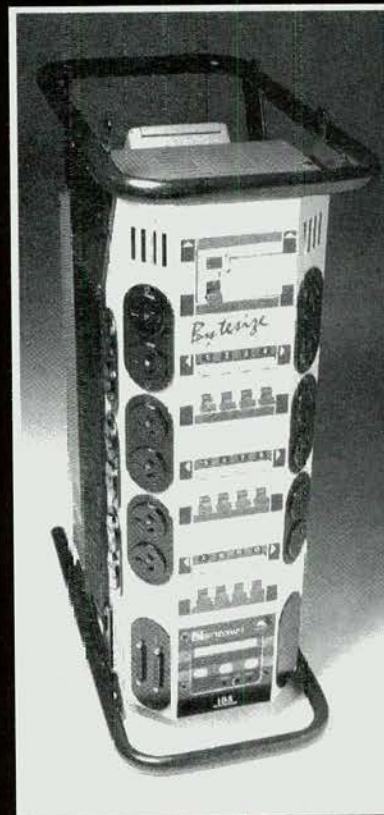
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SHOWBIZ

NEWS & UPDATE

TRADESHOW SEASON ENDS



They came in their thousands, the Public paid \$10 each to get in, giving the Australian Music Association a windfall. Major Music Distributors mounted lavish displays, with Pro Audio and industry service firms taking the exhibitor count to well over 100. AIMS '93 is now firmly entrenched as a biannual event at Sydney's Exhibition Centre.

A handful of lighting exhibitors braved the event, and went on to report substantial sales. Occupying two halls at the huge complex, AIMS '93 proved

the Music Trade has matured, and is cautiously looking forwards. Held just a few weeks after the regional AES in Melbourne, (also biannual) firms like Jards, Electric Factory, Teac, Australian Monitor, Australis and Australian Audio Supplies exhibited at both shows.

With the tradeshow season out of the way, and both this year's shows not due to repeat until '95, the way is now clear to sell through the busy summer season.

Venues, Concerts Noise Threat

'Control of open air concert noise (music) has been an area of dissension and concern for the concert promoter, the venue operator, the local council, the acoustic consultant, the sound consultant, the EPA (Environmental Protection Authority) and the general public', say the Australian Acoustical Society, who recently held a meeting on the topic.

Speakers included Alex Jochelson of the EPA, Peter Knowland - Acoustic Consultant, Noel Neate - Venue Manager SCG and Laurie Jackson - Venue Manager Parramatta Stadium. Now a l and sundry had some valid points but no solutions.

We at Connections think the Music Industry must recognise a severe threat to its future viability and act to protect itself starting today. A campaign to assert the economic strength of the industry and the absurdity of ridiculous noise limits must occur. If not, indoor performances will be threatened next.

Product Bits

❑ **LSC Electronics** released the AXIOM range of lighting consoles at PLASA in London at presstime. These replace the Precept, which was the first workable memory board for everyone, released 10 years ago. Full details in our next issue.

❑ The **Fostex 'ADAT'** is near named the RD-8 and boasting Alesis ADAT compatibility. A demo shell was shown at AIMS '93 last month, importers Syntec are hopeful of stock for Christmas.

❑ **CREST** are well known for Amplifiers - and since linking up with mixing console guru Jim Gamble they've moved that way too. The Crest console line is now represented here in Australia by Production Audio Services - who maintain Melbourne and Sydney offices.

VENUES

Several more venues have closed down in Perth in recent months and bands that traditionally pull healthy crowds are pulling them no more, according to Music Man's Eddie Robertson.

Bad news from Perth. According to Music man's Eddie Robertson, half a dozen venues have shut down in the last couple of months and traditional crowd pullers are pulling them no more.

The popular, grungy Shenton Park hotel has stopped running bands and may become a food hall, while the Floreat, Oceanbeach and Old Melbourne hotels are all but finished as well, he said.

In recent times the Black Sorrows, Boom Crash Opera and the Sharp have also stiffed. The Sharp was the most recent - not one of the band's five shows broke even last month although a tour earlier in the year was extremely successful.

"The live music industry is stuffed. The guarantees of tours are just too high," Robertson said.

PRODUCTS



OPAL the AMP

At \$1600 retail and boasting 2 x 280 watts (4Ω) output, this new Australian Monitor product should make a mark. The Opal 2802 has XLR and barrier strip inputs, with binding post and optional Speakon outputs. An internal fan kicks in to assist convection cooling when needed, otherwise the unit runs silent. Protection features complete the picture. Call Australian Monitor: (02) 816-3544.

SHURE BETA 87

"We compared it against the Beta 58s, against Sennheiser 431s, against Beyer TG-Xs, and it was a clear cut improvement," crew chief and system engineer Bob Weibel said of Shure's new Beta 87 microphones, after extensive prototype testing on Michael Jackson's Dangerous tour.

The Beta 87s are the latest addition to Shure's Beta range of live performance mics and include one wired and two wireless models. A new condenser element with a uniform supercardioid polar response at all frequencies provides tremendous gain-before-feedback. Ideal for live and studio use, say Jands. Call them: (02) 516-3622.

CAD for AAS

Australian Audio Supplies have added the CAD range of condenser microphones to their portfolio. The E100 (right) is a Supercardioid side address unit, and the E200 a multi-pattern side address unit.

Both are designed for critical occasions like recording and broadcast. The guys say they will run for up to 6 hours on internal nicads.

Call (018) 432-910



DMX CONTROL

Showcraft in Sydney introduce their DMX Commander, a handheld pocket sized riggers control featuring a numeric keypad for quick access to any dimmer. 2 scenes can be stored and if required can be blind programmed. An all channel function enables all 512 channels to be set to any % level for quick testing. A preheat function allows pre-warming of filaments. Retail \$395, call (02) 698-3009.



Diffusion Fog

Rather than blat out great chunks of fog which need to be distributed everywhere, the DF-50 is a diffusion fogger. This is not a cracked oil machine, say Coemar DeSisti Australia, rather it uses no heat to crack the vapour. The fluid is food grade quality, so if stranded in a broken down truck you can presumably drink it!? The advantages of a machine such as this are many - not the least of which is the complete lack of melt down potential when it goes wrong. Because of this you could presumably leave it running for the whole 32 hour fluid capacity, to haze your air for superior lighting effects. Call C.D.A. on (03) 467-8666.

TRACKSPOT II

The popular baby moving light from the makers of Intellabeam has been re-engineered to provide more light with a wider beam, say importers GUVT. Light is up 30% from the QT-8500 lamp that costs just \$25. The beam angle is now 12°, and weight has been trimmed. Details from the small but perfectly formed Noel Bourne at GUVT on 008 773-187.

SoundStation

Audio Conferencing is a growing industry, the PolyCom unit (below) is just plugged into your phone socket, then you can con-flab and gab around a table and have 360° sound pickup while you listen to the other party through a speaker. It sells for under \$4000. Call Ramsaudio (02) 477-7377.



VENUES

Bands return to the Charles Hotel in Chatswood on Sydney's north shore this month. A larger stage is being built into the club bar and the venue is running discos on Wednesdays and Saturdays with bands on Thursdays and Fridays from late afternoon on. Mark Wesley is handling bookings on (02) 981 4788.

The Hopetoun Hotel (SYDNEY) finishes up as a venue on October 11. According to booker Matt Elliott, the new owners of the venue have no interest in running bands. Meanwhile Elliott is planning three "huge" nights to farewell the city venue with style.

The Lansdowne Hotel (SYDNEY) is planning a revamp to include a beer garden, a pool room on the first floor of the building, an extended bistro and opening the roof for functions. If plans are approved by the local council it will all be happening in November. "We want to change what we can offer to clientele during the week with better food," owner Simon Lloyd said. "We just want to get Sundays and midweek nights more happening."

The Old Manly Boatshed Restaurant is also seeking approval for extensions to its band and dining room. The revamp will fit in another 60 or so people, bringing capacity up to the 200 mark.

There is still no word on the Tivoli reopening, expected late last month. The venue's phone has gone unanswered for several weeks. The building facade was cleaned up just as we went to press though.

PRODUCTS

Hitech Speakers

Aura are a Californian firm who are into defence and aerospace - and now electromagnetic products such as loudspeakers. Indeed the firm say they found a Soviet patent for a unique Neodymium magnet structure, allowing them to design a speaker magnet that has more magnetic flux focussed at the voice coil gap than any other.

Peter Freedman of Freedman in Sydney has picked up Aura as a product range, and is quite excited. The loudspeaker range includes some unique devices, such as the 'Interactor', which you couple to the dance floor - or indeed theatre chairs. A version is available for car seats, which opens up some great possibilities!

The Aura technology also means no shielding is needed for speakers used near video screens, as all the magnetic flux is aimed at the voice coil. Some interesting products could come from this range. Contact Freedman for details: (02) 638-6666.

CAD LX DESIGN

LuxArt make a package called Microlux 1000 which is a 3 dimensional computer aided design software for stage lighting designers. It runs on PC, AT 386 or 386 compatibles and is said to be easy to use. Best of all, it provides beam angle and illumination studies using the spotlights position in space.

A library of standard spotlights and colour filters is included, presumably this can be user-modified to cater to new additions and local faves like ProLite and Selecon. Call Coemar DeSiti Australia for a demo disk (03) 467-8666

ATM FLY-WARE

This is a complete rigging system that is supported by some extremely well presented printed technical information. ATM Flyware are an American firm, whose founder Andrew Martin presented a seminar at the AES Convention in Melbourne recently.

The firm offer a system the AMFS Series, a loudspeaker rigging system that is compact, modular and rigid in nature, yet maintains an acceptable amount of spatial alignment. The system takes into account the optimal array configurations for the loudspeakers being utilised.

In the AMFS 2X2 series, each loudspeaker Truss Section is manufactured with a low profile 2" x 2" tubular steel - strong enough that an overall top truss (grid) is not required. A connecting bar and quick release pin arrangement allow various configurations of array - which is locked rigid. ATM FlyWare is handled by ESA Audio, (03) 562-4605.

WINNERS



□ Australian Audio Supplies had a 'How to mix PA while eating a steak sandwich' seminar recently. At the conclusion a weigh-in took place with Nicci Herraman guessing and winning a new Afterburner. Dave Croxton (right, above) hands it over.

□ Brian Funnell, pictured far right with his student Mart Basa won a new Shure T Series vocal mic at AIMS '93, courtesy of Jands.



MOVES

Former 3D World editor, freelance writer and computer artist Tracey Grimson has launched Way In Media & Publicity, a new PR and promo co. serving clients in Sydney's inner city. You'll find Way In at 70 Devonshire Street, Surry Hills, NSW 2010. Phone (02) 310 2098, fax (02) 332 3981.

New administration and promotions assistant at Southbeat Promotions in Sydney is Julie McDonald, formerly an assistant at EMI's A & R department.

Showtravel Tours in Sydney has a new phone system & new numbers: (02) 352 9999, fax (02) 352 9911.

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BOSE R & D GUY HINTS FUTURE

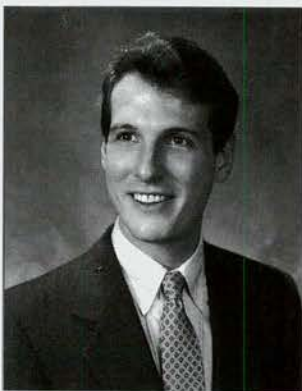
When I got the profile from the persistent Carina Peart, who is the BOSE PR lady, it had Ken Jacob's photo (below) attached. "Carina, this guy looks like a Mormon", I shouted - "do I really need to talk to him?" She told me he'd be interesting, and he was.

Ken Jacob is the Senior Research Engineer in the Acoustic Research section of Bose, where 300 plus people work. "We're a privately owned company, so we don't talk about thing like that", he said.

I've got a theory that if you scratch a product person you'll often find a practical person underneath. Like a Live Sound engineer, perhaps better thought of as an 'old roadie'. Many product types come from a world of theory and maths, while some have actually had their hands on product in the past.

After the usual cautious start I discovered Ken is the latter, he has done live sound, so I figured we could talk about PA together. Bose hasn't been really active in the 'carry away' PS market, sticking to more calculated contracting and commercial products.

Ken shares my view that the portable PA market is oversaturated with product. "What we need to do is rethink" he says. We go on to talk about the way



most portable PA speaker systems are used. "Bose wouldn't get involved here unless we had a more package approach", which goes to indicate an amplifier/processor package.

Where the discussion got interesting was when we talked about what Bose could do in this market. If you take the components used in a small PA, you have foldback (monitor) speakers, amplifiers, and main speakers. Often in smaller performance environments the sound from a performance doesn't get a chance to propagate (form) until you are a few metres or further away from the front of the stage.

Ken HINTED that the age old practice of a speaker either side of the front of the stage isn't necessary - and that a small PA needn't have separate monitor speakers either. The answer here is to design a system that is self powered and protected, and designed to be placed BEHIND a performer - facing forwards. With today's Cardioid and Super Cardioid microphones this may yet happen.

You could do this yourself, but you'd need a speaker system with a fairly well tailored response. I'll bet Bose move in this direction sometime soon.

MOVES

JB's Media Relations is another new name in the publicity game. Founders Barbara James and Georgie Brown boast a combined 30 years experience in publicity with credits for promoting the Moscow Circus, Royal Shakespeare Company, Royal Ballet and La Cage Aux Folles along with assorted films, TV productions, books, videos, products and venues.

James and Brown are members of the Public Relations Institute of Australia and can be contacted on telephone (02) 411 5846, or fax (02) 967 2181.

Events

Tradeshows

- * Pro Vision & Sound NZ, 5 - 7 October.
- * AES New York, October 7 - 10.
- * SMPTE Los Angeles. Oct 30 - Nov 2.
- * LDI '93, Orlando, Nov. 13 - 15.
- * Comdex, Las Vegas, Nov. 15 - 19.
- * NAMM, Anaheim Jan 21 - 24, 1994
- * AES Amsterdam, **NEW DATES:**
Feb 26 - Mar 1, 1994
- * Pro Audio, Light & Music, Beijing May 16-21, '94
- * World Lighting Fair, Tokyo, 16 - 18 June, '94
- * SMPTE '94, (Sydney) July 5 - 8, 1994.
- * Pro Audio & Light Asia, July 6 - 8, 1994
- * PLASA, London, Sept *** 1994
- * Connections, Pacific, October 1994
- * AES 97th, San Francisco Nov 10 - 13, 1994.



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SAM RIGHI

Harbour Agency boss interviewed by Catriona Forcer



Sam Righi is confident enough to admit he started in the entertainment business as a drummer. Today he heads The Harbour Agency which has bands such as Baby Animals, Jimmy Barnes, Diesel, Hunters & Collectors, Crowded House and Yothu Yindi on their books. Infact their listings read like a who's who of Australian music.

"When I was a drummer in a band back in the seventies, I used to organise the PA and the crews etc and I found I really enjoyed it," Sam told me. "I lived with a friend in Melbourne who was a promoter and I learnt from him how to run bands. Premier Artists approached me with a work offer and, to me, they were the Gods of the music industry. I was very flattered. I met them for lunch although I was terrified of these people because I had heard so many things about them. I took the leap. After a couple of years it was decided to open a branch of Frontier Touring Company and Premier Artists in Sydney. This was the beginning of The Harbour Agency in Sydney. I moved with Michael Chugg up to Sydney. I ran Harbour, he ran Frontier"

Sam admits that in Australia it is difficult to survive being just an agent for bands and that is why the five directors of Harbour/Premier are also involved in other areas of the industry. Michael Gudinski runs Mushroom Records and he, along with Michael Chugg and Philip Jacobsen, runs Frontier.

"Frank Stivala and myself look after the day to day Australian artists," said Sam. "We aim to build them up from the small 200 capacity hotels to eventually being able to fill the SEC. Let's use Died Pretty (a band that Sam believes will be a major act for the future) as an example as they're out on the road at the moment. I confer with the manager as to what single will be released and when. Five weeks after the release, as it usually takes that long for a record to have any kind of impact, we plan a small inner city tour of the country. That tour is done purely to promote that single. With Died Pretty it worked really well as we achieved a number 1 single on the independent charts, Triple J played the living shit out of it and, more importantly, we had full houses at every single show we did. At the end of August we'll release the second single - Harness Up - and five weeks later a similar type of tour in each state but at a bigger level.

We've been lucky enough to get Jellyfish to tour here and I managed to marry the two together for one big tour. Infact I've just learnt today that the FM's of this world are playing the Died Pretty "Harness Up" single so it's all going to plan. At the end of September while the single is getting lots of air play and the tour is happening, the album will hopefully be set up for a high release into the charts. The next stage will start another five weeks after the album has been released when a national tour playing all the suburbs will commence.

By then they would have had three singles out, an album and will be drawing people out in places like Parramatta. Firally around February/March, to give the album another hit, hopefully Frontier will be bringing out the Lollapalooza Tour. I hope to get Died Pretty as part of that tour. They will then play in front of 40,000 people in all of the capitol cities. That's a long term six month plan on how to build a band from drawing 200 people to a local hotel to being able to fill two or three nights at Selinas. That's what I do during the day!"

Sam's day also involves arranging the artwork for the bands concerts, booking the press ads, organising the posters to be put up, sending out press releases, fighting with the promoters for the right deal, choosing the right support - the list goes on. All this has to be done for several acts at once. "We do represent a lot of acts but we do have a lot of people work here," Sam said. "The advantage of that is that if a particular promoter of a venue tries to screw a band by not paying them we can refuse to supply them with further acts and, as they need to run 52 weeks of the year, that'll affect their business. It helps a lot of the smaller acts because we can place them as support to our larger ones."

With Harbour/Premier linked to Frontier, they get the opportunity to place their acts as support to the overseas touring acts like The Cosmic Psychos with Living Colour. Venue wise, Sam believes Melbourne is ahead of Sydney.

"We haven't got a decent, major city venue that holds 1000-1500 which is really stupid," he said. "There are a lot of venues in suburban Sydney but unfortunately there aren't the bands to keep them running. Because of the way radio has changed in this country, running "Classic Gold" formats, it's effected the live scene. A lot of good bands are not breaking as quickly as they used to in the eighties. There are good bands out there - Judge Mercy, The Poorboys, Horsehead, The Exponents, Scary Mother - that can work around the city and the suburbs. But a lot of bands think they've got to become hip and groovy, inner city bands first and foremost and they're forgetting about the suburban audiences. You really limit your record selling potential by only playing the inner city. So all these suburban venues are sitting there doing nothing and being forced to use cover bands. Consequently the cover bands end up doing better than the original artists as they are consistingly playing where the people are.

"Original bands today should concentrate more effort towards the suburbs instead of only worrying about filling the Lansdowne Hotel."

Profile

Pro Audio showrooms across Australia's East Coast . . .

Sydney: 432 Liverpool Rd, Enfield Ph 642 5344 Canberra: 85 Wollongong St, Fyshwick Ph 280 6411
Melbourne: 2 Florence St, Burwood Ph 808 2111 Brisbane: 84 Newmarket Rd, Windsor Ph 857 6855



PRODUCTS

COLLAR MIC



Anchor Audio have designed this neato gizmo (left) which has a gooseneck and tiny mic you can position just so. The mic is a cardioid condenser, wanting phantom power. It has a 1.2m cable, and can connect to wireless transmitters or direct to PA. Call ESA (03) 5624605



MIX CD LIKE LP

Vestax's new CD-11 dual CD player has a double suspension system for both CD drives. Up to 8% pitch change either way can be dialled up, and a joystick is provided for Pitch Blend, Scan and Search. Cue Point allows cueing at any point on any track with instant start, and the unit will fit in a 19" rack or table mount.

Australian DJ Supply Co say the unit allows for lightning fast remixes and rapid swapping of CD's. They are distributing the CD-11 Australia Wide, following a deal they cut at the recent AIMS show. Retail \$1995, can call them on (02) 564-2277.

**DEADLINE FOR NOVEMBER
ISSUE: October 15th!**

ACCOM

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Named after the birthplace of the goddess Aphrodite in Greek mythology, the Kythera is located within easy walking distance of downtown Canberra.

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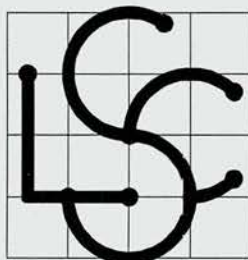
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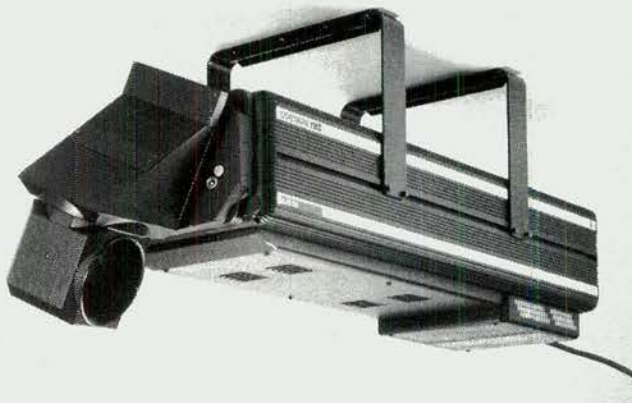
COEMAR'S NEW 360°

A logical next step in the march of the moving light is the NAT TM2500 (right) which was previewed at PLASA just before press time. The TM stands for total movement, with the head allowing 360° pan, tilt and rotation. This is the flagship of a new line of new advanced technology products, say Coemar, thus the NAT designation. Indeed the TM2500

is a flagship, with a 2500w MSR lamp source giving it the greatest output of anything that moves.

In keeping with its flag ship status, TM2500 has an iris, programmable focus, an ultra-high speed zoom function for effect explosion creation, and two gobo wheels. These provide 12 single and 24 combinations, rotating gobo effects in both directions and in combination give a new contra-rolling effect. Full yellow magenta and cyan colour mixing allows virtually infinite combinations.

The device is called an 'articulate projector' by its



road testers, who are on tour through Europe with Eros Ramazzotti. This is a stadium level tour, with the NAT TM2500 keeping company with a Turbo Flashlight PA system and Midas XL-3 console. Big time.

The fixture has a remote ballast that can be positioned up to 20m distant, and all manner of frills including prisms and software tracking.

This new lighting device is scheduled for official release at LDI in Orlando next month. For more information contact CDA (03) 467-8666.

The Barron Townhouse,
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A few minutes walk from Adelaide's CBD, casino and entertainment centre is The Barron Townhouse.

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Rates range from \$89 for a standard single to \$140 for a deluxe Executive room. Children under 12 are free. 164 Hindley Street, Adelaide, SA 5000. Phone toll free 008 88 8241 or (08) 211 8255, fax (08) 231 1179.

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Write in Reader Service number: 138

PEOPLE & MOVES

□ **GREG WEAVER** is the new Hire & Admin Manager at Revolver Audio, who also have Showcraft colour changers available for Hire. (02) 698-3288.

□ Soundwarp Audio Services is the new venture for **BILL SYRATT** and **MEREDITH BROOKS**. They do maintenance and repair of studio equipment, and post production work. Call (02) 419-3214.

□ Production Audio Services have moved the NSW branch just across the road to: Suite 407, 220 Pacific Highway. Call **BYRON DIXON** (02) 954-5100.

□ Apogee Filters will be handled by **LOUIS MAILER** at Sound Devices following the departure from our shores of Shane Morris. Call Louis (02) 283-2077.

□ The C:MAX wearable monitor system is now represented in Australia by Damien Gerard Sound Studios. Call **MARSHALL CULLEN** (02) 692-9915.

□ **PETER (ZIGGY) JENSCH** is now production manager for 'One For The Road Management', part of Ravenswood Records. Call (02) 319-4615.

□ **DANNY YEZERSKI** has been working for six months as Tech. Coordinator for Key Largo, but is still running his company Technical Productions. New contact no's: (02) 388-8377 or c/o 221-7900.

□ **PETER DURHAM** of Durham Audio Visual has taken over TASC - The Australian Sound Company. **GARY ASHMORE** from TASC has joined Durhams as Operations Manager. Durham AV operates in the corporate and event hire field, taking in TASC will enhance their audio area. Call: (03) 690-2288.

□ **ELAINE AULD** has taken the administration portfolio at Connections Publishing, where she has learnt to expect the unexpected. "It's OK, I've worked in worse places" she quipped, loading the gun.

CONCEPTS

□ **AUDIO VISUAL DESIGNS** ran an open day to promote their new shop at 51 Ramsay Street Haberfield NSW. They offered free sausages!

□ **BSS** of Thebarton SA staged a 3 days trade show in Adelaide, by all accounts they had a great turnout. Congrats Bob & Sonja Dixon!

□ **TURRAMURRA MUSIC** have 'LiveWire', the first mini-magazine for customers. Call (02)449-8487.

□ **THE AUST. DJ SUPPLY CO** have released their 2nd edition of their magazine/newsletter - also called 'Livewire'! A good effort, call (02) 564-2277.

□ **MUSIC CONTAX** is Brisbane's newest Musician Contact Service, based at Music Work in the Valley. Greg Dodge started the shop, and got Music Contax going by teaming up with Skip McDowell. They find production people too. (07) 252-5320.

Product Bits

GENELEC's 1031A Self Powered near field monitors have found homes with Opus Arium (Post Production), Melbourne Uni and Flint Webster Studios recently. The bi-amplified monitors utilise an 8" woofer and a 1" dome tweeter which is electronically crossed over at 2.2k. Priced at around \$4600/pair. Genelec are handled by new firm Studio Connections. (03) 723-4300.

GLS MANUFACTURING are a new fabricator of speaker boxes and roadcases, run by Gerald Stewart. Contact him on (02) 316-8646 for a quote. He also does fitouts and joinery work.



MEDIA REVUE

By Jennifer Temm

Sydney has a new freebie called *The Sydney Weekly*, launched late in August.

Editorial staff includes editor-in-chief Eric Beecher, formerly editor of the Sydney Morning Herald and the Melbourne Herald, columnist Geraldine Doogue, "gardening diarist" Hazel Hawke and arts writer Nell Schofield who presents ABC TV's arts program *Review*.

The paper follows the launch of sister publication *The Melbourne Weekly* last October. It devotes a couple of pages to the arts each week and includes theatre, film and music reviews with a "What's On" section covering theatre, exhibitions, classical performances and the like. Early issues are running at 32 to 44

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Write in Reader Service number: 122

Selecon Blitz

17 new or enhanced luminaires made up the Selecon range shown at PLASA tradeshow in London last month. Most recent addition is the ARENA 2.0/2.5kw zoomspots (below), which come in three models. The Narrow variant allows spread

from 8° to 16° @ 661k candelas, Medium: 14° to 32° @ 509k candelas, while the wide

model has a beam spread from 20° to 37° @ 298k candelas max. Lots of light!



CD X2

DENON's Double CD player DN-2700F (below) has a three range pitch control for minute adjustment - Across 4%, 8% or even 50% ranges. Instant start, a 16 bit sampler and a jog wheel, even random play - this creature has a lot of features. \$3799 retail from AWA Distribution in your state.



New Peavey

The PV-8.5C amplifier delivers 425w/ch and has DDT compression for speaker protection. Retail is \$1495, contact Australis, (02) 905-3142.



FIREWORKS EXPORTED

Disney Enterprises have been exporting fireworks from Sydney's Howard & Sons continually for over 15 years - and the firm are opening markets in Europe and elsewhere. Fireworks is an exact science, far from the pyromania chaos of those old fashioned days when you could buy the stuff over the counter. Or when Sherbet blew up on stage!

Howard & Sons are leaders in this field, and competed in the Benson & Hedges Symphony of Fire, an international fireworks competition in Toronto, Canada. "Our display was fired in the most horrendous weather conditions. Wing rain, low cloud, you name it, we experienced it, yet we took second place. It was the closest decision ever submitted by the judges", says Marie Louise Howard. They went on to win first place last year in Vancouver, an all Australian made triumph.

Ground display items available include 5 inch fountains which burn for ninety seconds and reach heights of over 65 feet (20 metres). An 'EXTRAVAGANZA PACK' is available for do-it-yourself fireworks displays, and it comes with a plan showing how to choreograph the show!

Started in 1922 and still a family show today, Howard & Sons are firmly entrenched at the top of the fireworks tree. Call them on (02) 627-1694.

pages with 55 to 60 per cent advertising, mostly made up of real estate ads.

The Sydney Weekly is published by The Text Newspaper Company, 83 Alexander Street, Crows Nest, NSW 2065. Phone (02) 905 4966, fax (02) 438 3550. The glossy tabloid is distributed free to 85,000 households from North Sydney up to Turramurra and out to the Northern Beaches and Hunters Hill.

The new look A4-sized *Juke* appeared in Brash's stores as promised last month with a reasonable 30 per cent advertising on 48 pages and an initial print run of 30,000. Too bad about the glaring whoopsie though: the photo of Celibate Rifle Damien Lovelock captioned as Nirvana's Kurt Cobain.

Otherwise the mag comes up to scratch with a "broader" (read "younger") appeal than the tabloid format *Juke* with stories on what Dannii Minogue is up to, trivia questions, disc reviews and interviews with Diesel, John Mellencamp and the Baby Animals.

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Write in Reader Service number: 130

Phil Tripp Writes....



Some exciting changes are happening in the mainstream music industry, beyond those we saw at the recent AIMS show. (and HEARD! **Boy** did we ever hear them...over and over, louder and LOUDER!!!)

On the top end of the scale, **Michael Smellie**—former head of BMG Polygram group and former Chairman of ARIA and PCCA trade associations—has left his position as the CEO of the MMA Group where he's been for the year since leaving the multi-national club. He takes over as the head of BMG Records on October 6, replacing **Stuart Rubin** who will be working in BMG's Asian marketing domain.

Smellie's job is to rescue BMG from the basement of multinational market share, a job he did incredibly well with Polygram. BMG recently announced that MCA/Geffen/GRP would be staying with their distribution for five years, a saving grace since that mini-major accounts for nearly 50% of BMG's turnover in this territory.

***Export Music Australia** will announce the Australian bands that are going to be showcasing in Japan as part of the Wizards of Oz tour that will take place in various cities during the Celebrate Australia period. Two groups have been confirmed and a press conference will be held in October, possibly with the P.M. launching it, to reveal the bands.

EMA is also producing an Asian Market Survey which is being edited into a 300+ page book for the industry to spur exports of both artists and services to 12 specific territories.

*It is interesting to note that the **Federal Government** (through the Department of Industry, Technology and Regional Development) has empanelled a study group of political and music industry professionals to determine how the industry's exports can be spurred, especially in Asia. Even though EMA has done a great job with

globally promoting contemporary music, the polities are wondering about classical and jazz—whether they have an export potential. But three areas of representation this new committee is lacking in are music technology, professional production services and recording facilities—audio and video.

While there are artists managers, publishing and record company representation, no one speaks for studios, sound and lighting companies or industry professionals whose services and goods hold some of the greatest export potential outside of artists, song copyrights and recordings. Why does the pro-side of our industry have zero representation in Canberra nor in the mainstream industry?

*I had a friendly call from **Tom Misner** who pointed out to me in his friendly way that in my writing about why audio schools didn't ask for hearing tests for potential students, I was wrong in stating that an audiometer tested hearing. He pointed out that in all his years of running audio schools all around the world, he'd never heard of it, it didn't exist and I didn't know what I was talking about.

Always one to accept an error, I consulted the audio Bible, "The Audio Cyclopedica"—and there it was on page 1261, item 22.42. "An audiometer is an instrument used for measuring the acuity of hearing..." with a hefty three page description of the device and how it works. So the question to Tom and other audio school operators is, "Why don't you require a hearing test for those who are ready to plop down their money?" And also, "Should there be a set of teaching standards and curriculum approval for those audio engineering courses?"

*Those unsuspecting music industry folk who read a full page ad in **On The Street** a few weeks back that started out with the word (in huge type) 'Qestion' (their spelling, not ours), might have

been tempted to dial the 0055 number for the AMBI Fax Line to see what all the fuss was about. Those who did got a sharp surprise on their phone bill this month since there was no indication in that ad and a subsequent one the next week of the 70 cents a minute charge for accessing 29 pages of garbage (*opinion -Ed*) information. An average 35 minutes total to access what is essentially a list of bands with very little information comes out to \$25 if one just pressed the start button and got all 29 pages.

Aside from it being illegal to advertise pay phone or fax lines without giving the amount charged, there's no way to get in touch with any of the artists listed unless one has the Australasian Music Industry Directory and even then, some of these bands are so obscure, you couldn't find them.

MEDIA

(continued)

Sydney's *Drum Media* wins the street press stakes again with issues running steady and strong at 72 pages on about 66 per cent advertising. Melbourne's *Beat* comes in second with 60 to 68 page mags in recent weeks on the same percentage, with *Inpress* and Perth's *X-Press* running close behind with 60 to 64 page issues on about 60 per cent advertising.

Adelaide's *Rip It Up* was up slightly with 8 pages (62 per cent advertising) and Brisbane's *Time Off* is holding steady at 32 pages (63 per cent ads).

Whoever is subbing at *Beat* magazine needs to lay off those oysters with rhino horn

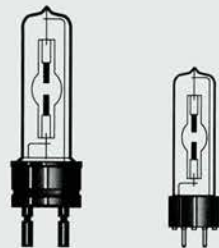
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AUX 2

**INSIDER NEWS for THE SOUND,
LIGHTING & STUDIO BIZ**

It can be told now. The Pro Audio & Lighting tradeshow in Singapore attracts more than visiting enthusiasts, a discrete throng of female sex workers practice their trade like anywhere else. Sitting at the bar at the Top Of The Town was Norman Court from Topstage Productions in Canberra. A very nice looking lady sat with him and engaged him in chat. What you do, big boy? she asked. When Norm had explained his gig, he asked her what she did. "I working girl", she replied, licking lips. "Yeah, but what do you do?" the cerebral Norm asked again. "I working girl, you know- WORKING GIRL". Of course Norm didn't get the drift, so he asked again! The lady grabbed the nearest ear on Norm's head: "I a WORKING GIRL, you STUPID AUSSIE!" she bellowed at range zero into the seized ear, & stomped off. Norm's very nice girl at home, Vanessa Carlin, thinks he is naive, but a good boy. You dork, Norm!

SEND YOUR GOSSIP to the AUX 2
lowlife: PO Box 439, Epping 2121 NSW,
or Fax: (02) 876-5715.

AIMS '93 was a long, slow haul with two late night closes. So it was tempting to bugger off early if you thought you could, and several operatives from a large MI distributor were spotted at a footy match on the Sunday when they should have been manning their stand. We know who they were.

The Live Theatre at AIMS '93 featured production from Centre State, Alan Brown revealed he has a part time job up home in Orange, NSW. Seems Mrs Brown manages a local funeral home, and on occasion calls in Brownie to pilot the hearse. This confirms a sighting we had recently on the long and dusty road to Canowindrah - of a hearse clocked at 185kph, a sombre looking guy at the wheel. At least the customers don't complain!

Moving Sony Music Australia's studios from the Cappucino belt in East Sydney to the wide open spaces way, way out in Western Sydney has, of course, been bad for staff morale. They seem to be approaching mutiny, according to trade scuttlebut, a move like this always costs some staff- but how many will leave?

Performers 'punking out' on stage beware - band Swoop were recently forced to pay \$500 damages to a young woman in Sydney hit when a member threw a guitar off stage. The media quickly jumped on the incident.

Jands Electronics boss Robert Young and engineering guru Ian Messner from Jands Production Services have a rally car entered in the Targa rally, scheduled for 1994 in Tasmania. The RS-1200 is under complete re-build now, and various unfortunate Jands suppliers have been bitten for sponsorships. Connections offered \$200 for the sun visors but so far have not been successful. It may be because we plan to place the smiling visage of Duncan Fry on the inside of each visor. Long term readers will recall an ugly spat between Messner and Fry - of course the idea of the Fry face beaming down at the hard working team for endless hours may be a little hard to take. We'll hold out another month or two and up the offer In the meantime, call Robert Young if you'd like to buy some valuable advertising space on the car. He still has the odd inch or two available, so we have been told!?



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Hire Co Rip Off's

After losing \$30,000 worth of sound equipment to 'runners' who hired with false ID in just a few months, we'd gotten both desperate and tough with our loved customers at my old hire firm.

Consider the guy we hired a PA to each week, a repeat customer who always paid. We knew where he lived, and even with whom. It was a cosy, ongoing relationship. Until his panelvan got ripped off with our gear inside. Our contract held him liable for loss or damage - and we had no choice but to go him for the \$15,000. He didn't have a chance in hell of paying, so we lost a hire as well.

We built a business based on a lot of small hires, so the cross section of screwups was exponentially greater than most other people experienced. By far the biggest problem was the desperate junkie hirer who didn't care if you took his/her photo.

Insurance, you say. Well and good in the case of the guy above, who had his van ripped off. We did eventually find a blanket cover that didn't need us to nominate inventory on the proposal. However you cannot insure against fraud, if someone rips off your gear by putting one over you, tough.

Today's photo license means you don't necessarily need a photo of each customer - but of course think about the customer walking out with the photo license in her purse. You still haven't got her smiling visage on file to send to the feds, now have you? Photocopy the licence WITH the hire contract, so both signatures and the picture are visible. You'll still get ripped off if you don't qualify this customer.

It's a numbers game, and unless you are very, very carefull, your number is next. **Julius Grafton.**

MEDIA

(continued)

sauce. Recent headlines have included, "Love Comes In Spurts", "Screaming Tribesmen Bump & Grind", "Get Hard", "Lick Frenzy" and "Come Together". All in the one issue.

Chortles and guffaws emanating from Epping in recent weeks weren't just because of Simon Day's nudity in *Black and White* magazine (Ron Peno eat your heart out) but also a response to the mock up of a *Juice* cover on the back page of *Vertigo*, UTS' student newspaper.

Featuring Stan Grant in naked Terence Trent D'Arby mode and entitled "Puice", its teasers included "Regurgitating Spin", "In Bed With Angie Hart's Grandmother", "Toby Creswell sucks up to INXS (Yet Again)", "U2 On The Cover and Every Other Page", and the "A to Z of Alternative Culture (brought to you by Diet Pepsi and Reebok)". Tee hee.



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HOW WE GET RIPPED OFF

Jennifer Temm asked a cross section of Hire Firms about The Rippoff.....

Troy Music (South Yarra) - Luke Troy

We've had some Greeks come in here, take the equipment and go overseas and you never see them again. It's especially Greeks. It's happened three times in the last two years and we've lost about \$20,000 worth of equipment between the three of them. We lost a Yamaha EMX2300 and Electrovoice speaker boxes - they really like them. They take the most expensive stuff. They had the right IDs but we couldn't do anything about it, they'd gone back to Greece.

Now we ask for three IDs: a drivers licence, passport and a credit card so we can call up while the customer is there.

Topstage Productions (ACT) - Steve Nano

I've been here for 5 1/2 years. There was a couple of ripoffs about three years ago now and that was a big problem. They didn't have photo licences then. A guy came in with a false licence and he'd memorised the number of the hotel he was staying at.

Osmond Electronics (S.A.) Tim Gladdis

We had a beauty last year. This girl rang up wanting a 12 channel desk, and the next day the desk came back - there were some problems with it. They just had a sedan, we called the cops. We found out later she'd done it about 16 times. She had a terrible habit and a two year old kid. I mean, I felt sorry for her. The biz is an honour system-if a person is prepared, they'll take you.

Electric Sunshine (Syd) - Phillip Cullen

We insist on pre-bookings by phone and a phone number and we'll phone them back if they're a bit dodgy and ask them something simple about the set up. They must have a vehicle or we won't hire to them. When they come in we check their front and back number plates are the same. There's no insurance cover for that sort of thing.

But if people are out to rip you off they will. I'm always suspicious of people we've never dealt with before.

Grafton Sound - Chris Royal

We have lost gear, the last one was a Soundcraft and before that it was a large, 16 channel system. \$30,000 worth. We believe it was shipped to Greece. On the day the guy hired it he flew out. It's suspicious when non technical people come in.

Sound on Stage - Karen Hewitt

We've been pretty lucky but I scare people, I put the fear of God into them. I ask for licence ID, information. Actually a real junkie looking guy came in not long ago and I said no way - and it turned out he was a really important film director.....!

AROUND THE NATION

◆ **Arena Technical Services** have been busy on the Corporate Front with several events for both David Jones and Nutrimecs. ATS supplied both Lighting and Audio for the 'Naturally Australian' fashion show with Mick Stanic designing and operating the Lighting and Matt Doherty on Audio. The Nutrimecs events were held over three nights. On Monday we found 'Gorgeous' George Gorga on Audio and Gary Brokenshire on Lighting, in Hall 5 at Darling Harbour. Wednesday was a Fancy Dress/ Bush Dance Theme with David Quinn on Audio and Dave Fenton operating Lights at the Overseas Passenger Terminal where 1500 frolicked among bails of hay and a grain hopper. (Can't you just see them applying the cleansers and moisturisers later in the night.) Finally, Thursday saw the return to Darling Harbour Hall 5 with Mike Waters on Audio and Gary Brokenshire on Lights. The event co-ordinators, stretched their imagination's to include some CanCan Dancers which I'm sure the good clean ATS ops managed to avoid.

◆ In Queensland we found **Noel Anthony** suffering (not to) quietly at the 10 day 'Festival of Townsville'. As usual at these events you get to hear the best and worst of what entertainment can through at you, and typically the worst was the home-recorded cassettes, lovingly presented to the audio operator, for the use of the folk dancers. Yes! Dutch, Indian, Australian or Korean, they are always the same, and then the organisers ask you what is wrong with your PA. Will they ever learn? In the meantime the Deltamax System, with Systems Engineer Russell Coffee and Audio Op. Steve Scanlan, was out on a acoustic tour with Rick Price who was performing in various Civic Centres to audiences from 500 to 1000. It's good to see Rick get a profitable tour under his belt. (What's THAT mean? -Ed)

◆ **Top End Sound** have had a busy month, the main feature being the 'Ord River Festival' in Northern WA. Top End have also been upgrading and diversifying their equipment and transport list with the purchase of a 26' Isuzu and a Klark Teknik DN3600 Programmable Graphic EQ. Colin West tells us this is the first one of these devices on the road in Australia and is happy with its performance to date. Top End have also been diversifying their business further by establishing various divisions under the main masthead, to cover Conference Audio Visual, Graphics Animation, Video Walls, Driveway Hire and Mobile Discos/Video Library. The next month will see Top End working with James Morrison and Margaret Ulrich as well as various other events. □ **Caroline Grafton**

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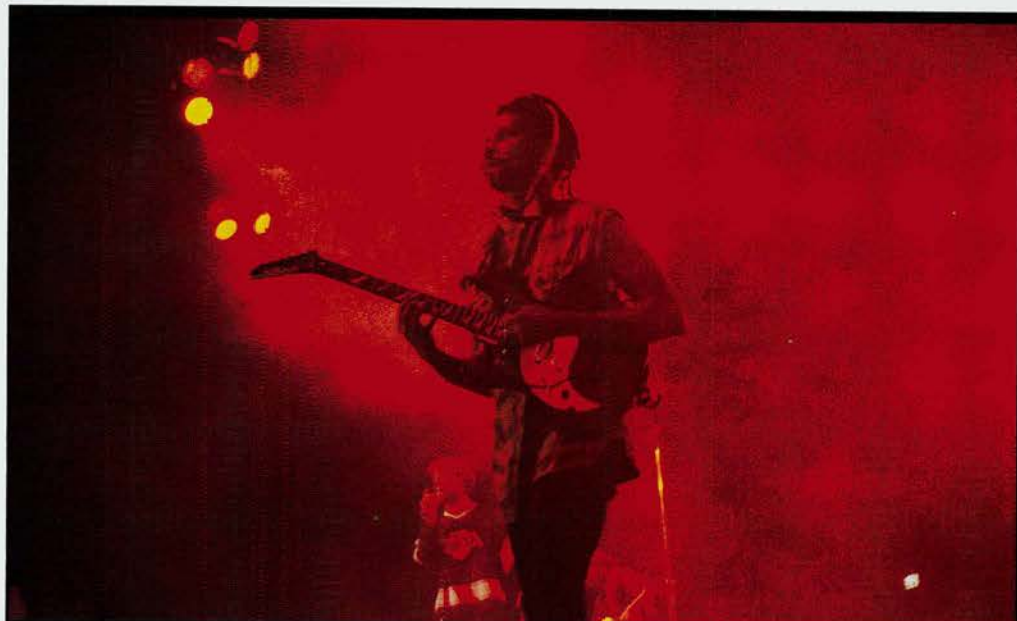
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LIVING COLOUR, LIVE

"We're not here to pick up chicks," stated Lee Popa, sound engineer with Living Colour. Apparently the band and crew members are more interested in Go-Kart racing and good karma. Whatever, they put on a good performance in front of a very packed Hordern Pavillion (which helped the quality of the sound in there) with a Turbo TMS-3 PA and a Midas XL3 desk. Effects were four SPX900s, one programmed for the drums, one for the vocals, one for all the delays on all the vocals and another for the auto panning.

"I can change the complete verse, chorus and structures of the songs by using the auto panners or the reverbs," Lee told me. "I like it loud, so does the band, but we try not to be deafening. We try to be conscious of the people down at the front although I like the punters down front to really hear the PA. The kids that stand in front of the band are really into it so I try to have a little of the PA turned in towards them." Jands supplied Production.

The doors were running late on the night due to the fact the gear had not arrived from the previous nights gig in Brisbane until 2pm, the crew following an hour later. Rick Dowrey, not only the lighting designer but also the tour manager, was busy programming right up until the last moment.

"Something happened to the Intellabeams cues," Rick explained. "Something had wiped all the subs out from the board but we got it back."

The lighting consisted of a 40ft front truss with narrows for the mic position, mediums for upstage

washes, two Intellabeams and Raylights for specials. Originally Rick was using Lekos for his 'specials' because they had a tighter beam but he didn't want the bother of having to focus them at every show. Only being here for four shows, Rick was trying to make things as easy as possible without compromising himself. The main feature of the lighting were the three moveable pods of lights suspended from the back truss. Each pod is surmounted by an Intellabeam and filled with a jumble of Raylights as well as six Lekos.

"I think it's pretty efficient for its size, I'm off the hundreds and hundreds of lights idea. I use the Raylights because I like the speed of them and they complement the 'punch' of the music. I've got twelve colour changers and I like back lighting especially when you're doing metal music which is - to use a cliché - 'in your face'."

One problem at the show was the copious amounts of smoke billowing forth from the stage. "Oh you noticed that," laughed Rick. "In the afternoon it was perfect with little wisps of smoke which was all I wanted for the beams, gobos and Intellabeams. All of a sudden it started coming out in buckets."

Rick worked an Avo board and the Intellabeams were run from an Intellabeam controller. "I prefer to have an operator (in Australia it was Sasha) with me," he continued. "I like working with another person. I have ideas that I want and I tell them but they get input as well." □ **Catrina Forcer**

MEDIA

(continued)

The much promised Australian Music Business Index still hasn't appeared but publisher Noel Crabbe promises it will be "very, very soon".

Crabbe assures us the reason for its delay - the AMBI directory was supposed to be out July 1 - is its size.

"It'll be out as soon as we finish compiling it," he said.

"We've been compiling it for six months now and we've got full time staff on the job - it's three times the size of the competition. Just to give you an idea of it, their artists section has about 280 listings. We've got 3000."

Meanwhile the delay and the AMBI fax information service promoted full page *On The Street* ads has caused a on-going row between Crabbe and Stuart Coupe who writes *Drum Media's* industry gossip column.

Coupe originally faxed across a couple of questions, querying the publication date of the directory and asking for six of the alleged 10,000 names who regularly used the AMBI fax line to run an independent check on the service.

OTS retaliated with a swipe headlined *That Faxing Coupe*. The following week Coupe got his own back by printing the whole story, and questioning

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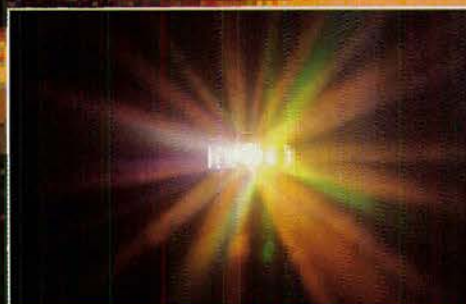


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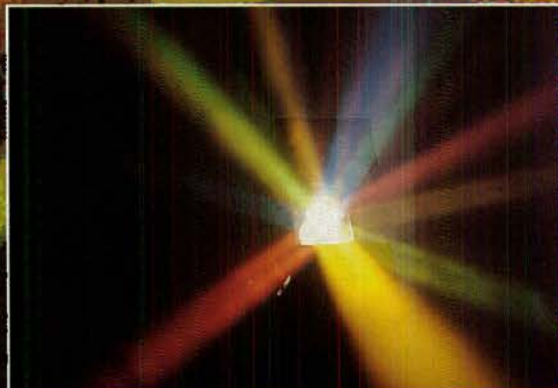
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CATRIONA FORCER'S PRODUCTION SNIPPETS



◆ **Steve Swift**, Melbourne based lighting designer for bands such as Crowded House, is currently working on a design for the upcoming Steve Miller tour. He'll be ably assisted with that whizz kid on the Vari*lites - **Dave Harding**.

◆ One of the hottest shows playing to packed arenas around Europe at the moment is the Depeche Mode Devotional World Tour. It features two of the hottest products to recently hit the road - LSD's new Icon automated luminaire and Turbosound's Flashlight PA - and by several reports is quite spectacular. Lighting designer is **Patrick Woodroffe** (catch his work at The Blues Brothers) and lighting director/icon operator is **Mark Payne** who was here last year with Simply Red. The visual centre-piece of the show are the dramatic films produced by **Anton Corbijn** whilst the stage is fairly simple. Front of house sound is mixed by Jon Lemon. One gig was held on a french beach where the opening number coincided with the opening of the skies and a huge electrical storm of thunder and lightning raged. All were impressed with the lighting directors supernatural powers.

◆ The line-up for the 3rd Big Day Out keeps growing. Although promoter Ken West is still finalizing the line-up, it looks like we'll be seeing The

Ramones, Ride, Beastie Boys (are they still around), Teenage Fanclub, Cruel Sea and Tumbleweed.

◆ **Peter Rooney** will be emerging from his desk at Jands/Vari*lite to take control of the lighting for The Worlds Biggest BBQ on October 10th. Most of the lighting will be white to bring up the daytime levels for the television cameras.

◆ **Lenny 'I've got something better to do' Kravitz** has been touring Europe with a lighting rig inspired by the dome of lights featured in the 'My Way' video. The main feature is a decahedron pod built from 10 pre-rig sections. The pod incorporated 60 Colourfaders and six Intellabeams to compliment the Pars as well as a 2.5kW HMI lamp in the centre. The generic lighting is controlled by an Av QM500 whilst the Colourfaders and Intellabeams are run from a Wholehog console.

◆ Theatre lighting designer **Jamie Henson** has been appointed as Technical Director for the Newcastle Civic which is currently being totally revamped.

◆ It looks like later this summer we'll be seeing Australia's first **Lollapalooza** tour and acts so far rumoured to be appearing include Arrested Development, Porno For Pyros and Rage Against The Machine.

MEDIA

(continued)

Crabbe's reluctance to answer his original, simple questions. His most recent move was to call the fax line himself, to receive 29 pages of band listings - without phone numbers or faxes. Many of the listings also lacked entries under the categories of genre, record company, and management/booker. Coupe's now waiting for his phone bill to see what the call cost.

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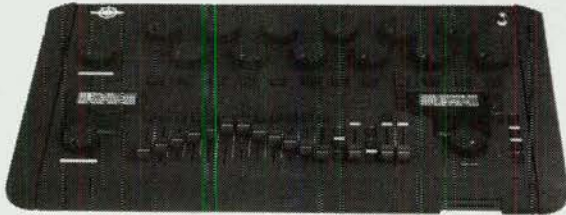
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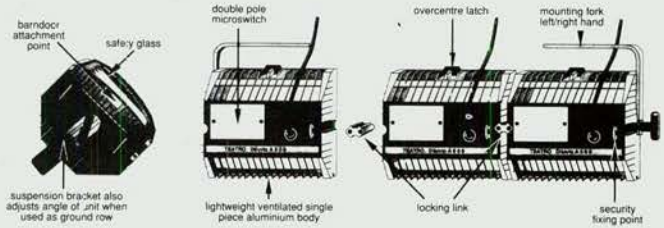


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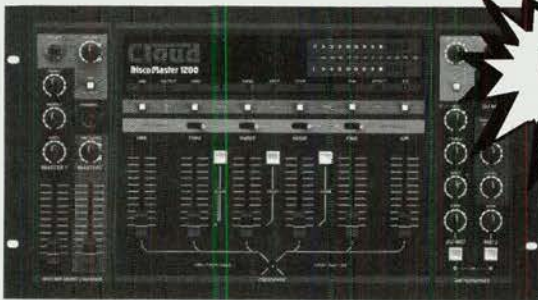
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Cocos Nightclub is now one of the largest and most popular Up-Market Nightspots/Dance Club on the Gold Coast. After a period of 'ack of direction' ownership of Cocos changed to Sam Giufre who took control in December '91. Sam, immediately commenced refurbishment to both decor and equipment specification list. After forethought, marketing and the typical expense involved in upgrading a club of this calibre, Cocos now boasts near capacity crowds of six to seven hundred punters seven nights a week.

Situated in Broadbeach on the Gold Coast, Cocos offers two bars a large dance floor and has been designed to allow customers to integrate throughout the venue in a 'Total Party' atmosphere. A courtesy bus fitted out with a music system (to gain/retain that party mode), is also provided to revellers to and from the heart of Surfers Paradise.

In the otherwise casual environment of the Gold Coast, Cocos allows their clientele to mill and move, get dressed up to get down in a class venue, away from the stubby and thong set.

Manager: Tony Fazio

Booker: Lisa Knight

Lighting Design: Mick James Electronics

Lighting Operator: Melanie Maddox

Sound Design: Mick James Electronics

Main DJ's: Trent Maksimas and Shaun Clarke

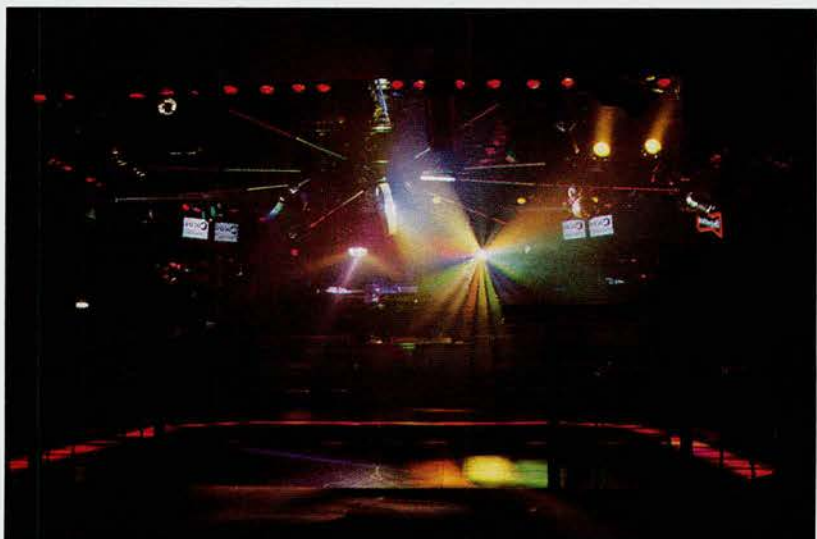
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AUSTRALASIAN MUSIC INDUSTRY DIRECTORY

As part of a new alliance, Connections now share data with Immedia!, who publish the Australasian Music Industry Directory. These changes update the July edition, which was the 11th consecutive issue of this 250 page reference guide to 'who's who' in the music business.

• Juice (the band) are now being looked after by **Russell Thomas** and **Rick Sutton**.

• **Julie McDonald**, formerly of EMI has been appointed Administration/Promotions Assistant at Southbeat Promotions.

• The **Jackson Code** have signed to rooArt off-shoot, Ra Records.

• **Blue Ruin** have recently signed with independent label Foghorn Records.

• **Gavin Purdy**, who was A&R Manager for Sony's pseudo-independent label Raw, has left.

• **Gina Karpman** has left Under New Management for Singapore, replaced by ex rooArt marketing assistant **Michael Tame**.

• Former Price Waterhouse CPA **David Cohen** has been appointed to the position of Financial Accountant at the MMA Group.

• Former EMI accounts and promotions assistant **Raelene Turner** has moved to IMMEDIA! PR as a directories assistant.

• Ex Drum Centre/Music Centre staffer **Jennifer Yuen** has started in a split position with IMMEDIA! and Music Staff. She'll be dividing her time between the advertising side of the Music Directory and working on client acquisition at the employment agency.

• **Anna Young** has left IMMEDIA! as a publicist to take on management of a Sydney band and to pursue her acting career.

• **Sharon Weizenegger** has been appointed Martin Cass's "right arm" at the recording studio and audio engineers school Tracking Station/The Academy.

• **Michael Smellie**, who recently resigned from RooArt, is almost certain to take the position of heading BMG in Australia.

• **Peter Jensch** (Ziggy) has been appointed head of Ravenswood Record's newly formed management company One For The Road Management. Ziggy has been appointed Production Manager and will ease the burden of **Bob Armstrong**.

• Newly formed record label **Troy Horse** announce their first three signings: Disneyfist, Upsidarium and Bloodloop.

• **Michael Gudinski** has taken over the management of New Zealand singer/songwriter **Annie Crummer**.

• **John Woodruff** has resigned as Managing Director of the Imago Recording Company, while **Michael Parisi** has stepped down from his position as General Manager/Head of A&R at Imago.

• **Jade Lighting** have moved to: 9 Oxford Street, Launceston TAS 7250. Phone: (003) 311 406, Fax: (003) 318 841

• **Marvalent Concert Productions** have moved to: 18 Avondale Street, Spring Vale VIC 3058. Phone: (018) 352 324

• **Sound Serious**, the concert production people, have moved to: Ground Floor, No. 1 Sandells Road, Tecoma VIC 3160. Phone and fax numbers remain the same. Phone: (03) 754 5122, Fax: (03) 754 8101

• Brash Holdings Ltd. in Melbourne have appointed **Mark Smith** as Operations Manager and **Dean Walliss** as Assistant Manager. While there has been a change of address for the Brashes store in Queensland, the address now being: 52 Queen Street Mall, Brisbane QLD 4000, phone and fax numbers remain the same, Phone: (07) 229 2155, Fax: (07) 229 8074.

• **Hutchings Keyboards** in Bondi Junction have a new phone no: (02) 387 5011.

• **Showcase Rentals** in Botany have new phone and fax numbers. Phone: (02) 352 9999, Fax: (02) 352 9966.

• **The Guitar Factory's** phone number at their Parramatta office has changed to: (02) 635 5552

and their manager is **Rob McMullan**, who replaces Stan Mobbs.

• **Go Music** have a new address and fax number, that being: 2120 Logan Road, Upper Mt. Gravatt QLD 4122, Fax: (07) 849 2408. The phone number remains the same: (07) 343 5277.

Just an updatenote on the REAL Australasian Music Industry Directory—the deadline for free listing in the January '94 edition is **October 15**. Listing update forms for currently listed companies or individuals in the July '93 edition went out the second week of September and anyone who qualifies within the categories of listings of AMID can get a free listing form by dropping by or sending a self-addressed, stamped

envelope to AMID Listing Forms, 3 Rose Street, Chippendale 2008. Alternatively, the listing form in the current edition (P5) can be used.

All listed companies or individuals get a **free copy** mailed to them in January, but if you need a copy of the current July edition, they can be picked up for \$10 at the door or can be mail-ordered for \$15 using Bankcard, Visa, Mastercard over the phone (02-212-6677) or by bank draft/postal money order.

CONNECTIONS ADVERTISERS get 20% off the book rates for AMID. Deadline for advertising booking is November 1 and artwork is due by November 15. AMID has introduced a \$400, 1/8th page ad size for new advertisers only. Call 02 212-6677.

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CONTRACTING NEWS

Loose group formalise, 'Gang of Six' get dangerous ahead of float

Contractors Unite as Sontec

Sontec will float as a Public Company within 18 months, the culmination of 20 years effort by six audio contractors. Today these six turnover \$25,000,000 each year. (Seen that many zeros lately?)

Try to explain Sontec to your average American business person and they'll not grasp the concept. That six, private independent businesses can get together and get organised into a national structure with a common objective is an anathema to the Yanks, who recognise either common ownership or franchise - and Sontec is neither.

"We do have a common shareholding in A.E.I. Music Australia" says Larry Sorenson from Sontec WA Pty Ltd, explaining something we'll talk about shortly, and: "a Public Company couldn't put together what we have now" is the added retort from Ray Naish, who is the General Manager of Sontec NSW Pty Ltd. The Ray has

been brought into the group by Nino Carboni of Sontec Victoria, formerly Designer Sound, to help steer the ship to the float.

Back to the start of the story and you have Seeburg, a background music firm from the Muzak era. Most of the principals of Sontec come from Seeburg in one form or another - and Sontec today is made up of what was once Sound Affair (in NSW), Audio Technology (Qld), Nartronics (SA), Fabrication Electronics (ACT), Designer Sound (Victoria) and Sontec (WA) - whose name the group adopted as 'most appropriate'.

Each of these firms has a common background in audio contracting, most typically at a commercial level - meaning paging type PA's for supermarkets and public spaces. Nurse call and aged care systems in hospitals and CCTV, security and emergency evacuation systems are a big part of the activities too. Individual members have strengths in certain areas, Larry of Sontec WA is the manufacturer, whose PA amplifiers and Limiters are used by the others.

In SA Frank Nardone has a lot of CCTV knowledge, so the group is pioneering distribution of a Scala product, 'InfoChannel' which is a multimedia message system on video. They'll shift it into airports and retail stores, because they already hang about these markets with AEI - and of course, PA before it.

AEI is loosely described as a 'foreground music system' whereby a retail store or restaurant, or indeed any public space, rents a music system that is custom packaged to suit the place and the patrons. The system comes from the USA, and has a marketing system attached to it that determines a users profile and directs a music programme mix that comes from 21 different formats and in 5



Ray Naish, Nino Carboni, Ian McLean and Larry Sorenson

different tempos.

At the basic floor level, a typical Sontec will provide a 100v line PA system for your environment, or an intercom for your drive through fast food store, although the Sontec'ers play this side of the business down a little, perhaps it is less glamorous! They have better than 1,000 of these sort of installations nationwide. Intercoms, security systems, and entertainment music systems like disco and PA's makes up the businesses. Sontec NSW has a separate hire arm called Sound Affair, which is the traditional base of the business there, going right back to the start. Sound Affair with founder Ian McLean figures amongst the audio history of your editor, who recalls many things, many of which will be better left to discuss after these people finish floating their new group on the sharemarket!

The method of the float is simple in Ray Naish's mind - just audit the individual firms and throw them into a pot at the time of the float. The upshot will be one national group that is unique - able to sell, service and install a technology installation - be it PA, multimedia, or software based. Really, these guys could pull it off together - they seem to be unified, in a uniquely Aussie sort of way!

□ Julius Grafton

ROUND UP

Hexter Sound/PA People Melbourne will shortly install a new paging system in the Melbourne Zoo, where Jurassic Park type behemoth escapes will be broadcast to the fleeing public. "Attention: Do Not Panic, Seven Lions Are On The Loose, Walk Do Not Run...." etc. Call Hexter on (03) 484-4910 for details on how the inmates will use the system.

Sound Components of Tamworth have installed a large paging PA system in the new Port Macquarie RSL Club. This is somewhat of a complex system, according to Sound Component's Warren Brazel.

There are 16 zones in 14 rooms, with Amcron Comtech amplifiers & Bose 102 ceiling speakers, clusters of Bose 102 surface mount speakers, controlled by Crown MPX and SMX automated mixers. The whole system controlled is from a PC.

The control room is in the bowels of the club in the maintenance bosses office, with the amps and mixers. You allocate each room from there, up in the rooms you'd typically

have a microphone and two buttons - one for room, the other for all zones. The phone system has an 'all page' override for emergencies.

The system design eliminates the infamous 'expert problem' which usually works behind the bar! This is because there are no knobs anywhere except in the basement - even the Ode is automated from a digital voice caller (from North Supplies in Artarmon NSW). If you are not familiar with 'The Ode', then you haven't been in an RSL club. This is a ritual that usually occurs at 9pm, and entails all the lights and in older clubs, all the powerpoints crashing off, whereupon a prerecorded message about our fallen hero's is run.

Port Macquarie RSL club opened on the 27th August, and is thought to have cost about 23 million dollars. Sound Component's installation took 3 weeks to install, Warren was assisted by Peter Scott and Gary Whitten, with technical assistance from Bose's Briar Chilcott. 9 kilometres of cable went in.

Harold Isberg at Bose designed the front end of the system - according to Warren the club put a lot of time into deciding what they wanted. The original system was pared down due to the choice of the final spec, along the way eliminating a lot of originally spec'ed speakers.

Bose Australia seem very active in the planning stages of a lot of contracting work, which

then is shunted to a dealer if it has come in directed. This is evidenced by their Yellow Pages advertising: "FREE ADVICE" - a direct method of marketing indeed!

Over in Adelaide the ever active **Pat Tapper** at Greater Union Village Technology (known as GUVT for short) has installed a live PA system into the Golden Grove Arts and Recreation Centre. This 300 seat venue now has 2 x Bose Panaray boxes with 1 x bass module as a main PA. The Adelaide Symphony Orchestra performed at the opening.

Peter Riley is the new house technician there. The venue has Amcron amps, a Soundcraft Spirit Live 4, 24:4:2 mixing console, a JBL limiter/compressor, Rane graphics, and Shure mics.

Also in the Golden Grove, Will Tun from GUVT installed lighting, a Jands Event 60 Plus is the console, with heaps of Selecon Zoom and 1.2k fresnels, and cyc lights.

The GUVT S.A. lighting team (Paul Beck) were similarly busy selling/installing an ETC Microvision FX lighting console to 'The Space' at the Adelaide Festival Centre. A Jands Event 60 Plus went into Adelaide Festival Centre's main theatre. 3 x Jands Stage 24's went to schools and 2 Jands Stage 12's and a Stage 24 went to QPAC, otherwise known as the Queensland Performing Arts Centre. GUVT are

(continued over)

AUCTION

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VIDEO EQUIPMENT: includes Betacam CVR40, (2) Sony 1F500 Multiple Interface Boxes, (9) Cameras JVC, Sony and National; (17) VCR's Sony U-Matic, National and Sanyo; (8) Monitors Rank and Barco; (8) Laser Disc Players Pioneer; (*) "Ampex" AVR 2 "Videotape Unit with 4 Recond. Heads; "Sony" BVG 1000 Time Code Generator Reader; "Telemation" Video Character Generator Model TGS; (2) "Thompson - CFS" Video Noise Reducers NTSC; "Gemini" 2 Digital Effects Generator; 2 Arlunya Video Processing Systems, Model VPS210; Arlunya PG100 Test Pattern Generator.

AUDIO: includes 2 "Ampex" 1/4" Recorders 2 Track ATR102 and ATR700; '3M' 2" Recorder 16 Track M79; 'Tandberg' 1/4 3 Speed Recorder; "TEAC" M15 Audio Console 24 channel; "Soundtracs" 32/8 FOH Console; "Dolby" C-Type Tape Duplication Unit Model 330, SP Betacam R/C Unit CRC 75.

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Inspection: 9am to 4pm on Tuesday 5th and Wednesday 6th October.

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a national organisation after all.

Back in SA, a roof truss on chain blocks was installed at 'Vital Statistix in Port Adelaide, and Paul shipped swag of Altman gear for the show called: '5 guys named Mo'.

In WA **John Oliver** from Sontec WA (Call 09 381 8488) tells me the firm have been busy installing PA systems on ferry boats destined for China. Apparently Austral, Wave Master and Sea Spay boats all need Marine Intercom (Shorecom), PA, CCTV & AV type systems.

"TOA is the (PA) benchmark for us, & a sprinkling of Inkel. For video we use Panasonic". The firm also recently fitted PA to the Northern Transit rail PA system. Redback column speakers from Jack O'Donnell's Alltronics were used.

In Sydney **AR Audio Engineering** are in the middle of a large installation designed by Louis Challis at the new Olympic Stadium. This is built irrespective of the Olympic bid. There are two running tracks, for which the PA comprises 10 x Australian Monitor 2100 mono amps, SCV (France) equalisers, crossovers, and compressors. Big EV full range horns are situated up towers, with Altec horns on the second track.

A Yamaha 803 mixing console is in the control room, and 6 radio mics are hooked through six Sabine feedback exterminators for feedback elimination. According to AR Audio Engineering's Maxwell Twartz, they work well.

The site work is being done by Simon Priest, with Tony Russo holding the ladder. Bose Panaray is used for main stadium fill. The electrical contractors are O'Donnell Griffin, Civil & Civic are the main building (site) contractors. Olympic tenders are now HOT stuff!

AR Audio Engineering have also been busy at the Family Law Court project.

Trevan Johns & Associates (Call 748-7777) have just installed a PA system at Eora - a Tafe project for aboriginal studies, at Darlington

in Sydney. The job was a sub contract from Pacific Communications, and entails 4 x 4726 JBL speaker systems with 4 x matching wedges.

2 x Jands SR1500 Amplifiers and 2 x Jands107 amps drive them, a 16 ch Spirit Studio and a 16ch Spirit Live desk are there, Bob Miletic, Gus Nemm, and Trevan Johns himself has done the soldering. The firm also recently installed equipment for a Boardroom at North Sydney - an AMX control system was a first, Trevan originally planned to install a Crestron System but changed when Jands lost the line. A screen, curtains and Video were included in the job.

Total Concept Productions are better known as TCP these days, and they have had a massive winter, installing a big lighting rig and PA at the John Edmonson Club in Liverpool. A JBL PA, SR 3000 amps, lighting custom effects, neon and a unique white truss - (never seen before) went in, a Tony Musico design?!

Across town at the City of Sydney RSL TCP are installing a JBL ARRAY system with Subs, driven by 7 x Jands SR-3000 amplifiers. A Soundcraft Venue 32 console, with Klark Teknik system EQ's amongst other things. A top end system!

Biggest news of all for the Sydney outfit is the \$1.5 million refit at the Coogee Bay Hotel, which your editor and Paul Lovett last refitted in 1985 for \$300,000. A big job, more on this next month - we hope!

David Bancell of Sontec (Melbourne) which was until recently known as Designer Sound tells me of an installation at Barwon Prison in Geelong. It is a \$250k security, cell guard system, with an intercom function specially made for prisons. Communication between prisoner & guard is possible by pressing a button. David says it's Bullet proof! The High Point Shopping Centre at Maribyrnong has a new information TV system for Pokies and gambling - 63 TV screens and a very complex video switching matrix was custom designed & built by them. A 12 zone 100v line TOA PA system is included.

Sontec (Victoria) have completed an installation at the Mail exchange in Melbourne, and Hilary Evans tells me it was done with a new product from IMP (see story).

At the Morrabbins Arts Theatre where a Bose system has been installed, driven by ARX amps, a Soundcraft Spirit Live 8 is the mixer.

Lucky last is the Rye RSL club, where a large closed circuit TV system, a 100v line PA and a conventional system with Bose speakers and ARX amps.

Peter Freedman at Freedman's (02 638-6666) is near to completing a very large install at Blacktown Workers Club, with Crestron Systems, special switching modules built by Peter himself, and lots more. Hopefully more next issue on this.

Call Julius Grafton with Contracting News. (02) 876-2612, or Fax (02) 876-5715.

MUNCHY

Bytes

"PLASA gets it right" reads the headline on the cover of the PLASA 93 Daily News of 15th September 1993. Yes - this year's light and sound show at Earl's Court in London attracted a wide range of international exhibitors and visitors including Bytecraft's Durham Ritchie.

Bytecraft displayed a range of equipment in conjunction with Howard Eaton Lighting including Bytesize TR and 483 dimmers, architectural lighting control products, Sage universal protocol converter and DimMaster 483. A great deal of interest surrounded the first public display of the new "Mocon" mobile control console for use with Bytecraft's "State" stage movement control system.

Durham reported several familiar faces at PLASA including John Gunton from Dynalite, Gary Pritchard from LSC and Jonathan Ciddor from Lightmoves. It was also rumoured that Peter Kemp was in town and managed to get a drive in the Zero 88 go-cart race on the Monday evening. My spies tell me that some 47 drivers from many parts of the world took part in front of 70 visitors and, although Peter finished out of the top three, he did manage a mention amongst the better performers.

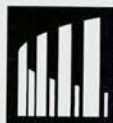
Strand Lighting took the opportunity to release their new "GSX" lighting console which promises to lead the next revolution in memory desks with the first console to provide a hardware platform for operating software applications. The "foundation" software package called Genius™ is available in 25, 50, 75, 100 and 125 channel options while extension software packages provide colour control and effects with Kaleidoscope™ and communications and interface capabilities with Communiqué™.

The GSX console follows the same design theme as the LX and MX consoles with its ergonomic control surface and rugged sliders and pushbuttons. Compact and light weight, the GSX is practical for permanent installations and touring applications. Full details shortly.

Durham also had the opportunity to see a number of shows while in London including Crazy for You which opened in the newly refurbished Prince Edward Theatre in London's West End on the 3rd March. This elaborate and highly technical extravaganza, which has already joined the list of long running successful West End Musicals, takes maximum advantage of some 40 racks of Bytecraft's Bytesize 483 dimming installed in the Prince Edward by Howard Eaton Lighting.

Back in Oz, Jay Davis from Bytecraft's Hire Department is in full flight with the bump in for the Melbourne season of Five Guys which opens at the Athenaeum on 9th October. Bytecraft is providing lighting and control equipment including 32 Strand ColourCall scrollers plus Cantatas, Lekos and special effects including smoke etc.

BYTECRAFT are the sole Australasian distributors for Strand Lighting products and also manufacture a wide range of high technology lighting control and stage movement control systems. Call them: 03 587 2555



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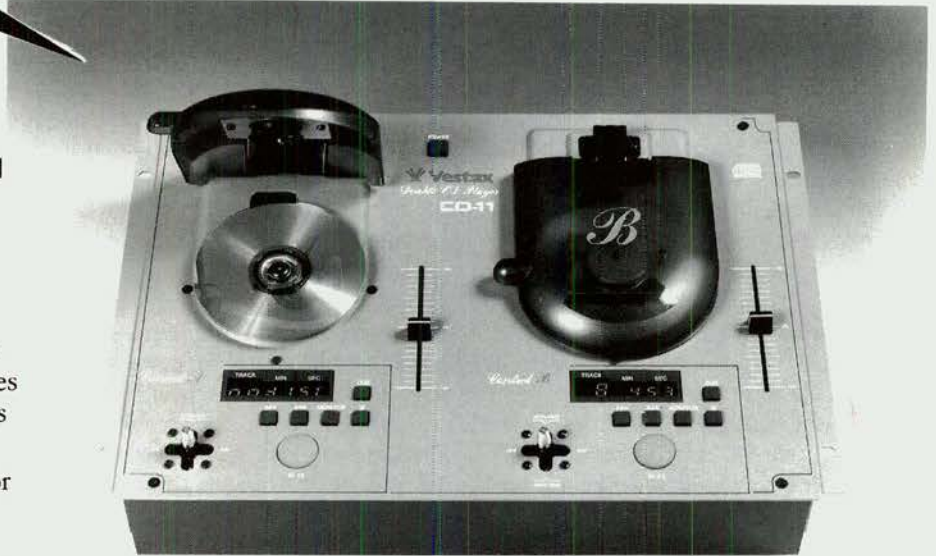
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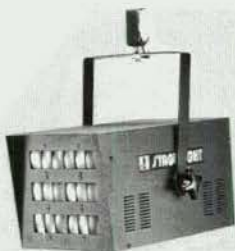
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Sigtech is here & it works!

Now your control room can be 'mapped' and an inverse room digitally created to compensate for problems. Remarkable? Read on...

Graeme McGeorge from E.S.A. has a problem. His most exciting new product in years is impossible to properly describe, rather it must be experienced to be appreciated. Winning an innovation award at last month's regional AES show helps, but the only real way to promote the product is hands on. So Graeme McGeorge is on the demo trail.

The product is the SigTech AEC 1000, best described as an acoustic environment correction system that properly rearranges the acoustics of a recording studio control room. The problem with a control room is that the room itself contributes to the sound coming from the monitors by way of reflections from the walls, ceiling and floor. Worst of all are often reflections from the equipment and mixing console, a massive surface that dominates the room.

SigTech fixes all this, rendering your con-

trol room a correct environment, insofar as your studio monitors now produce sound corrected against room acoustics. Hard notion to swallow? It's all done in the time domain.

The situation is thus: sound arriving at your ear within 50ms of the original, (ie: reflected sound) both aids and degrades what you hear, and can affect the stereo image adversely. Control rooms aren't designed to be anechoic (echoless) because if they were you'd need huge amounts of amplifier power and really, the sound would be very bland, or dry.

Usually in control room design the 'Live-end, Dead-end' approach is pursued, whereby the area around the monitors is deadened while the rear of the room is more reflective. SOME reflective sound is desirable.

Sitting at the mixer in the control room you hear the original source sound first, followed by various reflections. What SigTech sets out

to do is create an inverted version of any early (under 50ms) reflections in order to cancel these reflections.

It's really a little difficult to explain, but the system was demonstrated here in the office by the coolly efficient (but warm at heart) McGeorge. The initial setup takes about 2hrs.

Running the Connections test rig with some fav CD's we listened to our standard programme and felt quite at home. The twin-cone Etone's with Motorola Piezos were pumping out the sound, the 1975 model Rotel amplifier happily steamed away. We were in standard reference mode, where our ears are most at home. Hitting the by-pass off brought the SigTech AEC-1000 into action - and what a dramatic difference it made!

The actual change to stereo imaging and clarity is marked. According to Graeme the reaction of some engineers sitting in their favourite chair in the very familiar surrounds of their control room must be seen to be believed.

Clearly the SigTech AEC-1000 is a significant addition to the professional control room. To achieve truer fidelity by eliminating room 'clutter' from your sound is equal to rebuilding the room - and using the AEC-1000 considerably cheaper. ***SigTech is distributed by ESA Audio, call (03) 562-4605.**



WorkBench

With Howard Jones

DAT MAINTENANCE

Probably the single greatest cause of failure in DAT machines is simply that people never ever get them serviced or examined in any way until they fail in some catastrophic fashion. It's in the nature of DATs that they'll perform satisfactorily for ages and then suddenly chew a tape which Murphy's Law will have it is the one containing the greatest lead break ever recorded, with the drummer who's now moved to Alaska etc etc - you know the problem. So, is there anything you can do to prevent sudden failure?

All DAT machines have very fine heads mounted on a rotating head drum, and the tape passes diagonally across this drum. To get the tape to contact the head drum properly, two retractable guides slip behind the tape when the cartridge is first inserted into the machine, and pull the tape out of the shell and around the head drum. As in a cassette deck, the tape is drawn through the mecha-

nism by the pinch roller and capstan motor. In a DAT player, all the transport and motor drive functions are controlled by a dedicated microprocessor - not so simple!

With repeated usage, the pinch roller becomes heavily coated with tape oxide, making it glossy and inclined to slip. Similarly, tape oxide builds up on the head drum and unless cleaned off, starts to degrade the machine's performance. These two components of a DAT player will require the most regular cleaning to keep the machine in good condition.

Can you clean your DAT player yourself? In a word - no! Because of the very delicate nature of the heads in a DAT and the great and expensive damage which can be wrought by the use of inappropriate cleaning materials, it is best to take your machine to a DAT specialist. Although there is a cost involved in doing so, the advantage is that, as well as simply cleaning the machine, an expert can examine the DAT for any other likely performance problems.

What about cleaning tapes - is it safe to use them? These tapes need to be used with great caution - the best approach is to shun them except in cases of direct emergency. If you have to use one, then, contrary to the instructions appearing on the tape, do not use it for more than 4 seconds. Do not rewind the tape or reuse any portion of it. If a cleaning tape has succeeded in clearing a head clog, then well and good - at least you are able to continue with your session. The occurrence of a

head clog or some other sign of misbehaviour is a cue to have your machine looked at as soon as possible.

On the mechanical side, a DAT contains a variety of worm loading and circular gears which need periodic cleaning and lubrication - particularly so for portable DATs which pick up substantial amounts of grit, beach sand etc. As the player ages, it may be that the tape path alignment will need adjustment - this is the single most important alignment in a DAT as it affects replay compatibility of tapes made on your machine.

The final point to be aware of is that a DAT machine contains parts which will require replacement on a regular basis. The reason why DAT usage is expressed in terms of 1000 hours of head wear, is that most manufacturers expect their DAT heads to last about that long. This is a mean figure, used as an estimate of how long the machine will perform to spec. without giving unacceptable error rates. Individual machines will vary around this figure - some may perform very well for 1500 hours, others may start to fail around 700 hours. In any case, the day will arrive when the heads, and other associated components, require replacement. So, be prepared - it *will* happen to your machine, and it won't be cheap when the time comes.

***Howard Jones runs Studio Solutions in Sydney, who sell, repair, hire and install. Call him on (02) 906-4363, or fax: (02) 439-6444.**

SSL: Easy Digital

The \$450,000 SSL Scenaria audio post-production system I've just seen working will influence the next generation of smaller, down market systems - a portent of things to come. SSL have devised a devastatingly effective package that is very user friendly - to the extent that you and I could use the system inside a day.

Digital mixing consoles are still up in the stratosphere costwise, mainly due the cost of converting many analogue inputs to digital - then converting the mixed outputs back to analogue again. All these A to D and D to A converters add big time cost and complexity to the product, so Digital is still the realm of larger studios and post houses.

Scenaria could just as well be used as live sound mixing console with 38 inputs, and a 24 track digital recorder- if you didn't want to use the editing and processing functions on board. The console has two screens, upon one you see the graphic representation of what the audio is doing, what each of the 38 input channel faders is set at, and indeed by scrolling the screen, an audio 'map' of what is recorded and where. The second screen is where you view the video to which your sound programme is attached.

"Think of this system as being absolutely locked to video, equal to film with sprocket holes", says SSL's Ken Barnsley. I sat in on an active demonstration of the system run by the Sydney Section of the Audio Engineering Society - and Ken had 100% attention from the assembled enthusiasts. My note taking drew his attention- "are you from Fairlight?" he asked!

Ken jogged and flipped about through a demo commercial, and convincingly proved Scenaria is all about immediate, as in 'right now', access to your audio track. Audio is recorded to hard disk drives resident in the remote processor rack - and you can have up to 15 drives sitting out there. A typical drive is a 2.4 gigabyte Seagate or Fugitsu hard disk, eight audio tracks are assigned to each of three drives.

The video you are about to work on is downloaded onto one of Scenaria's hard disks

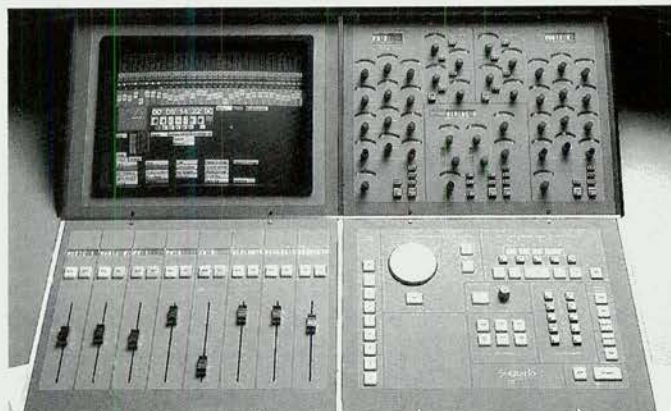
and preset to such a resolution that you can happily see lip sync. Timecode attached to your video programme ensures your audio track will remain glued to video while you work and when you are finished.

"Suppose you apply your audio to the project then just when you think you're finished the Producer comes along and tells you a scene has been cut out. All you need is the time code reference from the start of the cut, and then end. You go to the scene, cut it, and re-arrange your audio and automation to suit", said Ken.

The graphic representation of the audio track is sensational. To understand this, look at the picture of the main operating panel. Eight P & G moving faders each have an LCD 'scribble' screen, so the actual name of each channel is shown here. To the right of the screen are two identical parametric equalisers - each also with a scribble strip. Eight auxiliary sends are supplied alongside of each parametric. In the middle is a set of channel dynamic controls, a compressor, limiter, noisegate module, also with scribble strip.

Away you go, mixing, recording and editing to your hearts content, and access to any channels fader level, EQ, auxiliary sends, or dynamics is no further away than a button push. On screen you can view your EQ curve and your compressor/limiter and/or gate threshold in such a way as to make the functions of these utilities immediately obvious to a novice sound person.

SSL should package a software extension of some of their graphics for use as generic sound engineer training tools! The dynamic processor screen could be run through a soundcard on a PC, for example, to illustrate exactly what is happening to the sound while you tweaked a screen load of controls. But I digress, and it's hardly SSL's role to make a dummy's guide to audio, is it?



"Syntec International have been SSL distributors for years, and today oversee about 14 SSL installations across the land. SSL's SL4000 G is billed as 'the ultimate master studio control console'. The firm has been trading for 20 years, and also distribute Studer, Sennheiser and Fostex products in Australia.

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Sonic Solutions have a De-Noise Solution

Jim Morrison's voice could be termed 'objectionable noise' all on its own, but the demo track had a whole world of scratches too. I heard it repaired - and repaired it was indeed, with Sonic Solutions 'No Noise' digital processing system.

Sonic Solutions offer a hard disk based recording and editing system called The Sonic System that runs on MAC, with the host machine acting as the platform for the software. All the digital material is recorded to external hard drives, while Sonic Solutions own card handles processing. Provided your hard disk is OK, the system is bullet proof.

You can buy a hard disk direct from Sonic Solutions in the USA, out here distributor Paul Heaton from Syncrotech suggests a Seagate or Fugitsu drive. The typesetting platform in this office is a MAC Quadra 800, which is currently on its third drive. The first two failed within days of commissioning, and in an indirect, almost insidious fashion. It's

been suggested the reliability factor for any hard disk is a 'bathtub curve', whereby the chance of failure at first is very high. That's the deep end of the bath (below).



After the hard drive is bedded in, it functions happily for some years until reaching the shallow end, where it starts to climb the hill- and get tired. Indeed the second Mac here at Connections has kicked along without a murmur for years, so if it works - it works.

Sonic Solutions know this too, that's why they repackage a Fugitsu or Seagate into their own box, presumably pre-run and bedded in. If you approach a new drive with a healthy dose of scepticism and some patience, your expectations won't be dashed when the thing starts to glitch in those important first few weeks.

In a nutshell, the system will record to 8 or

12 channels - for which you really need at least 2.0 gigabytes of drive. You mix in real time - and it is editing that is this systems forte. The Waveforms are reasonably easy to work with, you can zoom straight down to sample and back out again.

De-Crackle and De-Click are powerful tools, Sydney's 301 Studio has one of these systems. Real time EQ allows you to design your own parametric EQ, there is no arbitrary range of low, middle and high frequencies.

I saw the system demonstrated by Sonic Solutions' Mark Ely, who had a few potential users on hand with the tricky questions. The thing that comes out of this session loud and clear is Noise Control. Got a cough on tape? Fix it. Swearword? Wipe it. The rest all looks OK, you need to find out for yourself.

Syncrotech say you can get started with this system(it grows) from about \$10,000.

*Syncrotech Systems Design handle Sonic Solutions, call them on (02) 417-5088.



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BOB ARMSTRONG

Tom Kazas talks about Vibe, Engineering and The Studio Process.

This month it is my privilege to speak to Tom Kazas noted musician and recording identity.

BA: Recording is not something you have to be a techno whiz kid at, you can learn from scratch.

TK: Most definitely, I mean there is this idea that the technology surrounding music today is so complicated and hard to get involved in. There are engineers who are very good technically and there are engineers who are better at the vibe thing.

BA: Having said that Tom, you are working on some pretty sophisticated equipment in the SSL desk, it's probably some of the most extravagant recording equipment around.

TK: Well it's one of the most popular, it definitely is sophisticated. With SSL, 24, 32 tracks it's still the same basic principles. But the SSL is a great piece of technology, I think it is a wonderful desk.

BA: Is it just the automation that makes it successful or a combination of things?

TK: The automation is a big feature, it is very user friendly, it's the layout of the console, the arrangement of the controls. The desk is very well laid out, very logical and when mastered very simple in fact!

BA: What sort of rules do engineers follow?

TK: There are certain basic engineering skills that are fundamental to recording music. (1) Getting good levels onto tape (2) Selecting the right mic's (3) The right kind of tape to use (4) Listening levels (5) Headphone mixes.

BA: What do you do to protect your ear?

TK: One thing is to not use headphones too much, also to listen on a smaller speaker quietly to hear what's happening on that level.

BA: Is it feasible to record on a four or eight track then take it to a bigger studio to mix?

TK: Yes it is, the way I see it as a producer you can control the recording environment, you can do it at home, get that vibe where there's no pressure and you're not watching the clock. Then you can fine tune it on a larger desk and can be mixed to sound wonderful.

BA: You've got your studio "The Lab" at home where you recorded your albums from.

TK: *Deliquescence* was done totally in "The Lab" on a sixteen track that I hired in especially for that, where as *Book Of Saturday* was recorded both at "The Lab" and at "Rich" studios. One skill I think is very important for an engineer is dropping in.

BA: What's your preference, do you like recording many tracks of vocals, guitars etc then picking one version or maybe flying between versions taking lines and bits and

pieces here and there?

TK: I do enjoy the latter mainly because the performer enjoys it, it keeps the continuity or the vibe going, it can be a little more time consuming but particularly for the vocalist it's better. The performer is doing what they do best, performing, not just dropping in here and there to fix a line or phrase.

BA: What do you think of audio schools?

TK: I have mixed feelings, I think they're good from the point of view of people wanting to learn the skills, any sort of learning structure is a great thing. Part of the problem has been that the school may give the impression that there's plenty of work out there, "come join the school and get a job when you've finished" It's not the case at all.

BA: I suppose some people need a bit of encouragement, like a self help group, they can go out there and come back and say things like "Jeez I spent all night at such and such a studio, the band was terrible. I swept the floor and made the coffee and they even made me pay for the slab of beer I had to go and collect, in the rain!"

TK: Ultimately that's how I started, I made the coffee's for quite a while. I think it's good mainly because I like the idea of the mentor/student relationship, I went through that whole process and it's a good one.

BA: What's on your plate at the moment?

TK: Well at the moment I'm finishing an album for a guy called Richard Lawson who used to drum for the Lime Spiders, he's doing an instrumental come pop album which we're doing some at the "Lab" and some at "Rich". I'm doing an album for Los Chicanos, they're a south American band. Then I'm having a break to maybe do some live shows to promote *Book Of Saturday*. I'm compiling a low key video for one of the tracks from some live footage. I've managed to get all my demo's together for Mushroom....

BA: So you've been signed to Mushroom?

TK: I'm about to sign we've gone through a few drafts of the contract but now we've finally got it together.

BA: As we wind up Tom, as you know I always have a little parable here, have you got one?

TK: Well the only thing I can think of is the old joke: "How many producers does it take to change a light bulb?" And the answer is: "I don't know, what do you think?" Boom Boom.

BA: On that note it's goodbye from me and goodbye from him, until next month.

Bob has a regular Saturday spot on 2SER-FM



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AMPLIFIERS

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ACOUSTIC TECHNOLOGIES. (07) 376-4122. Made in Australia												
M-400	120	220	-	-	No	3r/u	14	1.2v	yes	Peak	Mosfet	1195
M-1000B	300	500	-	1000	No	3r/u	21	1.2v	yes	Peak	Bipolar	2145
AE AUSTRALIA. (02) 896-4033. OMP Amplifier Modules. Made in UK												
MF100	105	115	-	-	Opt	Mod	2	.775	no	Opt	Mosfet	295
MF200	150	215	-	-	Opt	Mod	4	.775	no	Opt	Mosfet	425
MF300	220	310	-	-	Opt	Mod	5	.775	no	Opt	Mosfet	540
MF450	305	455	-	-	yes	Mod	7	.775	no	Opt	Mosfet	877
MF1000	550	725	1050	-	yes	Mod	16	.775	no	Opt	Mosfet	1125
AMCRON (CROWN). From Bose Australia. (02) 684-1022. Made in USA												
MA601	235	340	41C	£30	yes	89mm	18	1.4	yes	IOC	Bipolar	2250
MA1201	320	495	70C	£30	yes	89mm	20	1.4	yes	IOC	Bipolar	2880
MA2401	520	800	110J	178£	yes	89mm	23	1.4	yes	IOC	Bipolar	4500
MA24X6	520	800	110J	-	-	-	-	-	yes	IOC	Bipolar	3740
MA10,000	-	-	-	-	-	267mm	58	-	-	yes	IOC	27,000
MA5000VZ	1300	1860	240J	370C	-	133mm	34	1.4	yes	IOC	Bipolar	6699
Macro Ref.	760	116C	150J	-	-	178mm	25	-	yes	IOC	Bipolar	7300
MT601	236	340	41C	£30	yes	89mm	17	-	yes	IOC	Bipolar	1999
MT1201	320	495	70C	£30	yes	89mm	18	-	yes	IOC	Bipolar	2549
Geodyne1	220	300	-	575	-	89mm	13	-	yes	IOC	Bipolar	1813
Geodyne2	320	440	-	365	-	89mm	14	-	yes	IOC	Bipolar	2317
PS200	100	170	-	345	-	133mm	11	1.3	yes	IOC	Bipolar	2775
PS400	190	330	-	860	-	178mm	25	1.76	yes	IOC	Bipolar	3333
PSA2X	275	460	70C	915	yes	178mm	26	2.1	yes	LED	Bipolar	4799
D75	40	55	n/a	110	yes	45mm	4	.812	yes	IOC	Bipolar	1491
D140A2	95	155	n/a	315	yes	133mm	11	1.19	yes	IOC	Bipolar	2172
DC300All	175	305	n/a	610	yes	178mm	20	1.75	yes	IOC	Bipolar	2992
AMPOWER. From AMPS UNLIMITED. (03) 354-7184. Made in Australia												
AM1500	150	-	-	-	yes	2	10	.9	yes	no	Bipolar	745
AM1500B	150	-	-	-	yes	2	10	.9	yes	no	Bipolar	870
AM2000	200	-	-	-	yes	3	12	.9	yes	LED	Bipolar	1135
AM4000	200	400	-	-	yes	2	12	.9	yes	LED	Mosfet	1255
AM8000	400	-	-	-	yes	3	15	.9	yes	LED	Mosfet	1595
AM15000	750	-	-	-	yes	4	30	.9	yes	LED	Mosfet	2650
AMS1000	100	morc	-	-	yes	2	10	.9	yes	LED	Bipolar	710
AMS2000	200	morc	-	-	yes	2	10	.9	yes	LED	Bipolar	925
AZ30 Zone	30	-	-	-	yes	2	8	vari	yes	no	Bipolar	745
AZ60 Zone	60	-	-	-	yes	2	9	vari	yes	no	Bipolar	850
AZ120 Zone	120	-	-	-	yes	2	10	vari	yes	no	Bipolar	1000
APOGEE SOUND. From ESA Audio. (03) 562-4605. Made in USA												
SA400	400	575	750	360	yes	2	25	1.4	yes	LEC	Bipolar	4290
SA600	525	70C	325	1200	yes	2	27	1.4	yes	LEC	Bipolar	5226
SA700	560	81C	380	1510	yes	2	27	1.4	yes	LEC	Bipolar	5668
SA800	750	1225	140C	2250	yes	3	35	1.4	yes	LEC	Bipolar	6722
ARISTA. (02) 648-3488. Made in Taiwan												
A100S	50	76	10J	10C	yes	5	-	-	yes	-	-	400
PA4030	15	22	3C	30	yes	6	-	-	yes	-	-	530
PA4060	30	41	6C	60	yes	8	-	-	yes	-	-	700
PA4120	60	87	12J	12C	yes	10	-	-	yes	-	-	850
ARX SYSTEMS. (03) 555-7859. Made in Australia												
SS300VC	100	150	-	30C	yes	2	9	.775	yes	no	Mosfet	1045
SS600VC	250	350	-	70C	yes	2	13	vari	yes	LED	Mosfet	1750
SS1200VC	425	625	-	130C	yes	2	15	vari	yes	LED	Mosfet	2245
AUDIO TELEX. (02) 647-1411. Made in Australia												
8188B	20C	-	-	40C	-	2	14	1.7	yes	LED	Mosfet	1120
8186B	12C	-	-	20C	-	2	12	1.5	yes	LED	Mosfet	1040
8182B	60	-	-	10C	-	2	10	1.2	yes	LED	Mosfet	896

	Watts, 8Ω/ch	Watts, 4Ω/ch	Watts, 2Ω/ch	Bridge, 8Ω/ch	Output Protect?	Height in rack units	Weight in KG	Input sensitivity, volts	Volume controls?	Signal metering?	Output devices?	Price
AUSTRALIAN MONITOR. (02) 816-3544. Made in Australia												
Opal 2802	160	280	-	560	yes	2	15	1.2	yes	yes	Mosfet	1550
K7standard	255	400	430	800	yes	2	17	1.2	yes	yes	Mosfet	2800
K7contract	255	400	430	800	yes	2	17	1.2	yes	yes	Mosfet	2600
K7utility	255	400	430	800	yes	2	17	1.2	yes	yes	Mosfet	2500
1K2: stand.	390	600	680	1200	yes	2	19	1.2	yes	yes	Mosfet	3300
1K2: contr.	390	600	680	1200	yes	2	19	1.2	yes	yes	Mosfet	3100
1K2: utility	390	600	680	1200	yes	2	19	1.2	yes	yes	Mosfet	3000
Prophile	255	400	-	-	yes	2	19	1.2	yes	yes	Mosfet	3100
AM2100	1600	2500	mono	mono	yes	3	30	1.0	yes	yes	Mosfet	4000
AM1600	470	810	1100	1620	yes	3	30	1.0	yes	yes	Mosfet	3700
AM1600S	580	1000	-	2000	yes	3	30	1.0	yes	yes	Mosfet	3800
4 channel amplifiers:												
AM1200	200	320	420	800	yes	3	26	1.0	yes	yes	Mosfet	3600
AM1200S	260	400	-	1000	yes	3	26	1.0	yes	yes	Mosfet	3700
AM2200 3 channel amplifier, wattage quoted per channel:												
Ch 1:	575	950	1320	-	-	-	-	-	-	-	-	-
Ch 2:	430	610	820	-	-	-	-	-	-	-	-	-
Ch 3:	250	330	-	-	yes	3	1.2	-	yes	yes	Mosfet	5000
CARLSBRO. F. PAYTON & SON. (02) 439-1822. Made in U.K.												
CPX300	75	150	250	300	yes	2	14	.775	yes	yes	Bipolar	1595
CPX600	150	300	500	600	yes	2	17	.775	yes	yes	Bipolar	1795
CPX800	200	400	650	800	yes	3	19	.775	yes	yes	Bipolar	2195
CPX1200	300	600	1000	1200	yes	3	22	.775	yes	yes	Bipolar	2495
CELESTION. AMBER TECHNOLOGY (02) 975-1211. Made in U.K.												
SRA1000	320	510	-	1020	yes	2u	16	.775	yes	yes	Bipolar	3495
SRA1600	530	815	-	1620	yes	3u	20	.775	yes	yes	Bipolar	4595
CREST AUDIO. PRODUCTION AUDIO SERVICES (03) 852-0900. USA												
LA601	150	275	-	440	yes	2	12	.775	yes	yes	Bipolar	1695
LA901	280	350	-	750	yes	2	15	.775	yes	yes	Bipolar	1995
LA1201	300	475	-	1000	yes	2	17	.775	yes	yes	Bipolar	2495
FA601	150	275	-	550	yes	2	11	.775	yes	yes	Bipolar	1995
FA901	280	350	440	750	yes	2	15	.775	yes	yes	Bipolar	2495
FA1201	300	475	680	1000	yes	2	17	.775	yes	yes	Bipolar	2995
FA2401	350	600	770	1200	yes	2	25	.775	yes	yes	Bipolar	3595
CC151	200	325	-	650	yes	3	17	.87	yes	yes	Bipolar	3775
CC301	360	540	-	1100	yes	3	23	1.2	yes	yes	Bipolar	4680
3301	240	380	425	725	yes	2	20	.908	yes	yes	Bipolar	3950
4601	350	485	-	925	yes	2	21	1.03	yes	yes	Bipolar	3595
4801	400	575	700	1150	yes	2	21	1.1	yes	yes	Bipolar	3595
6001	525	700	800	1320	yes	2	23	1.2	yes	yes	Bipolar	4395
7001	560	810	850	1650	yes	2	23	1.4	yes	yes	Bipolar	5150
8001	750	1225	140C	2450	yes	3	36	1.73	yes	yes	Bipolar	7380
7301 Monitor amplifier, 2 channels different outputs:												
Ch A:	670	940	990	-	-	-	-	-	-	-	-	-
Ch B:	95	125	220	-	yes	2	?	1.5	yes	yes	Bipolar	4770
9001	1400	2100	250C	4200	yes	3	?	2.24	yes	yes	Bipolar	8280
10001	1200	2100	350C	4200	yes	4	?	2.23	yes	yes	Bipolar	9720
10004 4ch	75C	1225	140C	2450	yes	4	?	1.73	yes	yes	Bipolar	11880
DEX. (03) 372-2266. Made in Australia												
DEX200	10C	160	-	250	yes	1u	6	2.5	yes	yes	Bipolar	1221
DYNAUDIO ACOUSTICS. From STUDIO SUPPLIES (02) 957-5389. U.K.												
A1	50C	800	-	800	yes	1	13	1.0	yes	yes	Mosfet	3558
A2	36C	600	-	600	yes	1	10	1.0	yes	yes	Mosfet	2718
A3	25C	350	-	500	yes	1	8	1.0	yes	yes	Mosfet	2105

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Watts, 4Ω/ch
Watts, 2Ω/ch
Bridge, 8Ω/ch
Output Protect?
Height in rack units
Weight in KG
Input sensitivity, volts
Volume controls?
Signal metering?
Output devices?
Price

HERTZ ELEKTRONIK. From HERTZ (AUST) (02) 363-3029. Germany.

Linear5.3	300	500	1200	yes	3	18	1.55	yes	LED	Mosfet	4368
Linear 6.3	460	810	1560	yes	4	24	1.55	yes	LED	Mosfet	6768

ELECTROVOICE. From MARK IV AUDIO (02) 648-3455. Made in USA

EV 7100	75	100	200	yes	1	8	1.0	yes	no	Bipolar	1399
EV 7200	125	200	400	yes	3	16	1.0	yes	no	Bipolar	1399
EV 7300A	200	300	600	yes	4	17	1.0	yes	no	Bipolar	2250
EV 7600A	400	720	1200	yes	4	23	1.0	yes	yes	Bipolar	3595

E.H.T. From ETONE (02) 533-1967. Made in Australia

EHT 4000	350	600	850	1200	Yes	3	22	1.0	Yes	Yes	Mosfet	2790
EHT 5000	650	1000	2000	Yes	3	27	1.0	Yes	Yes	Mosfet	3580	

(NB: EHT amplifiers drive E-I-T Processed speaker systems ONLY. Processing built in.)

EMINAR & SCORPION. (03) 465-7144. Made in Australia

ST3000	115	150		yes	2	10	.7	yes	no	Bipolar	759
SD200	150	200		yes	2	12	.75	yes	no	Mosfet	929
SC8000	285	400		yes	3	18	.77	yes	LED	Mosfet	1599
SC15000	500	750		yes	4	24	.77	yes	LED	Mosfet	2549
Eminar80C	160	210	20C	yes	3	18	.77	yes	LED	Bipolar	1449

INKEL PA. From MAGNA SYSTEMS (C2) 417-1111. Made in Korea

MA 320	72	100	200	yes	2	11	1.5	yes	LED	Bipolar	TBA
MA 420	100	150	300	yes	2	12	1.5	yes	LED	Bipolar	786
MA 430	400	200		yes	2	12	.775	yes	LED	Bipolar	1100
MA 620	200	300	500	yes	3	17	1.5	yes	LED	Bipolar	1100
MA 920	300	450	800	Yes	3	21	1.5	yes	LED	Bipolar	1900
PSA 1200	450	600	1200	yes	2	13	.775	yes	LED	Bipolar	3300

JANDS ELECTRONICS (02) 516-3622. Made in Australia

SR3000	630	810	1100	1600	yes	2	21	?	yes	LED	Bipolar	3595
SR1500	310	410	590	820	yes	2	17	?	yes	LED	Bipolar	2995
A107 MKII			335			3			yes	no	Mosfet	1895
A104 MKII	130	200				2			yes	no	Mosfet	1595

MSR AUSTRALIA. Makers of Humungatron (03) 417-7020.

MSR-850C	600	850	n/a	1700	yes	2u	20	1.3	yes	yes	Bipolar	2895
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PEAVEY. From AUSTRALIS (02) 905-3142. Made in USA

PV4C	210	250	420	yes	3	14	1.0	yes	LED	Bipolar	1195	
PV8.5C	425	550	850	yes	3	20	1.0	yes	LED	Bipolar	1495	
PV1.3K	650	1000	1300	yes	4	25	1.0	yes	LED	Bipolar	1995	
DPC 750	400	700	yes	1	6	1.0	yes	LED	Mosfet	2395		
CS200X	130	120	110	240	yes	1	8	1.0	yes	LED	Bipolar	995
CS400X	210	300	420	yes	3	18	1.0	yes	LED	Bipolar	1695	
CS800X	420	600	840	yes	3	20	1.4	yes	LED	Bipolar	1895	
CS1000X	525	750	1050	yes	3	24	1.4	yes	LED	Bipolar	2395	
CS1200X	630	900	1260	yes	4	32	1.4	yes	LED	Bipolar	3395	
M2600	75	130	-	yes	3	12	1.0	yes	LED	Bipolar	995	
M3000	120	210	300	yes	3	13	1.0	yes	LED	Bipolar	1195	
300 Series		150		yes	4	14	0.5	yes	LED	Bipolar	795	

PIONEER. PIONEER AUSTRALIA (03) 586-6300. Made in Japan

MV-2000	220	350	700	yes	2	21	.775	yes	LED	Bipolar	2300
MV-3000	310	500	1000	yes	2	22	.775	yes	LED	Bipolar	2700

QSC. From ARTECH SYSTEMS (03) 752-4088. Made in USA

MX700	170	270	350	450	yes	2	12	1.0	yes	LED	Bipolar	999
MX1500	360	510	750	1000	yes	2	22	1.0	yes	LED	Bipolar	1799
MX2000	425	725	1000	1200	yes	3	34	1.0	yes	LED	Bipolar	2799
USA 370	125	185	250	300	yes	3	11	1.0	yes	LED	Bipolar	999
USA850	270	425	550	650	yes	3	16	1.0	yes	LED	Bipolar	1399
USA1300	400	650	1000	1250	yes	4	25	1.0	yes	LED	Bipolar	1999

NOTES RE WATTAGE. Wattages shown in this buyers guide are R.M.S., and supplied by the importer/manufacturer. Many, if not most, of these manufacturers conform to the EIA rating standard. Some amplifier specifications also include output power with both channels driven as determined by application of IEC tone burst. These higher output wattages are not shown above, but may appear on brochures or promotional material. The publisher has accepted information at face value from the above firms, and do not warrant any specifications or prices herein as 100% accurate. (But we try our best!)

Watts, 8Ω/ch
Watts, 4Ω/ch
Watts, 2Ω/ch
Bridge, 8Ω/ch
Output Protect?
Height in rack units
Weight in KG
Input sensitivity, volts
Volume controls?
Signal metering?
Output devices?
Price

QSC. From ARTECH SYSTEMS (03) 752-4088. Made in USA

1100	50	70	90	140	yes	1	6	1.0	yes	LED	Bipolar	1199
1200	100	150	250	300	yes	3	11	1.0	yes	LED	Bipolar	1299
1400	200	300	550	600	yes	3	17	1.0	yes	LED	Bipolar	1599
1700	325	500	750	1000	yes	4	26	1.0	yes	LED	Bipolar	2599
EX 800	175	275	400	550	yes	2	18	1.0	yes	LED	Bipolar	1899
EX 1250	275	400	600	800	yes	2	19	1.0	yes	LED	Bipolar	2399
EX 1600	400	600	800	1200	yes	2	20	1.0	yes	LED	Bipolar	2899
EX 2500	500	750	1000	1500	yes	3	25	1.0	yes	LED	Bipolar	3799
EX 4000	720	1100	1400	2200	yes	3	29	1.0	yes	LED	Bipolar	3999

RAMSA. From RAMSAUDIO (02) 477-7377. Made in Japan

WP-120C	120	200	400	yes	2	11	1.23	yes	LED	Bipolar	1590
WP-140C	240	400	800	yes	3	17	1.23	yes	LED	Bipolar	1880
WP-911C	100	150	300	yes	2	13	1.23	yes	LED	Bipolar	1790
WP-922C	200	300	600	yes	3	17	1.23	yes	LED	Bipolar	2390
WP-944C	350	700	yes	3	34	1.23	yes	LED	Bipolar	POA	

ROLAND. From ROLAND AUST (02) 982-8266. Made in Japan

SRA 50	50				1	2	vari	yes	LED		795
SRA804	20x4	25	10x4	25	yes	2	7	vari	yes	LED	1595
SRA500C	250	400		800	yes	3	28	vari	yes	LED	5995

TOA. From AWA DISTRIBUTION (02) 888-9000. Made in Japan

P1030D	100	150		300	yes	3	18	1.23	yes	LED	Bipolar	2169
P1060D	200	300		600	yes	3	20	1.23	yes	LED	Bipolar	2479
P1090D	300	450		900	yes	3	21	1.23	yes	LED	Bipolar	3229
P300D	300	480		960	yes	5	35	1.23	yes	no	Bipolar	3099
P150D	150	220		440	yes	3	20	1.23	yes	no	Bipolar	2670
P300M	300	480		n/a	yes	5	28	1.23	yes	no	Bipolar	2059

VANTAGE. From DYNAMIC MUSIC (02) 939-1299. Made in Korea

VP200	80	100		270	yes	1	9	.775	yes	LED		795
VP300	100	150		360	yes	2	12.5	.775	yes	LED		995
VP500	210	250		600	yes	2	13.5	.775	yes	LED		1195
VP800	280	400		800	yes	2	18	.775	yes	LES		1395

YORKVILLE. From DYNAMIC MUSIC (02) 939-1299. Made in Canada

AP600	180	300		600	yes	2	18	1.2	yes	LED		2395
AP1200	250	400	600	1200	yes	2	16	1.4	yes	LED		2850
AP3000	475	750	1250		yes	2	18	1.4	yes	LED		3550
AP3400	750	1250		2400	yes	2	18	1.4	yes	LED		3850

YAMAHA. From YAMAHA MUSIC AUSTRALIA (03) 699-2388. Japan

P120	120	200			yes	2	9	1.23	yes	no	Bipolar	995
P2160	80	125		250	yes	2	10	1.23	yes	LED	Bipolar	1795
P2350	175	250		500	yes	3	19	1.23	yes	LED	Bipolar	2150
P2700	350	500		1000	yes	3	24	1.23	yes	LED	Bipolar	2650
2040 quad	40				yes	2	6	1.0	yes		Bipolar	729
4050 quad	140	70x4			yes	1	7	1.23	yes	yes	Bipolar	1995
PC1602	160	240		480	yes	3	22	1.23	yes	LED	Bipolar	2095
PC2602M	260	400		800	yes	4	22	1.23	yes	LED	Bipolar	2695
PC1000	100	140		280	yes	1	11	1.23	yes	LED	Bipolar	3695
PC3000	330	450		900	yes	1	19	1.23	yes	LED	Bipolar	5295
PC4002M	430	700		1400	yes	4	43	1.23	yes	VU	Bipolar	5295

AUDIO TELEX: Phone (02) 647-1411. Made in Australia.
Constant Voltage Amplifiers
 SA500B 500w RMS. 100v, 4 ohms output. 10k input. 2 r/u \$1566
 SA250B 250w RMS. 100v, 4 ohms output. 10k input. 2 r/u \$1 55
 SA120B 120w RMS. 100v, 70v, 8 ohms o/p. 10k input. 2 r/u \$676.

ALSO AVAILABLE: Ross (CMI 03-315-2244), Phonic (CMC 02-905-2511), Carver (Pro Audio 06-249-7766), PTM (PTM 02-361-5847), Abbey (Abbey 03-786-4211), Audio Centron (Music Linx 03-429-9299), AudioSound Labs (Audiosound 02-938-2068), Bryson (Syn ec 02-417-4700), BSS (ATT 03-379-1511), Brook (Mark Furniture 02-519-9220), BFA (Pro Light & Sound 02-637-0444), Carvin (Venue Music 02-267-7288), Champ (Exciting Lighting 03-72E-6337), HH (Laser 07-236-2333), H II Audic (MG Hoskins 02-597-3683), M+B Music Systems (MHB 08-352-3685), NJD (Musitronics 08-234-2789), Jade (Jade 03-499-4566), Sarnick (Aust. Music 03-372-4488), SCV (AR Audio Eng 02-299-3666), SoundTech (Bridge System 03-380-5133), Turner (Turner Audio 033-36-125

Buyers Guide

DIMMERS

All prices do NOT include sales tax, as per Lighting Industry convention.

DYNALITE. Call (02) 564-1400.

Model	# Ch	Wattage	Application, notes	Price
Pro Rack	12	2400	DMX or analogue operation, fuse protection, 3 phase 40 amp feed	1895
Production Dimmer	12	2400	DMX or analogue operation, circuit breaker protection, 3 ph. 40a feed	2885
	6	5000	-As above-	2885
Project 12	12	2400	DMX, analogue & DYNET, wall mount, architectural/energy management	3769
	6	5000	-as above-	3769
Studio 12	12	1000	Analogue rack, single 32a feed	1150
Unit Dimmer	1	2400	10a, followspot type dimmer	338
Dimtek 404	4	1000	16a feed, architectural, approx price:	916
Dimtek 405	4	1250	20a feed, architectural, approx price:	916
Dimtek 410	4	2400	40a feed, architectural, approx price:	1140
Dimtek 210	2	2400	20a feed, architectural, approx price:	1030
Dimtek 220	2	5000	40a feed, architectural, approx price:	1140
Dimtek 110	1	2400	10a feed, architectural, approx price:	617
Dimtek 120	1	5000	20a feed, architectural, approx price:	763
Dimtek 404A	4	1000	16a feed, architectural, approx price:	825

-all Dimtek units accept DYNET & Analogue feed-

BYTECRAFT. Call (03) 587-2555

Model	# Ch	Wattage	Application, notes	Price
Bytesize 2k12xy	12	2400	DMX, Analogue, Felix, Command link i/f, 600usec rise time, circ. breaker, fault reporting, internal programming, SCR, touring or install, broadcast quality	\$3-6k
Bytesize 5k06xy	6	5000	DMX, Analogue, Felix, Command link i/f, 500usec rise time, circ. breaker, fault reporting, internal programming, SCR, touring or install, broadcast quality	\$3-6k
Bytesize 483TR	12	2400	DMX, Analogue, Felix, Command link i/f, 600usec rise time, circ. breaker, fault reporting, internal programming, SCR, touring or install, broadcast quality	\$3-6k
Bytesize 483TR	6	5000	DMX, Analogue, Felix, Command link i/f, 500usec rise time, circ. breaker, fault reporting, internal programming, SCR, touring or install, broadcast quality	\$3-6k
Bigtop	12	2400	DMX, Analogue, Felix, Command link i/f, 2 outlets per dimmer, guard rail, 600usec rise time, circ. breaker, ELCB fault reporting, internal programming, touring or install, broadcast quality	\$3-6k
Bigtop	6	5000	DMX, Analogue, Felix, Command link i/f, 2 outlets per dimmer, guard rail, 600usec rise time, circ. breaker, ELCB fault reporting, internal programming, touring or install, broadcast quality	\$3-6k
CS (Quad)	36	2400	4 dimmers per module, DMX, Analogue Felix, Common Link, SCR, 1000usec rise time, circ. breaker, fault reporting, int. programming soft patch, curve control, install. Broadcast quality.	POA
CS (Quad)	36	5000	4 dimmers per module, DMX, Analogue Felix, Common Link, SCR, 600usec rise time circ. breaker, fault reporting, int. programming soft patch, curve control, install. Broadcast quality.	POA
CS (Quad)	18	10,000	2 dimmers per module, DMX, Analogue Felix, Common Link, SCR, 500usec rise time circ. breaker, fault reporting, int. programming soft patch, curve control, install. Broadcast quality.	POA
JLTRA	4	5000	Top of the range, mains voltage compensation, internal programming of 100 presets, soft patch, curve control, broadcast quality. Prof. perm. installation. 1600usec rise time, DMX, Felix, Command Link Analogue, SCR, Ripple rejection, circuit breaker.	POA

GENI. Call Aust. DJ Supply Co (02) 564-2277.

Model	# Ch	Wattage	Application, notes	Price
SR1210	12	2400	modular switch/dimmer rack with circuit breakers, ea. channel. From:	1245

JANDS. Call (02) 516-3622.

Model	# Ch	Wattage	Application, notes	Price
Roadpak Digital	12	2400	Installation & touring rack, Ferrodiap chokes, local test facilities	2495
Roadpak Analogue	12	2400	Installation & touring rack, Ferrodiap chokes, local test facilities	2245

LSC ELECTRONICS. Call (03)836-9111.

Model	# Ch	Wattage	Application, notes	Price
Tour Series	12	2400	Rack mount low profile, Analogue	2750
Tour Series	12	2400	Rack mount low profile, Digital	2750
Wallpack	12	2400	Wall mount, programmable, Analogue	2750
Wallpack	12	2400	Wall mount, programmable, Digital	2750
Series H	4	2400	Installation, 40a 1 phase, Analogue	1180
Series H	4	2400	Installation, 40a 1 phase, Digital	1490
Series H	2	4800	Installation, 40a 1 phase, Analogue	1180
Series H	2	4800	Installation, 40a 1 phase, Digital	1490
Series H	1	2400	Installation, 10a, 1 phase	660
Series H	1	4800	Installation, 10a, 1 phase	750

PHOENIX MICROTECHNOLOGIES. Call (08) 293-8752

Model	# Ch	Wattage	Application, notes	Price
Nebula Lighting	12	200	Single 10a feed, DMX or Analogue in.	1199
Nebula Lighting	12	2400	3 phase feed, DMX or Analogue in/out	2499

Already Profiled:

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AUGUST:	Studio Mixing Consoles	Moving Lights
SEPTEMBER:	Microphones	Lighting Control
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NOVEMBER:	Speakers	Fresnel spots
DEC/JANUARY:	Recorders,	Follow spots
	OB Production Mixers	Fog Machines
	Powered Mixers	Studio Lumin.
FEBRUARY:	Wireless Microphones,	Scrollers/Col. ch.
Next Year:	Music Technology products, software, instruments, Colour medium, rigging, cables, audio effectors, processors, keyboards, effects lighting and more. Please call (02) 876-2612 for details.	

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With Paul Bryant

WHAT'S A PNEUMATIC, AND WHY DO I NEED ONE?

The ultimate goal of any recording session is to produce a set of master tapes, and these days these "tapes" could be dat, quarter inch analogue, two tracks of an adat, cassette, CD-R, computer disc etc...

However, this is not the end of the story when it comes to getting your music out on CD. Few people realise that ALL CDs are produced from a modified video recorder (called a U-MATIC) having been encoded by a special digital audio processor called a 1630.

When you are preparing your final mixes you should be aware that the mix you send to the record company is going to be re-mastered before appearing on CD.

The 1630 processor produces 16 bit digital audio at a 44.1 kHz sampling frequency, which allows the CD to be produced directly from the U-matic tape. If you mix onto a dat machine set to 44.1 kHz then your mix can be transferred digitally to the 1630 processor, but all other tapes must be converted to this format first.

This conversion can range from a basic additional analogue stage to a sophisticated sampling rate converter. In other words, if you record your dat at 48 kHz it is quite likely that it is being converted back to analogue before being re-recorded at 44.1 kHz.

Analogue tapes must be converted to the digital domain and the alignment of the replay machine is critical if the fidelity of your mix is to be retained.

This is real Dirty Harry territory - "You've got to ask yourself, Do I feel lucky?"

If you are concerned about the accuracy of this transfer then perhaps you should book into a mastering facility and supervise the

transfer to digital yourself.

Given that a digital recording is essential to producing a CD you should seriously consider mixing to digital from the outset. Providing your dat machine is equipped with the right facilities and used in conjunction with a digital editor, you can prepare a master which can be transferred directly to 1630.

The reason that CDs cannot be made directly from dat tapes is that dats are not designed to accept the additional codes necessary to master a CD. For this reason 1630s have remained the mastering standard since the introduction of CDs.

This is about to change with the introduction of a new Magneto Optical Disc recording system, which can be seen as part of the general move away from tape based systems and is expected to eventually replace the 1630 format. The new M.O.D. system paves the way for up to 24 bit processing and self contained editing facilities.

- Next month's topic - EDITING.

Finally, an amazing story from the recent AES convention:

An anonymous band received their CDs back from the plant only to find that although the discs started off fine, further into the disc something sounded very odd. It turned out that their "engineer", Wally Spacecadet, had changed sampling frequencies midway through the master! (The dat had been transferred digitally, and 1630s don't operate at 48kHz. Back to audio school for this guy.)

PAUL BRYANT is a Mastering Engineer at All Music Manufacturing, call (02) 557-1169.

RICH MUSIC SAYS:

"Rich Music Studios are currently negotiating with an Australian syndicate to invest in the Company.

Paul Rich secured repossession of Rich Studios on 30 July, 1993 after the sale of the business to Meridian was aborted.

Recognising the difficult financial position of the Company, the directors appointed Mr. Giles Woodgate of chartered accounting firm, Woodgate & Company, as Voluntary Administrator on 16 August 1993 in terms of Corporation Law.

Mr. Woodgate said, "The syndicate was attracted by the ability of the business to generate strong cash flow when managed effectively".

"The studio is already 80% booked for October and this is in part due to the growing demand for recording and mixing facilities and the Company's competitive pricing policy."

The deal is expected to be concluded at press time. The administrator and the syndicate have agreed, subject to documentation and fine tuning of terms and conditions, for the syndicate to invest substantial capital into the business, which will secure the business's financial future."

** The above is a prepared statement. The Auction sale of the studio's assets (confirmed by Mason Grey Strange) that Paul Rich had planned for last month was cancelled. See also 'Letters' page. -Editor.*

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EX-TRACK

With Caroline Grafton

Sony Music Studios, near Eastern Creek NSW, have just added to their collection of in-house entertainment a new Totem Pinball Machine courtesy of 'Wizard Skarski'. Paul 'Chomper' Gray is still possuming away in the Bedouin Midi Tent and Pro-Tools is running extremely hot on various projects. Call Simon Tonx on (02)332-0320.

Troy Horse Studios, Sydney NSW, have added to their collection of gear with the purchase of Tannoy Little Red Monitors, Ashley Noise Gates and an Ashley PQ26 Dual band Parametric EQ. Call Katie on (02)557-3129.

Rich Music Studios Pty Ltd, Sydney NSW, are currently hosts to Al Wright noted for his work with INXS, Jenny Morris and Barnsie. Give Paul Rich a call on (02)264-7734. See also page 39 this issue, for the latest chapter in ever unfolding Rich Music saga.

The Enterprise, Sydney NSW, are always on the look out for reputable and serious musos, programmers and songwriters to add to an already strong pool of talent. You can send a demo of your *copyrighted* work (no more than two tracks), and a stamped self addressed envelope, to 51 Windsor Road, Dulwich Hill, NSW 2203 to the attention of Graeme Storer.

Enrec Studios, Kurri Kurri NSW, act Newcastle hard rockers 'Idols' are currently enjoying success in Germany where CD orders for their CD are exceeding those on the local market. Enrecs' Steve Newton is currently working at Trafalgar and 301 in Sydney with John Williamson. Peter Bazely and Don North are also sessioning at Enrec in preparation for Keith Blinman and Sharon Mann albums. Give Ed a call on (049)36-1376.

Damien Gerard Sound Studio, Ultimo NSW, Russell Pilling is

BASF National Tracking Guide

ARTIST	PRODUCER	ENGINEER/S	NOTES
New South Wales			
Airmotion Studio	Contact Kristen Wolek	(02) 550-3863	24 Track
Paranormal Music Society	Society Guy Dickerson	Album	
All Music Manufacturing	Contact Geoff Sturre	(02) 557-1169	Mastering
Shake The Jungle	Rob Specogna	Paul Bryant	CD Master
Mark Matthews	Greg Lansom	Paul Bryant	CD Master
Icehouse	Massive Paul Bryant	12" Vinyl	
INXS	Warner Bros	Paul Bryant	12" Vinyl
Hercules	Polydor Paul Bryant	12" Vinyl	
Artrage Studio	Contact Ian Chambers	(02) 564-2509	24 Track
Bangarra Dance Theatre	Rasty Jovasevic	Rasty Jovasevic	Play-Back
Dub Congress	Rasty Jovasevic	Rasty Jovasevic	Single
2000 FM	Rasty Jovasevic	Rasty Jovasevic	Jingles
Bondi Youth Wave	David Mason Cox	Rasty Jovasevic	E.P.
Bush Traks Recording Studio	Contact Ruth Miller	(066) 89-1290	24
Crazy World	John Sayers	John Sayers	Demos
Two Pot Screamers	Hewey Cafe/Eustace McQuillen	Dave Highet	Demos
Test Tube Dancers	Dave Highet	Dave Highet	Backing Tracks
Marion Webb & Kerry Porter	Dave Highet Dave Highet	Backing Tracks	
Gary Dennis	G.Dennis/D.Highet	Dave Highet	Demos
Charing Cross Studios	Contact Gordon Hervey	(02) 387-8362	16,24
Jenny Morris	Steve Balbi/Justin Stanley	Gordon Hervey (Asst.)	Album Tracking
Damien Gerard Studios	Contact Elia Bell	(02) 660-8776	16/32 Track
Dr. Fruitworld	Damien Lovelock	Russ Pilling	E.P. 32 Track
Eva Trout	Band	Russ Pilling	Demo 16 Track
PSK	Dave Price Dave Price/Mike Wood		E.P. Mixing 16 Track
OUAT	M. Cullen	M. Cullen	Album Tracking 32 Track
Cluster	Brent Williams	Russ Pilling	E.P. 32 Track
Enrec Studios	Contact Ed Matzenik	(049) 36 1376	32 Track
Katrina Aitkin & Steve Cowley	Steve Newton	Steve Newton	Demo
Vince Murphy	John Broomhall	Steve Newton	CD for Kookaburra/EMI
Sharon Mann	Steve Newton	Steve Newton	CD
Festival Studio	Contact Vicki Eldridge	(02) 660-4022	
Poor Boys	Paul Northfield	Paul Northfield/Zubin Henner	Album
Smudge	Nick Dalton	Tim Whitton/Colin Simkin/Zubin Henner	E.P.
Main Street Studios	Contact Rob Specogna & Murray	(042) 83-4515	16
Loaded Dog	Band	R. Specogna	Album
Still Falling	Ed Tacey	R. Specogna	C.D. Album
Trashed Out Cats	Band	R. Specogna	Demos.
Ebony Rose	Band	Murray Nicholas	Album
The Fine Line	Band	Murray Nicholas	Album
Still Steaming	Band	R. Specogna	Demos.
Megaphon Sound Recording Studio	Contact Guy Dickerson	(02) 516 3917	
"Traps" Filmscore	Greg White & Steven Roe	Craig Preston (Eng.) & Jason Blackwell (2nd Eng.)	
Powerhouse Studios	Contact Doug Henderson/Craig Back	(042) 318 1220	
Fathom	Band	Dave Russell/Craig Back	Demos
Big Men Fly	John Hresc	John Hresc/Craig Beck	E.P.
Wendy Harte	Lean Bergerf & Doug H.	Doug Henderson/C.Beck	Album
Maryanne Mercury	Lean Berger & Doug H.	Doug Henderson/C.Back	Single
R&R Recordings	Contact Robert Zimola	(02) 624-4484	16 Track
Nu-Skin	R. Zimola R. Zimola	Sound Tracks	
Legacy of Sound	Mick Cardy	R. Zimola	Pre-Productions
Chris Turner/Jason McDanial	Chris Turner	R. Zimola	Pre-Production
BYSA	BYSA	R. Zimola	Demo
Rich Music Studios	Contact Paul Rich	(02) 264-7734	24,32 Track
Swoop	Josh Beagley	Martin White	E.P.
Richard Lawson	Tom Kazaz/Richard Lawson	Tom Kazaz	Album
MAYA	MAYA/Fraser	Fraser Stuart	Demo
Dog Trumpet	Brett Stanton		Single Remix
Eddie Duquerman	Eddie Duquerman	Fraser Stuart	Album
Tin Lids	David Frogett	Brendan Morley	Album Mix
Riversound Recordings	Contact K.O. Kazokas	(02) 534 3496	
Floyd Vincent & The Child Brides	Floyd Vincent/John Harvey	John Harvey/K.O. Kazokas	C.D. Mini Album
Ratbag	Greg Clarke/Ratbag	Greg Clarke	Track - C.D. Compilation
Ruby Jargon	Greg Clarke/Ruby Jargon	Greg Clarke	Tracks - C.D. Compilation
Tony Deveaux	K.O. Kazokas/Tony Deveaux	K.O. Kazokas	Mixdown - C.D. Mini Album
"Style"	K.O. Kazokas/Style	K.O. Kazokas	Album Cassette Release
Kilswitch	K.O. Kazokas/Kilswitch	K.O. Kazokas	Album Recording for C.D.
"Sidewinder"	K.O. Kazokas	K.O. Kazokas	Demo
"Contraband"	K.O. Kazokas	K.O. Kazokas	Demo
SAE Studios	Contact Tom Misner	(02) 211-3711	24 Track
Larrabees Birthday	Jason de Wilde	Jason de Wilde	Demo
Skyhigh Recording Studios	Contact Rob Taylor	(049) 50-1574	8,16,24 Track
Sheridan	Rob Taylor	Rob Taylor	Dance E.P.
The Olive Branch	Rob Taylor	Chris Greenhalg	E.P. No.2 Phantom
The Galore	Rob Taylor	Chris Greenhalg	Single
Jesters Planet	Rob Taylor	Chris/Owen	Single

YOUR MUSIC IS SAFE WITH US



BASF

BASF National Tracking Guide

ARTIST	PRODUCER	ENGINEER/S	NOTES
Daisy Chains	Daisy Chains	Rob Taylor	Track Laying
Honey Seed	Chris Greenhalg	Chris	Demos
Angry Earth Mothas	Chris Greenhalg	Chris	Demos
The Whitlams	Rob Taylor/Chris Greenhalg	Track Laying E.P. No.2	
Ragmonster		Rob Taylor	Demos
Me Me Me		Rob Taylor	Demos
Sony Music Studios	Contact Ross Ahern	(02) 332-0320	24 Track
Phil Beazeley	Phil Beazeley	Simon Tony	Publishing Demo
Hammond Eggs	Phil Beazeley	Simon Tony	Groove Demo
Smudge	Tim Whitten	Tim Whitten	Album
Exponents	Band	David Hemming	Album
Boxcar	Band	Adrian Bolland	New Tracks
The Enterprise	Contact Graeme Storer	(02) 564 3225	8 Track Midi Suite
The GL's	GL's & G.Storer	Graeme Storer	Demos
Blaise	Storer/Blaise	Graeme Storer	Album
Maher & Smith Plumbing	Graeme Storer	Jingle	
Various High Schools	Graeme Storer	Notator Set-Ups (Mac & Atari)	
Enterprise Songwriter's Group	Graeme Storer	et al.	Publishing Demos
Troy Horse Studios	Contact Katie	(02) 557 3129	
Reg Lindsay		John Rafferty	Album
Ice Nine		Michael Lewis	Demo
Grumble Chubby		Bruce Waite	Demo
Polyanna		Bruce Waite	Album
Side Winder		Bruce Waite	Album
Wirra Willa Studios	Contact Will Rout	(02)605 1203	16 Track
Body Moroney	Phillip Stein	Ian Cooper	Demo
Malcolm Baxter	Phillip Sten	Ian Cooper	Album 3
Nathan Cavaleri	Bob Meredith	Ian Cooper	Video Soundtrack
The Real Thing	The Band/Anthony Vacala	Ian Cooper	Demo
Nick Nova	Nick Nova	Ian Cooper	Album
Jen Russell	Phillip Stein	Ian Cooper	Demo
Queensland			
Grevillea Recording Studios	Contact Malcolm Jacobson	(07) 262-8422	24 Track
Jeff Usher	Jeff Usher/Bruce Jacobson	Bruce Jacobson	Album
Colin Brumby	Rodney Jacobson	Rodney Jacobson	Album
Nick Coetzee	Nick Coetzee/Murray Lalor	Malcolm Jacobson	Album
Official Denial	Laurie Stone/Garry McDonald	Bruce Jacobson	Film Soundtrack
Funke	Craig Sue	Malcolm Jacobson	Demos
South Australia			
Mixmaster Productions	Contact Mick Wordley	(08) 278-8506	24 Track
Violets	S MacQueen	Mick Wordley	Album
Blue Experience	S Sheldon	S Sheldon	Album
Nick Vall	Vall/Wordley	Mick Wordley	Album
Daisy Heads	Worcley	Mick Wordley	Pre-Prod
Russian Caravan	Worcley	Mick Wordley	Demos
Leigh Newton	Worcley	Mick Wordley	Album
Victoria			
Audio House Pty.Ltd.	Contact Nikki Mackenzie	(03) 532 0633	
Australian Metal 2	Various	Gary Mackenzie	CD Compilation
Bengal Tigers	Band	Gary Mackenzie	E.P.
Alarum	G.Mackenzie	Gary Mackenzie	Demo
Yazco/BHP	Various	Gary Mackenzie	CD Compilation
Angel of Death	G. Mackenzie	Gary Mackenzie	Pre-Production
Late November	G. Mackenzie	Gary Mackenzie	Pre-Production
Metropolis Audio	Contact Kerri Minchin	(03) 696 2111	
Starworld	Jed Starr	Mat "Razor" Thomas	EP for Mushroom
Mr. Universe	Bill Page	Doug Roberts/Asst.Timmy J.	Single for Mushroom
Mr. Universe	Bill Page	Mat "Razor" Thomas	Remix
TISM	Jock	Mat "Razor" Thomas	Remix of E.P.
Deborah Conway	Jim Rondinelli/Willy	Jim Rondinelli/Asst. Greg O'Shea	Album Tracking
Duffield Kenihan	Phil Kenihan/Andrew Duffield	Phil Kenihan	World for Kids
Nick Barker	Richard Pleasance	Doug Roberts/Asst. Timmy J.	E.P.
Juno Roxus	Ross Cockle/Craig Harnath	Ross Cockle	Album Mixes
The Truth	The Truth Cameron Craig/Asst. Greg O'Shea	Greg O'Shea	Album Mixes
"Talk"	John Clifford/White	Mat "Razor" Thomas	Film Score
Boom Babies	Boom Babies	Mat "Razor" Thomas	E.P.

back after a well deserved break and is already hard at work on various projects. It seems a few of our readers misinterpreted the AMID Directory Update last issue and thought Russell had left for good, but we can't get rid of him that easily and would we really want to? DGs' have installed headphone systems in both studios hopefully making for happy musos when tracking. New patch bays have also been installed in Studio A, which have made sessions faster and even better value for money. The mixing schedule has been flat out lately with bands either using the Pultec valve EQs or on the other end of the scale the Apogee Digital to Analogue filters. The later device is also available for hire. Give Marshall, Elia or Mandy a call on(02)692-9915.

Under New Management, Cremorne NSW, have said goodbye to co-ordinator Gina Karpman, who has left for Singapore. Replacement, Michael Tame ex rooArt, has now settled in and I'm sure will keep us posted on the antics of the collective of engineers and producers in the future. Welcome from Connections Michael. For any enquires call Michael on (02)953-0332. **Skyhigh Recording Studios,** Jesmond NSW, David Henderson, as you read this, should be back in the US of A where he has been touring with DEF FX. But he did manage to return to our shores for a short period, for a break, in late September. Rob Taylor's collaborative Dance Project (tentatively titled 'Mantrasonic') with Sean Lowry and Larry Van Kreidt, is currently being remixed in New York by English producer Peter Corimar and Rob will be going over to complete

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(continued)

the project later this year. DEF FX will be commencing pre-production for their second album in November. Call Rob Taylor on (049)50-1574.

Power House Studios, Sydney NSW, have taken on Craig Beck (ex Enrec) as in-house engineer. Enrec and Connections wish him well. Call Power House on (02)318-1220.

Studio 52, Collingwood Vic., those persistent Nu-Music Sampler Series producers, have finally released the long awaited Sampler Series 7, featuring such acts as M Rock winners 'Primary Colours'. This act won recording time at Studio 52, a place on Sampler 7, legal advice from Tress Cox and Maddox and a trip to Japan to compete in the Yamaha International Song Contest. Other acts on the sampler include 'Borrowed Time', 'Wolfgang', 'The Chosen Ones', 'Tonic', 'River Mercy', 'Leather Zen' and winners of the Clash of the Titans band competition 'Guru Foundation'.

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BASF National Tracking Guide

ARTIST	PRODUCER	ENGINEER/S	NOTES
The Black Sorrows	Joe Camilleri	Doug Roberts/Asst. Timmy J	Remix
Chris Wilson	Chris Wilson	Doug Roberts	Demos
Newmarket Music Studios	Contact Dieter Bajzek	(03) 329-2877	16, 24 Track
Zydeco Jump	Jump/R Dillon	Robert Dillon	Demo
C & N Egan	Egans/R Dillon	Robert Dillon	Album
Chris Lewis	C Lewis	Robert Lewis	E.P.
Michael Atkinson	M Atkinson	Robert Dillon	Demo
Nursery Crimes	MDS	John Ruberto	CD Mast.
Gentle Persuasion	MDS	John Ruberto	CD Mast.
The Silver Brumby	Colin South	John Ruberto	CD Mast. for S'trk.
Powder Monkees	Shock Records	John Ruberto	CD Mast.
Big Pop Monster	MDS	John Ruberto	CD Mast.
Harvey Welsh	H Welsh	John Ruberto	CD Mast. for S'trk.
Ren Walters	R Walters	John Ruberto	CD Mast.
Box Hill TAFE		John Ruberto	CD Mast.
Platinum Studios	Contact Gary Moorhead	(03) 827-7483	48 Track
Scary Mother	Scary Mother	Rick Will/Kalju Tonuma	Album Mix
Max Vella	M Vella	Mark Forrester/Kalju Tonuma	Album Mix
J.C. Superstar N.Z. Cast	David Hershfelder	Michael Letho/Krys Powell	Album Mix
Charlie Marshall	C Marshall	Laurence Maddy	E.P. Record
Avalon	Laurence Maddy	Laurence Maddy	E.P. Rec. & Mix
Seven Stories	Seven Stories	Chris Corr	Rec. Tracks
The McQuades	McQuades	Chris Corr	E.P. Rec. & Mix
Human Zoo	Zoo/K Tonuma	Kalju Tonuma	E.P. Rec. & Mix
Studio 52	Contact Paul Higgins	(03) 417 7707	16, 24 Track
Derek Tinwall	T Carter	Trevor Carter	Album
Primary Colours	T Carter	Trevor Carter	NuMusic Tracks
Dutch Tilders	Barry Hills	Carter/Pat King	Live Album Mix
Tinsley Waterhouse	T Carter	Trevor Carter	EP CD
Tried to be Tragic	Tragic	Trevor Carter	Demos
Young Elders	Elders	Trevor Carter	Sing.CD/NuMusic Track
False Gods	Gods	John Copeland	Demos
David Watson	Watson	Trevor Carter	NuMusic Track
Whirled Records	Contact Craig McArthur	(03) 427-1436	16 Track
Icecream Hands	Icecream Hands	Craig McArthur	Album
Plums	Plums	Craig McArthur	Album
Hard Candy	Hard Candy	Craig McArthur	Album
Mr Universe	Mr Universe	Craig McArthur	EP
Western Australia			
Bonsai Recording Studio	Contact Tom Thorpe	(09) 349 6029	24 Track
M.D. Systems	T Thorpe	Tom Thorpe	Media CD
Andrew Breen	T Thorpe	Tom Thorpe	Demo
Prakash	T Thorpe	Tom Thorpe	Demo
Keith McDonald	T Thorpe	Tom Thorpe	Jingle
Planet Sound Studios	Contact John Villani	(09) 382-2211	24, 32, 48 Track
Power Shift	Mark Greenwood	John Villani	Demo
Bran-Nu-Dae	Chong Lim	Cameron Craig/Les Williams	Album
Jeff Brownrigg	Brownrigg/Villani	John Villani	Album CD
Off The Planet	Planet/Villani	John Villani	Single

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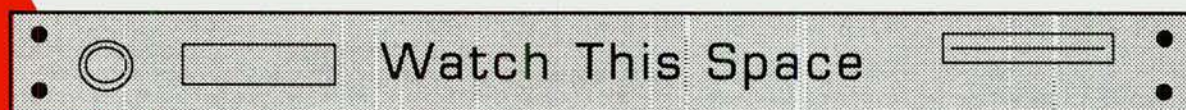
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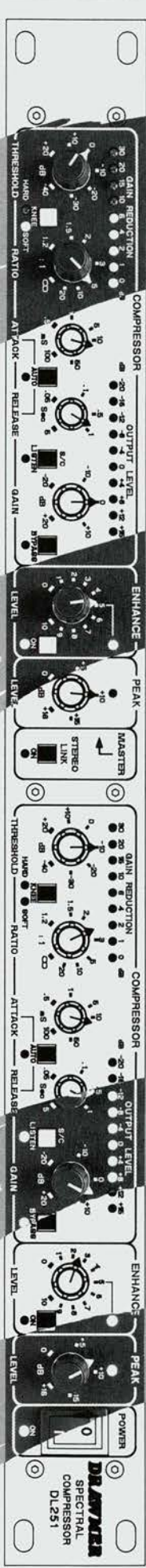
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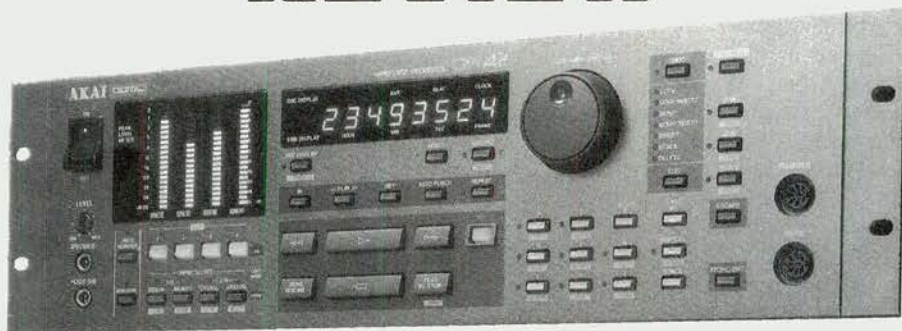
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REVIEW

AKAI DR-4 DIGITAL RECORDER

Getting a digital multitrack design onto the market these days doesn't pose the problems it used to for manufacturers - as more and more prospective purchasers are more greatly aware of digital data uses, and where it fits into their picture. The rate at which digital multitrack designs have been 'accepted' (a

very loose word) has brought about not only many designs, it's also forced the imminent release of more basic models that are easier to use and easier on the pocket. As with most products you get what you pay for (did we REALLY say that?) -and the digital multitrack

(continued over,

What is MIDI & how does it work?

part five

MUSICAL INFORMATION TRANSMITTED VIA MIDI

(1) MIDI Channel and Mode

1. Channel

MIDI is able to transmit a variety of information from a master instrument to a slave instrument. Either one part, or multiple parts can be transmitted, for example via a sequencer system.

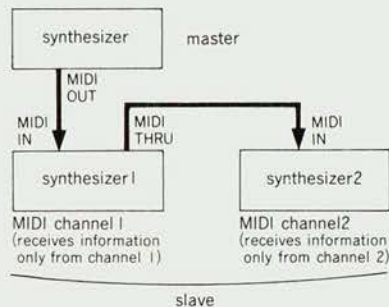
For this purpose, MIDI includes 16 "channels". All the different types of MIDI conversation can be sent via these 16 channels separately. So, with one MIDI cable, 16 parts can be played at the same time,

The concept of MIDI channels is similar to that of TV broadcasting in a sense. Many TV stations are transmitting their respective programs at the same time. This means that your TV antenna must be receiving all these channels at once. However, since all the stations are transmitting on different channels, you simply need to select the channel you wish to watch.

MIDI channels behave the same way. A MIDI master instrument is just like a TV broadcasting station. A MIDI slave instrument is like your TV receiver, although rather than transmitting through the air, MIDI is transmitted via cables.

The MIDI master instrument can then decide which channel to transmit, rather like choosing which TV station it wants to be. On the other hand, the slave instrument can behave like the TV set and choose which MIDI channel it wants to "hear". Even if information is received on all 16 MIDI channels, the slave will only "hear" the chosen channel, just like the TV set.

For example, if the instruments are set up as in the drawing (below), synth 1 only receives the information from channel 1 through the MIDI cable. Synth 2 only receives ch. 2.



(continued next month)

Re-printed from the MIDI Guidebook,
courtesy of Roland Corporation.

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With Danny Dun

READERS Q & A

DEAR MR. DUN: I've been wondering if the proliferation of effects processors on the market is due to a certain kind of I.C. becoming available. It seems every time I turn a page in Connections there is another 1 rack unit tall effector that seemingly will do anything except make coffee. I'm still back in the SPX-1000 era. What's happened?

-Ed Hawthorne, Eastwood NSW.

Yep! Right on the money. One of the reasons for the sudden explosion of new effect units and other boxes for that matter (eg: cheap samplers) is the availability of generic ICs. One such device which has been around for a couple of years called the Motorola DSP 56001 is a Digital Signal Processor. This is a chip that is designed to take the burden of performing all the complex number crunching that is necessary to generate a great effect away from the microprocessor in a device. This IC has set routines for calculating things like delays and amplification and is designed to do one thing - D.S.P. - very quickly.

Most digital audio toys these days use a DSP chip of some kind whether it be a generic one or a custom designed chip for a specific purpose. The microprocessor carries out all the control work such as linking your button press with a patch change while the DSP chip is processing that wonderful reverb sound. There are other generic ICs such as AD and DA converters and floppy disk controllers which not only help lighten the load on the microprocessor

Dear Danny: The guy asking about triggering drum sounds on Page 50 (September) should be really careful if using an Alesis D4 as there's a 25ms MIDI lag on the triggers, it's not too bad if using the internal sounds but if using as a stand alone trigger it's really noticeable. In the studio it's really easy to fix with a pre-delayed

(over)

trigger track - but not live. The Akai is the fastest trigger around at the moment.

-Marshall Cullen, Damien Gerard Sound Studios, Sydney.

Thanks for the advice. I have never tried the Alesis in a live situation to external devices. I do agree the Akai is very fast (although I'm slightly biased!) Also when used with the new Akai samplers up to 2 ME35ts (the Akai trigger unit) can be totally programmed from the sampler with on-screen representation of the trigger....neat!

Dear Danny: If I'm recording to the DR-4, DA-88 or Adat I think I want to buy, I'm in the digital realm. Why then don't my instruments and microphones output digital direct? Is the conversion from analogue to digital detrimental - and if not, why do firms like Apogee Electronics make filters? Maybe the magnetic recorder isn't dead yet?

-Peter Manny, Murray Bridge, SA.

There are many reasons why devices such as microphones and many instruments do not have digital I/Os. For a start the increased electronics necessary would increase the cost of the devices drastically. Many people do not need digital I/O as they do not have digital systems. When using multiple digital devices in a system their AD and DA converters need their clocks to be synchronised by what is called a word clock or house sync signal. This would require a second set of cabling and complex electronics to go with it. It is a lot simpler as far as the electronics and cost is concerned to package the analog to digital converters in one box. Note that

some instruments such as samplers and keyboards do output audio digitally, but this is usually an expensive option.

Any process in which you convert one form of energy into another is going to result in a change from the original. The process of converting real world audio into digital signals involves taking 'snapshots' of the sound at very short time intervals, thus you do not get a continuous representation of the sound as you do with analogue systems.

So YES - digital conversion is going to result in a different sound to the original, although most people would agree that the quality of today's systems is phenomenal. Depending on your school of thought, some prefer the sound of digital audio as it generally sounds cleaner, although more 'sterile', without the tape hiss or other nasties. Others prefer the sound of analogue systems as they tend to sound warmer and fatter than their digital counterparts.

Do better filters make for better sound? A big YES, Apogee make fantastic AD & DA converters.

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*Danny Dun is Digital Products Manager at Australis, also a member of 'Clan Analogue'.

AKAI DR-4 DIGITAL RECORDER

(continued)

market will be no exception. A distinction must at this point be made between digital multitrack recorders and digital editing systems and every sub-species of these two.

Just because a machine operates inside the digital domain does not mean it has every data manipulation function available to the genre. Due to the many characteristics of digital audio data, and the many tasks within which it is employed, manufacturers of disk based digital recorders have allowed it to become somewhat assumed by the market that because a device records to hard-disk it naturally follows that the unit will successfully perform fully implemented mastering type editing. It should be made clear that the Akai DR-4 and other similar leading disk based recorders enjoy functions such as non-destructive pasting, editing and shifting - however they invariably only perform down to a limited time division, and they rarely paste audio together as with a fully equipped mastering system.

In this review we look at, after playing with, the recent release from Akai of their new DR-4 hard disk recording "centre", a four track management device which allows the purchaser the choice of employing a multitude of third party hard disks.

Standing 3 rack units high the DR-4, itself, is not really going to cause many space problems and its dark grey finish (which is more than likely called "Gun Metal Sunset!") would normally lead to a look of obscurity if it weren't for the two prominent LED displays on the front panel. The display on the left of the ma-

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chine's face is a 20-segment LED Peak Level Meter showing each of four channels while a 7-segment LED window shows an hours, minutes, seconds, frames time clock that also becomes a display window used to show many other relevant parameter statistics.

Directly under the Peak Level display are four sets of buttons which combine to enable input and output termination selection as well as routing of incoming and reassigned tracks. Beneath the time display and its function buttons the panel is dominated by a set of rather large, instantly recognisable transport controls usually associated with the use of tape. Even though there is no actual tape these controls certainly makes using the recorder and the punch in and out functions easier, if only by familiarity. The right hand side of the front panel sports the integral jog and shuttle wheel assembly, edit and menu controls, remote control connection ports and a numeric key pad.

The DR-4 accommodates analog input/ output with two sets of four stereo 6.3mm jacks which are gain settable to +4dB or -10dB in pairs. Via software selection there is also a choice between coaxial (RCA) or AES/EBU (XLR) digital termination for each pair of tracks. An optional digital I/O board allows these terminations to be duplicated to facilitate full four track transfer. On a standard DR-4 the only other connection would be for SCSI, to enable the use of an external hard drive though there are a further four ports available for optional

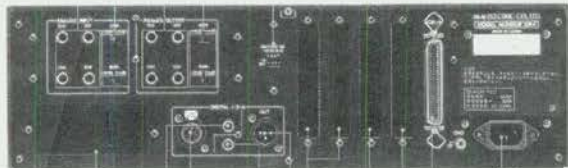
interface cards. Without any of the interface cards the basic DR-4 will not synchronise with any outside time log.

Checking out the DR-4 began with a ten minute exercise learning how to set and use the locate points as we were keen to avoid an existing recording residing on the hard drive. Because disk recording space is available to be used at any time point within a recording we went about giving our tracks a start time of 15 min 0 sec 0 frames. We mention this due to the fact that a recordings position in time, as you would see it against the time clock on the front panel, is not relevant to the hard disk. The hard disk itself may store pieces of recordings one after another that may be minutes apart during a song and by knowing their addresses it knows when and what to play or access for other functions. Locating points within a recording on the Akai can be achieved using any of eight 'instant' or one hundred 'not so instant' user programmable addresses as well as a nifty button which continually takes you back to the last two places you pressed STOP.

After learning to locate and being sure we weren't going to stuff someone else's music, we set about recording onto the DR-4. Firstly a stereo recording was made by going 'digital IN' onto Tracks 1 and 2 from a DAT tape. Then an individual recording was made onto Track

3 and likewise onto Track 4 using the analog inputs. These three recordings were made at 44.1 kHz as this was the source frequency of our DAT and the DR-4 does not do sample rate conversion. The quality of the recordings was as expected, living up to the high standards of digital audio, furthermore we managed to record on two tracks in digital at the same time as recording in analog on the remaining two.

Next on the agenda was to learn how to use



the editing, of which there are seven discreet types, permitting performance of such functions as Copy, Copy-Insert, Move, Move-Insert, Insert, Erase and Delete. All of these functions use the time display to set an In and Out address to label a area of tracks which can then be manipulated onto other places (addresses) in the recording or simply thrown away. Our method of putting this into practice was to get the analog overdub and attempt to paste it beside a new recording of our original stereo source. In this case our overdub was a sympathetic guitar riff to the stereo recording previously put down.

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Dave Macken & Bruce Waite walked the halls at Darling Harbour last month, where over 100 exhibitors of all persuasions grouped together for four days of endless questions - and to write some business. It was The Australian International Music Show 1993, and there was

MORE THAN MUSIC AT AIMS '93

What the hell is going on in this industry, we thought we were going to a music trade show....but - there was room to move, everyone was helpful and cheery, you could see the featured artists and the products were there to be handled (rare instruments an obvious exception). It would appear that the majority of participating distributors and retailers have lightened it up a bit and the 1993 Australian International Music Show was going to celebrate them in what can only be described as a gloriously large music store, or the most incredible din you've heard in a long time.

KICK IN THE PANTS: Between September 9 and 12 the inside of Halls 1 and 2 of the Darling Harbour Exhibition Centre were transformed into the AIM Show with the help of over one hundred product and service exhibitors who chose to bring their wares and their personnel to the people- en masse. To give the proceedings a good kick in the pants some very well respected musicians and clinicians from Australia and around the world were brought in to inform and entertain all those who were interested.

Major clinics and demo's were held in the live theatre section almost hourly and on the day we went you'd be excused for not looking at any of the products with the likes of Virgil Donati, Phil Emmanuel, Doug Wimbish, Will Calhoun, Frank Gambale, Don Burrows, Dom Famularo, and John Entwistle (dinosaurs are very popular at the moment aren't they) taking the stage at various times.

With all this excitement going on and so many products on display we spent much of the day goggle-eyed in every direction, from state of the art mixing consoles to guitar picks, stage lighting to piano shaped erasers, "it" and everything in between, was there. Some of the audio thingummy's that caught our attention are in this article, the others are out there in the market place.

Only a few "breakthrough" items were on show with most stand owners happy to participate by displaying their current or anticipated ranges, quite confidently we might add. As much as a lot of the music market is made up of imported product it was heartening to see local designs and manufacturers like PTM Electronics, Sleishman Drums, Jands, Australian Monitor and Bambach Seats (saddles for sore backs) attracting attention from not only the crowd, but big name musos as well.

DA 88 DIGITAL: After a bit a aimless (no pun intended) wandering we came across Geoff Gordon and Travers Faulkner of

Tascam fame, patiently displaying the new DA-88 digital multi-track recorders and other devices to which they can "talk". Thanks to it's "Video 8" tape format the DA-88 can rewind and fast forward at very high speeds said to be in excess of four times that of S-VHS. Controlling the display setup was the all-new Tascam RC848 remote which not only addresses up to six DA-88's, it also interfaces with existing Tascam remote ports as well as parrallel and RS-422 formats.

Shown to us was how well this new system could perform location and other commands alongside an existing analog multitrack. It was quite impressive to see two digital eight track units spooling faithfully in unison with the "rocking of the reels" on a 1" 24-track, as well as locking to "sync" with incredibly quick chase times.

Good to see a product intent on not only sounding good but also performing efficiently. Hopefully more of these machines will see light of day in this country as supply eventually catches up with demand. Travers say's there's currently orders pending for more DA-88's than he can ship and we feel that this adds weight to the argument that competition in the digital multitrack market is far from exhausted.

ADAT - & 'WHERE'S ALEX?'

Where supply may irritate some new products it is obviously not much trouble for the Alesis ADATs! These popped up as outboard gear on all sorts of stands both with and without the BRC remote controller. Some were displayed as sales items and some were there to assist in demonstrating other products but, either way, Alesis's ADAT multitrack has certainly made some in-roads throughout this country's digital market-place. Now that he's worked hard to establish the product this probably leaves much of Michael Allens sales work cut out for him answering endless questions like "are you sure you don't need a track for the timecode?", "does it do drop in's?" and "where's Alex?" (*Alex Bolt left Electric Factory just before the show to start a new business - which also exhibited at the show.*)

MIDI & BYTES: Syntec International showed their "dBX" range is staying fresh and keeping up with the times having on display two lesser priced compressor and gate models that have been introduced into the range as the new "200" series (for want of a better explanation) with one unit looking alarmingly like the popular Alesis 3630, yet said to retail for a hundred dollars less. These models will no doubt hot up the competition

at that price point renowned to be aimed at small home studios.

Rhythmic Bytes are a company who deal almost exclusively with MIDI based products and of particular interest at their stand was a software program which enabled standard music scores to be scanned into a computer and subsequently re-written as MIDI files for use in a sequencer. Representative, Peter Varley, says best results are obtained with a flat bed scanner, although the software will work with a hand-scanner and relies on actually "looking" at the dot image created on-screen by the scan to establish how to write the sequence MIDI data. Lookout!!

BACON & KARAOKE: Tucked away on the other side of a rather large DDA automated mixing console and not so far away from yet more ADAT's, Synchrotech were displaying the "Sonic Solutions" digital editing software package. This system comes as a basic non-destructive editing and pasting package which can then be expanded in numerous ways to enable capabilities including the patented "No Noise" sound reconstruction process (said to get rid of the "bacon frying" in the background of old and degraded 78's and movie tracks.) as well as the simpler digital de-noising and de-clicking options. At this juncture we've yet to get our hands on one of these systems for a full appraisal but the word on the street is that they are the "bee's knee's" for pedantic, perfectionist remastering.

What turned out to be a personal highlight for us was, of all things, the Casio KT-80 sing-along, karaoke keyboard. Remember the claims made in the back of magazines that, through a process never described, you could lift the vocals off an existing stereo recording, leaving you to sing along with the real band, so to speak. Until now, the only device we knew of that actually performed this task was a very expensive processor, a large investment for any lounge room listener.

Low and behold, tucked away on the "quiet side" of the show, as it became known, here was the Casio stand, hosting demonstrations of a keyboard with a built-in CD player and processor which could remove vocals from albums. Simply pop in your favourite CD, switch out the vocal, sing along, play along, laugh a lot! How well this works on ALL program material, we don't know, though it was quite effective on the songs we heard and considering it sells for well under a "grand", so it doesn't really bear stringent criticism. A very interesting toy indeed, imagine, now you can listen to new AC/DC recordings without "that annoying new singer"! (*Really! -Ed*)

AMAZING CLAIMS: We also dropped in on the display stand for the newly formed "Bridge Systems" importer. Run by Alex Bolt (very recently ex-Electric Factory.) this company are handling Washburn guitars and an increased range of Soundtech mixing consoles and public address products (also recently ex-Electric Factory). The Soundtech range includes cabinets of all sizes, graphics, crossovers and power amplifiers. Featured within the display was a sensibly thought out and designed series of consoles that are reasonably priced, the one we saw was under \$8000 for a desk incorporating 24 channels into 8 summing groups, dual inputs and a mono "sub-out".

Fair enough for what we saw, but we will, however, be interested to see if this range of budget consoles can live up to Alex's amazing

and repeated claims of their being able to "out-spec" and "out-perform" Neve, Soundcraft and SSL !!! That... we'll leave up to your ears!

ROMS, RAMS & SAMPLES: Showing a little more common sense, this magazine's very own Danny Dunn (what's Danny done now...get it!) was spotted demonstrating a mountain of the latest Peavey and Akai samplers and sound modules at the Australis display. He took time out to give us a look at Akai's pro-line CD-3000 CD-ROM sample player, a neat unit that hosts a CD-ROM sample library (2000 sounds from five discs) that you can sample from, for all kinds of wave manipulations, and save off to 3.5 inch floppy disk. The floppy disk drive also allows loading of all previous generation Akai

samples. Those who work "digital" a lot will be no doubt interested to hear from Akai of the imminent release of a digital patchbay which Danny says will cater for both AES/EBU and S-DIF termination.

The long hours required by the staff at these shows must eventually take it's toll on some as much later in the day we saw Danny again, he was playing sample loops over and over with a Peavey MIDI Bass guitar and just mumbling to himself. Considering the AIMS show was open for about forty hours over four days, add to this the preparation time required daily, as well as before hand, include the endless questions to be answered in competition with the surrounding noise and you've really got to hand it to those who stayed to the bitter end. Well done!

Julius Grafton re AIMS '93

Three Lighting exhibitors made good at AIMS '93 - Universal, Australian DJ Supply Co and LAVA. Alone amongst over 100 other exhibitors of all things musical and audio, they hunkered down and wrote business - well over \$300,000 worth they tell me, and that was well before the show was over.

Contractor Neil Mace summed it up: "I went out of curiosity, and Rod Salmon (LAVA) offered me such a hot Martin deal I called a customer and locked it in. I was mega im-

pressed!" The lighting presence extended to the AIMS LIVE THEATRE, which hosted mega star jams and all things musical almost every hour, to the chagrin of nearby exhibitors. A Martin lightshow was featured there, with Australian Monitor providing PA with help from Centre State Productions.

Professional Audio was well represented, by PTM, Australian Monitor, Amber, Ramsaudio, Syntec, and Amps Unlimited, while Yamaha, Australis and practically every major musical instrument distributor had a pro audio line.

Even Fender previewed a PA range! The largest pro audio exhibit was mounted by Jands, who turned the trend around by exhibiting their sole AXE guitar speaker cabinet. Their Array cluster barked forth whenever the organisers noise police were absent, Peter Twartz could not help himself!

Roland had the most imposing stand, a post-industrial erection that almost caught fire the night before the show opened. Our award for the most functional stand went to Australis, who also had the best catering!

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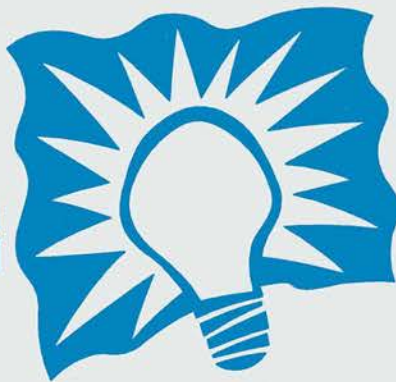
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The Idiot's

Basic LIGHTING Course

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Part Two.

The Idiot's guide to basic stage lighting crunches into Part Two this month, with the simple act of rigging examined in gory detail.

The committed lighting lady insisted The Idiot had started at the wrong chapter last month, "telling novices how a Par 64 is series wired is like trying to explain DOS to a kindergarten glass", she barked. "Why didn't you start at the beginning?"

Reason? Who wants to read, people want to LIGHT. So get a pair of Par 64's and plug them in. Moving along, we now look at the major muddle factor of any first time lighting rig. Planning and organisation.

Go hang a light on a spotbar or from a T Bar atop a stand. Hang another next to it. Put a colour frame into each and check they can swing from side to side, up and down. Often you've packed them too close together, and worse still, not dealt with the mains lead properly. The lead always runs from the light back to the dimmer rack, not the other way around. If you're going to have a heap of left over cable, or slack, have it back at the dimmer.

The cable coming out of the spotlight is almost always (and if not will not last) heatproof silicon or in the old days, PTFE. Before then in the era of the Pattern 23s and Patt 45, Asbestos sheaved cable was used. God knows I've reterminated hundreds of Patt 60's, Pageant Lanterns and 263's by nibbling back the fraying white death, but I'm still mostly vertical and not quite ready to sue someone yet!

An extension cable is not heat proof to the extent it can be draped across the lamp housing of a spotlight. Neither is the 3 pin Clipsal plug or socket. Left alone atop a lamphousing and either of these will eventually melt back to bare copper, whereupon a short circuit will add pizzazz to any performance. Simple little logical stuff like this should be put into your memory banks before you start.

Likewise you need some room to move at the spotlight in terms of cable, so the best rule is to take an armslength of the end of the extension cable into which you plan to plug the spotlight, and hang it over the bar beside the light. (See the drawing at right). You've got enough cable here to move the light about, or even shift it 200mm or so along the bar if need be.

When rigging lighting, deal with the cable

as per above, and start rigging the fixture furthest away from the cable exit end of the bar. This way you can hang it, plug it in, then toss the cable off the end, or over a point of the bar or rigging that you've chosen as a strain relief. The cabling sometimes weighs in at the same weight as the fixtures, so think about that too. You towards the cable exit point, so each time you move along to hang a new light you can place, or tidy up, the growing cable run that is often hooked above the tri-nut of your hook clamp - or sparingly gaffed to the bar as you work along it. This way you need only work along the bar once for rigging, and finally for focus.

A REAL BIG caution regarding spotlights and bars. The light -any light- sucks a lot of mains current, so if it has an electrical fault and goes live to earth, the horsepower is potentially fatal. Yeah Yeah you say, but if you are up the ladder and get a bite, you'll assume Newtons favourite theory is correct and fall to earth. IF and WHEN power is applied to EACH fixture, brush it with the BACK of your hand. This is your voltage check, if the thing is live you will recoil, but be expecting it. If you don't, and grasp the bar or the yoke of the light with your hand, your muscles will contract, locking your hand around the live metal. You will jerk off the ladder, and once your full weight is mid air, your grasp will break and you will fall. The hand will have second degree burns not unlike continual application to a BBQ griddle. I know this because it has happened to me.

One last (yes this may be boring) warning about electricity. It loves water. Once upon a time I lit a very early gig before the days of 3 phase outlets. Back then we used to 'hotwire' our 3 phase tail into the nearest available mains board. It was incredibly dangerous, illegal, and stupid. In the 1970's the entire fledgling rock and roll industry was powered by incredibly dangerous, illegal and stupid acts of bravado, so it was OK. I discovered electricity will jump out and get you if your hands are sweating, and that when your life is at risk, you sweat. It's a vicious circle, really! Another time a fuse blew at a gig, and in my rush I grabbed the porcelain fuse holder to pull it out, and got a big bite via my sweaty hand because I was

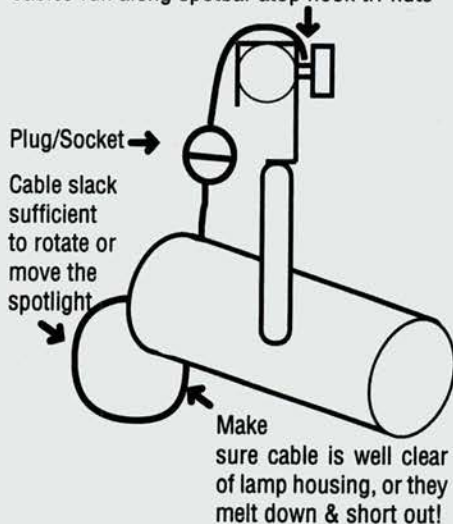
trying to pull the wrong holder - the one with 20 amps running through it.

One final anecdote - the pool party. Lighting parties is part of any new lighting persons rites of passage - and often fun too. The cables you use are run along the ground where all kinds of things happen to them. Normally 100% sealed by way of two layers of PVC sheaving they will run through puddles or even under water. Add the smallest puncture and you've got a mains leak. Like water leaks from a pipe, but the mains wont go anywhere until it has a path to earth.

When it started raining at this particular pool party, I prised myself away from the gorgeous teenager I was trying to seduce and rushed to the lights. I didn't turn them off, I just grabbed the T Stand and started carrying it toward shelter, dragging the cable loom behind me. The loom entered a puddle of water, a tiny puncture admitted water and I had 240v of hot metal in my hands, making for a new and rare display of pogo dancing. It brought the house down. (and the T Stand, smashing the die-cast lamp housing of a Pattern 23, bending a colour wheel and ruining 4 T1 lamps, worth 8.9 times the value of the party hire).

Just adopt these few cautions at the start of your new career, and live to enjoy yourself!
NEXT MONTH: MORE FOR LX NEOPHYTES!

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When not writing books or offending our dear readers, Duncan is also a Director at the 'New Look' ARX in Melbourne.

How to do your own Bootlegs - and live!

Thinking the statute of limitations has expired, Dunk reveals his sins. Arrest him now!

Little Sharky's Frankensteinzation (keep it simple, Dunk. Ed) episode last week reminded me that one band who could almost fit his recipe for success would be the Beach Boys, except for one thing - they're not dead! But they are one of the few surviving relics of a bygone age that haven't slipped this mortal coil and drifted away into that big Marshall stack in the sky, and most of them are still alive and kicking. Although it was cruelly rumoured on their last tour here that wheelchair access to the stage is now a part of the rider!

I was a bit of a Beach Boys fan when I was younger, since their music conjured up dreams of a Californian nirvana where life was one endless round of surf, sun, hooters, and fast convertibles with a big throber under the hood! Sort of like Baywatch is now! (Or should that be Babe Watch?) Trouble was, having seen their disaster of a show at the Myer Music Bowl the previous time they were here, with Brian Wilson roaming around the stage like he had all the lights on but nobody home, I couldn't bring myself to cough up the bucks to see them this time round.

However, a couple of friends who are die hard Beach Boys fans did go and see the show, and to be fair, although they were expecting the worst, they came away from the show very impressed.

They weren't so impressed with having to put up with special guest appearances from the Iron Men band, plus the complete cast of Neighbours, but they said that the Beach Boys, when they finally came on, were very good. Looking old, but nicely buffed up and given a couple of coats of Estapol tan gloss, they ripped through a two hour set of all their hits and some lesser known album tracks.

Their vocal harmonies were excellent, my buddies said, although they sometimes sounded a little too 'enhanced'. Still, if other bands can use harmony machines with Beach Boys presets, I guess it's only fair to let the real Beach Boys do the same!

The first time I saw the Beach Boys was

their second Australian tour, way, way back in the Sixties, at Festival Hall in Melbourne. I went with the same two friends, Leigh and Bruce and, what's more, I still have a cassette tape of the show, carefully bootlegged on an early mono Phillips cassette recorder with the microphone hung on a string around my neck!

This method of recording worked really well. The Beachies weren't too loud; the PA consisted of a couple of columns each side of the stage and some horns on the stage roof. Since we were about half way down the hall the cassette's mix sounds pretty good, even after all these years.

In the 60's, if you wanted a live tape you had to do it yourself. I did a ripper of a tape at the Led Zeppelin Live at Kooyong tennis centre outdoor concert in '69. (*It was 1971 Duncan. I know this. -Ed*) You couldn't book seats for the show - once the gates were opened it was open slather, so those of us with our little cassette recorders formed a flying wedge to bag seats down the front facing one of the speaker stacks. Jeez, it was so loud there, you can still hear everyone scream with pain on the tape when John Bonham wandered out on stage and did a roll around the kit.

At the Who and Small Faces concerts at Festival Hall the same year, though, this method was less successful. Sitting in the front row for all four shows (I was a real Who fan), the volume was much louder. I got carried away and set the recording levels way too high, and ended up with a couple of 90 minute cassettes of nothing but very bad distortion.

My friend Leigh was an audio purist, who frowned on cassettes as not really being Hi Fi enough for 'serious' recording, and so he was determined to smuggle a reel to reel machine and a battery pack into the Beach Boys concert! I don't mean a tiny little Nagra, either! It was a Sony with 5" reels, and it was the size of a suitcase. "You'll never get that past the guys on the door," I said. "Sure I will, no problems," he replied. And he did, too.

He put the microphone around his neck like me, strapped the machine on his back,



wrapped some sweaters around it, then put on his jacket on over the top. He lurched through the entrance doors of Festival Hall with us, smiling and dribbling at the bouncers, looking like Quasimodo in a Harris Tweed sports jacket.

"Is he alright?" one of the attendants asked me. "Does he need a wheelchair?" I took him aside. "No, don't worry, he'll be OK once he hears the music," I said. "He's really quite normal, you know - apart from being a hunchback!" Leigh played the part for all it was worth, rolling his eyes and drooling, gurgling "Music...music!" Any minute now, I thought, he won't be able to stop himself from saying "The bells...the bells!"

The attendant led us down to our seats. We had a couple of tense moments when he patted Leigh on the back and said "Enjoy the show, mate." We were sure he must be able to feel the tape recorder, but I guess he didn't feel a hunchback every day and really had no idea what they felt like!

I should point out that we weren't intending to make fun of the spinally disadvantaged; it was just that with the publication of Terry Scuthern's soft-core porn classic 'Candy', smuggled in by mail order from the USA, we had, like the heroine, acquired a hunchback fetish of enormous proportions!

So how did the tape sound, I hear you ask? Was this Hi-tech (for the 60's) worth it? Well, the recording was certainly sparkingly clean and clear. The Beach Boys would have sounded good, too, but unfortunately all you could hear on the tape was Leigh's tuneless humming and singing drowning out the music!

The moral to this story? Well, Hi-tech or Low-Tech, sometimes it pays to keep your mouth shut!



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Chapter 4: An Outdoor Sound Reinforcement System (continued)

Introduction (continued)

When the system is turned on, the gain of the amplifier can be advanced up to some point at which the system will "ring", or go into feedback. At the onset of feedback, the gain around the electro-acoustical path is unity and *in phase*. This condition is shown at C, where the input at the microphone of a single pulse will give rise to a train of pulses at the microphone produced by the loudspeaker. It can be seen that the process is self-sustaining, and a continuing oscillation will exist. Even at levels somewhat below feedback, the response of the system will be irregular, due to the fact that the system is "trying" to go into feedback, but does not have enough loop gain to sustain it. This is shown in Figure 4-2. As a rule, a workable system should have a gain margin of 6 to 10 dB before feedback if it is to sound natural on all types of program input.

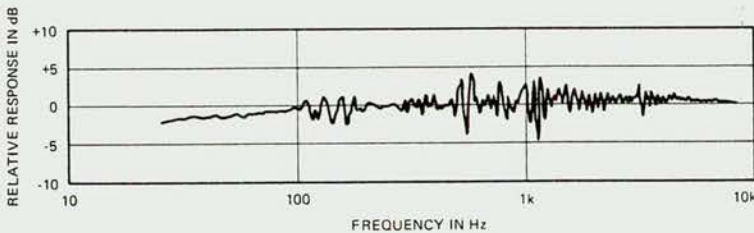


Figure 4-2. Electrical Response of a Sound System 3 dB Below Sustained Acoustical Feedback

The Concept of Acoustical Gain

Boner (4) quantified the concept of acoustical gain, and we will shortly present its simple but elegant derivation. Acoustical gain is defined as the increase in level that a given listener in the audience perceives with the system turned on, as compared to the level he hears from the talker when the system is off.

Referring to Figure 4-3, let us assume that both the loudspeaker and microphone are omnidirectional; that is, $D_1=0$ dB and $Q=1$. Then by inverse square fall-off, the level at the listener will be:

$$70 \text{ dB} - 20 \log (7/1) = 70 - 17 = 53 \text{ dB}$$

Now, we turn the system on and advance

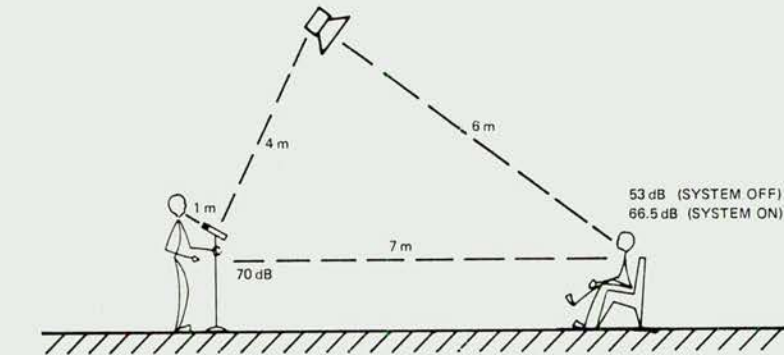


Figure 4-3. System Gain Calculations, Loudspeaker and Microphone Omnidirectional

the gain until we are just at the onset of feedback. This will occur when the loudspeaker, along the D_1 path, produces a level at the microphone equal to that of the talker, 70 dB.

If the loudspeaker produces a level of 70 dB at

Adding a 6 dB safety factor gives us the usual form of the equation:

$$\text{Maximum gain} =$$

$$20 \log D_0 - 20 \log D_s + 20 \log D_1 - 20 \log D_2 - 6$$

In this form, the gain equation tells us several things, some of them intuitively obvious:

1. That gain is independent of the level of the talker.
2. That decreasing D_s will increase gain.
3. That increasing D_1 will increase gain.

The Influence of Directional Microphones and Loudspeakers on System Maximum Gain

Let us rework the example of Figure 4-3, this time making use of a directional loudspeaker whose polar characteristics are shown in Figure 4-4A. It is obvious from looking at figure 4-4A that sound arriving at the microphone along the D_1 direction will be reduced 6 dB relative to the omnidirectional loudspeaker. This 6 dB results directly in added gain potential for the system.

The same holds for directional microphones, as shown in Figure 4-5A. In Figure 4-5B, we show a system using an omnidirectional loudspeaker and a cardioid microphone with its -6 dB axis facing towards the loudspeaker.

(Continues)

the microphone, it will produce a level at the listener of:

$$70 - 20 \log (6/4) = 70 - 3.5 = 66.5 \text{ dB}$$

With no safety margin, the maximum gain this system can produce is:

$$66.5 - 53 = 13.5 \text{ dB}$$

Rewriting our equations:

$$\text{Maximum gain} =$$

$$70 - 20 \log (D_2/D_1) - 70 - 20 \log (D_0/D_s)$$

This simplifies to:

$$\text{Maximum gain} =$$

$$20 \log D_0 - 20 \log D_s + 20 \log D_1 - 20 \log D_2$$

How YOUR loudspeakers CONTINUE to conspire!

By Glenn Leembruggen*

Here is more of the continuing saga of the loudspeaker and room conspiracy. Like all conspiracies, when you start digging, unexpected results turn up. Last month, we talked about the types of sound fields and examined the direct field in some detail. This month looks at the other three types, early reflections, late reflections and reverberation. We will focus on the time domain behaviour of these fields and see how they also have an effect on the frequency domain or tonal balance of a system

Early reflections

We do not hear early reflections as discrete sounds because they merge into the direct sound. This is what the Haas effect is all about. Depending on their arrival time, early reflections can either be beneficial or destructive. If they arrive within about 5 ms of the direct, they will cause wide phase cancellations and the amplitude response at the listening position will be degraded. A reflection can be effectively regarded as a separate loudspeaker behind the surface that is doing the reflecting. Another way of looking at it is as an image source of the original speaker.

If the reflecting surface is within a quarter of a wavelength from the speaker, and the speaker is radiating omni-directionally, the early reflection will arrive essentially in phase with the direct sound and add coherently with the original sound. The result is effectively between 5 and 6 dB of boost. This effect is commonly known in the hi-fi world as the Allison effect and occurs mainly at low frequencies. This is the reason why subs located on the floor can sound louder than if they are flown. If there more surfaces near the speaker, more boost will result.

However, in this Newtonian real world, you don't usually get a free lunch. The problem is then, at some frequencies, the reflection arrives out of phase with the original sound and cancels, and you end up with lumpy upper bass. More about this at some other time.

To get the tonal balance right, avoid putting the speakers near surfaces that will produce significant very early reflections. This means that the surfaces causing reflections less than 10 ms after will be bad news for the frequency response of the system. Early reflections arriving after 10 ms aren't so bad as they will produce comb filters that are close enough together so that the tonal balance is not seriously degraded, and the overall amount of useful energy rises. To see

pretty pictures of phase cancellations, see our previous articles in Connections.

Late reflections

These types are not useful and only cause problems and echoes. You've all heard snare drum echoes come off the rear walls of venues. Most venues have very little diffusing surfaces and if your venue is not willing to stick rockwool on all the offending surfaces, then the sound system designer *must* try real hard to ensure that the sound system does not spew sound in the direction of these surfaces. Basically any horn that is not angled downward will cause late reflections off vertical rear walls. I think it is time for the industry to start aiming boxes downward to the audience when they bump in. This will also improve the overall audience coverage of the horns.

Late reflections are very bad news for vocal and speech intelligibility. In many situations you won't actually hear the late reflection as an separate echo, but it is certainly doing a good job of confusing your brain as to whether the funny man on stage said "duck" or "tuck". If the late reflections are of a high enough level, their energy can overpower the direct field and they will dominate the tonal balance.

Reverberation

Reverberation is sound that just hangs around and eventually goes away. It gives the sound some character (otherwise we would not have invented reverb units), and generally degrades clarity. The reverberant energy in the room at each frequency is

proportional to the reverberation time of the room and the acoustic power radiated by the speaker. Remember that the power radiated by a speaker is not just the SPL at a certain point. Think of it like a torch. The total light emitted by the torch is like acoustic power, while the brightness on axis of the lens is the on axis SPL.

In some situations, the reverberant energy is a significant component of the overall sound perceived by a listener. This happens in big venues near the rear seats where the reverberant field dominates the direct. In these cases, the power frequency response of the speaker is important in determining the perceived tonal balance. If the reverberation times of the room is fairly consistent over the frequency range, then you will need your loudspeaker to produce radiated power that is constant with frequency.

The directivity factor R_{θ} or Q at each frequency is a measure of the radiated power at that frequency. We have never yet seen a speaker with a Q that was even vaguely similar at all frequencies. Our ears tolerate and to some extent, expect an increase in reverberant energy at low frequencies (less than 150 Hz). However, the more constant the energy is above this frequency, the more intimate the sound will be and the greater the clarity.

Next month, we'll probably talk about early decay times, clarity or direct to reverberant ratios and speech intelligibility.

***Glenn is part of Elecoustics, a Sydney based firm of specialist acoustic engineers. Call them on (02) 799-6742.**

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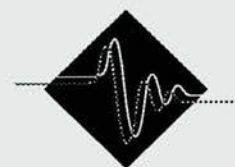
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OLYMPICS!



We won, of course, so the THANK YOU SYDNEY gig moves from being the swan song to the first of hundreds of opportunities OUT THERE in the countdown to 2000. Catriona Forcer reports on the day before the night that was, how they planned to win but probably didn't think they had a chance

This article was researched the afternoon before the announcement from Monte Carlo when speculation and rumour were rife. The official public function, sponsored by the State Bank of NSW and the Catering Institute of Australia was to be held at Circular Quay West from 2.30am the following day. It's purpose was to thank sponsors, dignitaries, sporting stars and officials from the community who had played an important role in the bid. Site/production manager for the event was Alan Stone, Warren Peryman was the stage manager and project manager for Sydney City Council was Steve McIntyre. Armed with the two show scripts - Lose Scenario and Win Scenario - Alan found time to take me around the site.

"Everybody has bent over backwards to get the Olympic Games," Alan told me. "MSB, Sydney City Council, Ports & Harbour Authority have all worked together. We've been having committee meetings three days a week for ten weeks now chaired by John Trevillian from the Australia Day Council. We worked out the logistics of the event through the Premiers department who have

"We had the two scenarios," Alan said. "If we won it was party, party, party- and if we lost it would have been fly by the seat of our pants and see how the crowd reacts. If we lost we were to cut straight back to the local area from Monaco and fire up the National Anthem to restore a sense of pride."

the ultimate control of the event.

"One problem we faced down here is that commercial businesses had to work in harmony with us while the project was being built. We started building on the Monday. Also being an open event with such a late starting time, we're not sure how many people are going to turn up. We've built in a

security and safety contingency for 100,000 people (reports after the event suggest around 50,000 attended). We suggested to the police that they staff the area as they do on New Years Eve and they agreed. Local security, employed by the MSB and outside companies, who usually never work in harmony with each other, have been working closely together."

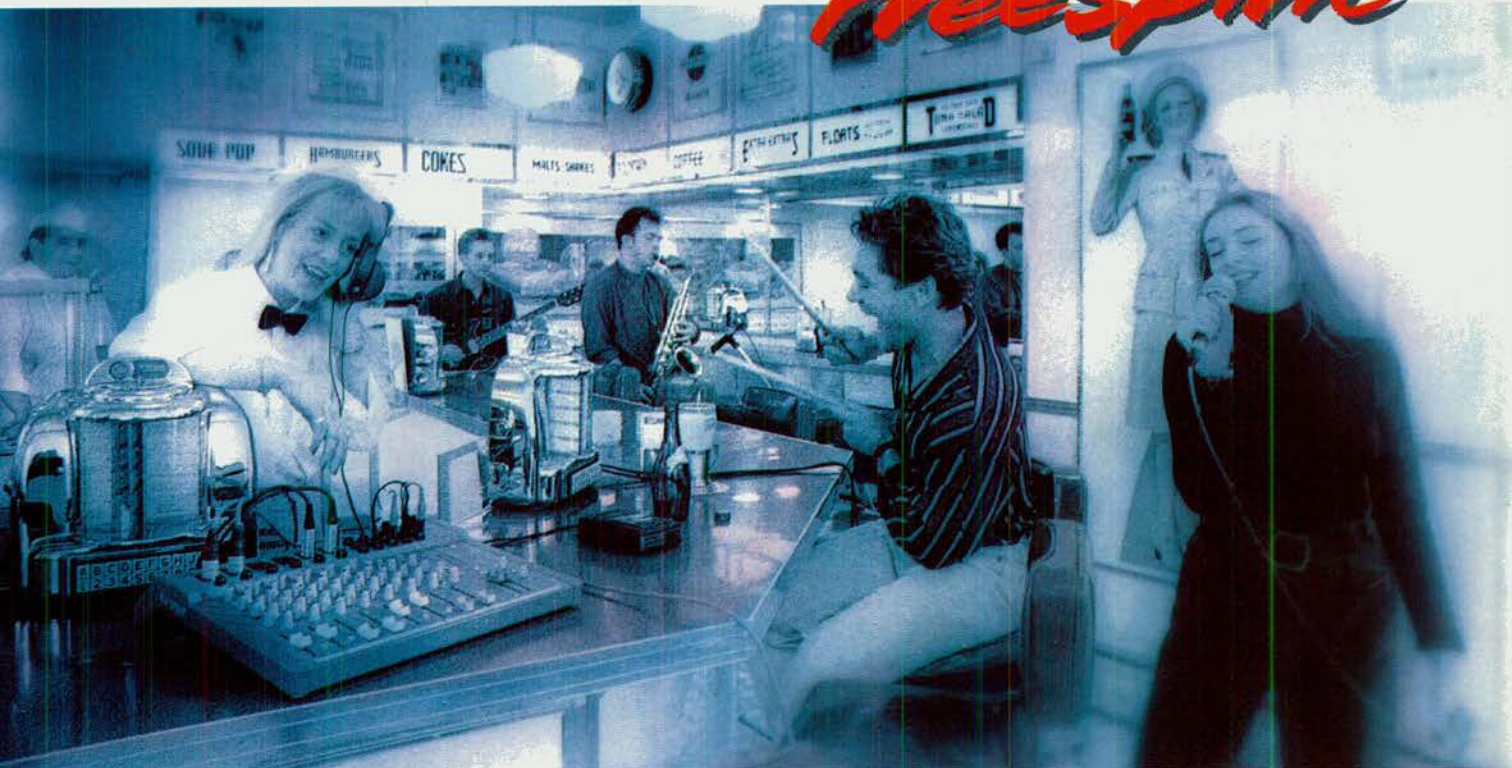
The only noticeable signage at the event was the Sydney 2000 logo as all the major sponsors agreed to not use the event for advertising. Quite magnanimous for companies such as Philips who supplied a fortune in video equipment as well as lighting up the Opera House.

"Another problem we had to address was catering at 2am in the morning," said Alan. "We wanted an international flair as Sydney is a multicultural city so we have everything from satays to kangaroo pies."

In the event of wet weather, the giant Philips screens and entertainment was to have been moved under cover beneath the Overseas Passenger Terminal and under the

continues

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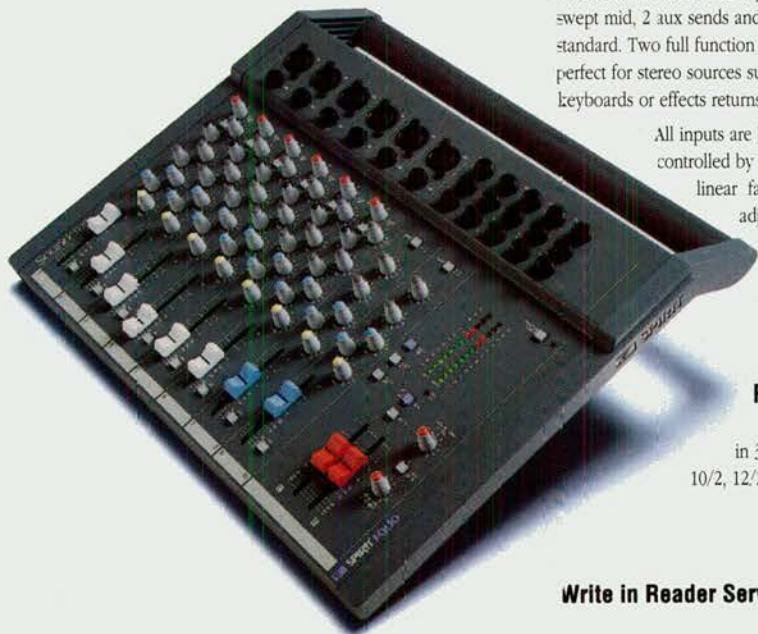
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Cahill Expressway at the Circular Quay Railway. "There are about 1900 service staff on this event and we scheduled them all a time window when they could come in and set up," said Alan. "For something that could have been quite chaotic, it's all run quite smoothly because people have been disciplined enough to keep to their times and not take up any more area than they said they would."

"We had the two scenarios," Alan said. "If we won it's party, party and if we lost it's fly by the seat of our pants and see how the crowd reacts. If we lost we were to cut straight back to the local area from Monaco and fire up the National Anthem to restore a sense of pride. We'd try to emphasise that we fought a good battle and gave it our best shot."

Fortunately the win scenario was required which meant the crew had to keep going until 8.30am and then kick off again at midday with a lunchtime concert. Although some fresh crew were to be bought in, many were going to return after about four hours sleeps. Bands entertaining at lunchtime were Chocolate Starfish and, for good all round family entertainment, Glen Shorrock and Brian Cadd.

1.25AM: GIG STARTS.

Although officially the event did not kick off until 2.30am, the security lights were turned on at 1am to warm up the area and a sponsor role was run on the big screens. At 1.25 highlights from Barcelona were shown for an hour.

Obviously both scenarios were the same up until 4.20am with highlights including the army abseiling from the MLC building carrying flares as they were lit by world war two search lights. Bands performing on the main stage included The Cockroaches and, after the announcement, John Williamson. Straight after the announcement the event went into success mode with Jennifer Davies and National Boys Choir singing the National Anthem. Once the signing of the agreement had been relayed from Monaco and a few dignitaries had had their say, the City of Sydney Concert Band and Choir struck up as \$200,000 worth of fireworks lit up the sky.

Across the harbour a laser light show with a sporting theme danced on the sails of the Opera House, which was topped by the bid logo in fluorescent lights courtesy of Philips. As the night progressed into morning various celebrities and VIPs were shuttled onto the main stage by the escalators already posi-



tioned by the Overseas Passenger Terminal. The rooms above the OPT were used as dressing rooms.

The main stage area was built to 'frame' the view of the Opera House with two 32ft high scaffolding towers and a flown PA to preserve the view. To one side was the immense Starvision screen which is said to be the worlds largest mobile video screen. Two feeds were taken from Channel 9, one from their outside broadcast truck and another directly via satellite from Monaco. Also there was a feed from their camera placed on top of the mix tower as well as some video tapes. These images were then fed to all the other screens around Circular Quay.

The main stage PA was made up of twenty-four TMS3 turbos and a twelve send monitor system with a Yamaha PM2800 40 channel monitor desk. The front of house desk was a

Yamaha PM3000 40 channel. There was a forty box 100 volt line system which was area speakers that went from the OPT to Pier 1 of the Ferry Terminal for announcements and video playback. Also supplied by The PA People was radio intercom equipment. Chris Pyne (oh no, not him again) was responsible for broadcasting Channel 9 satellite, Channel 9 television programmes, video rolls from Screenco - basically mixing all that and sending it everywhere.

This was the most difficult task for Chris, co-ordinating all the inputs, making sure satellite is going out instead of television, video instead of satellite. Other crew included John Ryder, Michael Waters, Bob Daniels and DB. The responsibility was great as whatever Chris sent out went everywhere.

"I'm also sending out 48 channels of media split so all the TV split is from me, all the radio stations, all the international press and TV comes from me," said a concerned Chris Pyne.

The stage lighting, supplied by ATS, was obviously TV orientated as in 5Ks front and rear and everything in medium as far as lamps go. Correctional gels like 203 and 205 were widely used. Again the look was clean to try and keep the natural backdrop of the Opera House and harbour prominent. All systems were self contained at each stage (including the one set up in the OPT) with the desk, dimmer racks, patches underneath the stage a couple of feet off the ground in case of water. A couple of Xenon followspots from the Entertainment Centre were also deployed.

Crowds were lit by five Kennard self generated 4x1000watt mercury arc lamps on hydraulic lifts for security at the amenity blocks. Outside The Museum of Contemporary Art there was a small Philips 4x4 video wall and the area was set aside for families.



Alan Stone. Note the weirdo inflatable tube lighting gizmos on the thing behind him!

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Around the site The PA People had placed peripheral speakers mainly on the lamp posts and ATS had supplied festoon lighting to decorate the complete area. In First Fleet Park there was one 18x13.6ft rear projection screen and two 8x6ft screens flanking it. This again was intended as a family area with lots of street theatre with fire-eaters, jugglers and the like. There was also a small stage from where a bush band - Murrumbidgee Rattlers were due to perform at 5am. Big name acts were avoided at the event as they might detract from the original purpose of it all. Along the promenade four Philips vans were placed, each with two television sets on top and fencing around to keep them secure. So if you were sitting in one of the restaurants along the quay, you could still see the telecast and shots from the main stage.

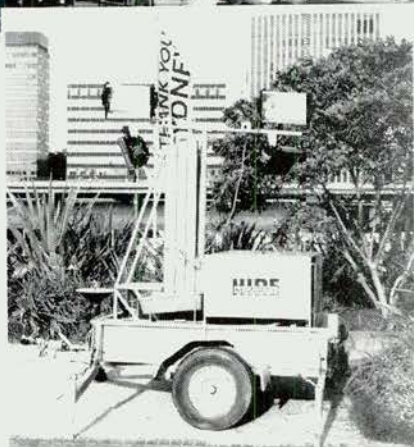
Power came from twenty-eight generators, varying from 20KVA through to 200KVA, which were supplied from Aggreko. Originally it was hoped to get the supply from the surrounding buildings.

"It just proved too difficult," explained Alan Stone. "There are five authorities down here and even though we're a public area, the MSB control to a certain point then the Museum of Contemporary Art takes over another and so on. You need a power run and you get to a certain area to find out you need more, then



The myriad of supply services that benefit from public performance work is evident here. Fete stalls, Stages, Crowd Barriers, Generators, Lighting, Transport, Electrical Contractors, Signwriters, Caterers, Security Crew, and many more people other than Sound & Lighting firms provide services.

you have to deal with another authority. In the end it worked out feasible to do but a lot cheaper to go with a generator system because of the length of cables involved." □



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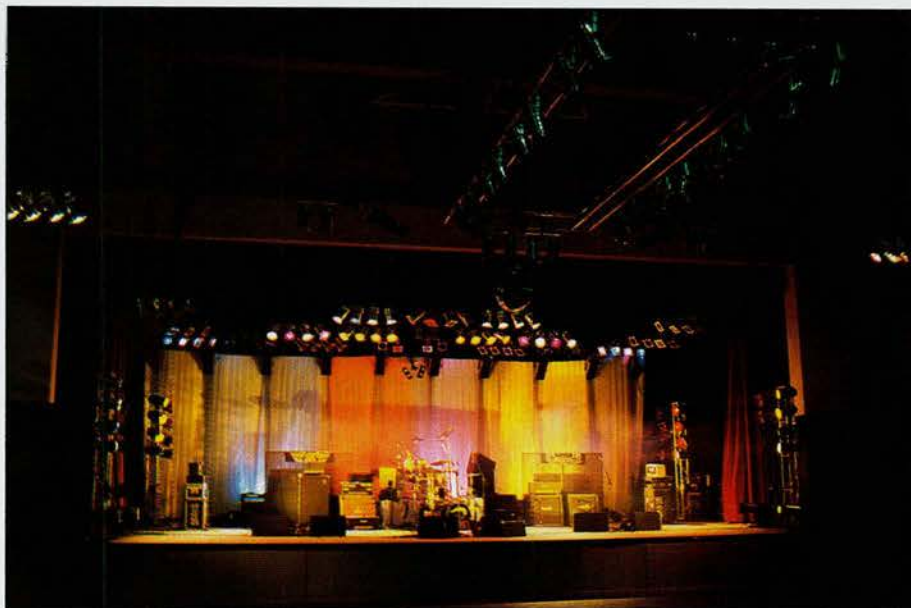
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ROAD STORY: Tour time with Baby Animals

Catriona Forcer visits Newcastle to catch a rare glimpse: a successful Winter Tour!



The old Newcastle Workers Club was destroyed in the 1989 earthquake, the rebuilt Newcastle Workers Club opened last year and since it has been gaining a respectable reputation as a venue for live bands. Recently, at the invitation of Chris Pyne of The PA People, I visited the place to see the Baby Animals and Judge Mercy in concert.

"We've got a good affiliation with Turbosound in England and speak to them often about the latest equipment. We've just changed some of our Turbos to EV DH3 compression drivers which seem to be more efficient and reliable, and the high end response has improved as well. The old dual Fane/Beyma horns they had were really quite fragile, in fact one of the reasons we've had this PA out with The Baby Animals is to get a real flogging to see what breaks. Nothing has broken despite the fact they are a really loud band, as are the supports."

"What's happened in the past in Australia is that companies have bought lots of speaker boxes with the aim of taking over the rock'n'roll business. Unfortunately due to lack of foresight they've failed. This is a billion dollar, world wide business and you have to remember that even if you're only doing Springfields. You never know who may be standing a few feet behind you. I've been in tiny pubs mixing crappy bands and someone from a larger act has been there and noticed me. That's how I got Icehouse."

The PA for the Baby Animals at Newcastle included sixteen Version 2 TMS3s, eight TSW sub bins, Australian Monitor custom tri amps which The PA People actually had a hand in designing as they were built specifically for the Turbo, a Yamaha PM3000 mixing console front of house, DBX gates and compressors, two SPX900s and a TC2290. The 15/10/horn active wedges were designed by The PA People, the same with the drum fill with subs. For front of house there were Australian Monitor amps and monitors with a Yamaha 2408 monitor desk. "There are no tricks just a basic PA as that is what they wanted because they are a

basic rock n'roll band," said Chris.

Sound engineer for the Baby Animals is Colin Elis who gained his reputation through working with INXS for fifteen years as well as The Angels, Hoodoo Gurus and The Divynals.

"I was really happy to pick up this band as I really liked them," Colin said. "The PA system has been terrific and we've had no problems. Although with INXS we were using Harrison consoles, I've used the PM3000 most of the other times and I think they are a really nice desk. You can always do better but for what they are they are really good. I run them a little different from other people as I tend to use the sub groups, I'll only assign certain channels into the sub groups and then I only have the sub groups as metering. I use the sub group meters just to meter certain instruments and then I don't assign the sub groups out to the stereo mix. Then I do the actual mix off the VCA's using them like the sub groups which is a little bit different but then I can see the kick drum, snare drum and maybe one guitar directly on the meters. I have a MIDI controller to run the effects, just a MIDI patch changer and the rest is pretty straight forward. The effects include a TC2290 which is a mono delay with a panning feature in it and I've found it quite good. The SPXs are just a budget thing really - they're cheap and do the job, not that well but you get away with it. I'd definitely love to have some AMS's floating around!"

Monitor Engineer (he insisted on that spelling!) Kevin Farrant has recently returned to Australia after working through Europe and the USA with bands such as Shakespeares Sister and Sinead O'Conner. With these acts, as well as Midnight Oil's last tour here, Phil has been deploying the Futuresonics in ear monitoring system which The Baby Animals were keen to use.

"It's made in England but sold out of America," Phil explained. "It's basically a wireless monitor system where you broadcast a stereo FM signal from the monitor board and they wear a belt pack receiver with molded ear pieces similar to a hearing aid and listen to it

in stereo. You supply them with what they want to hear without any possible feedback source. It means you no longer need monitors onstage. They are the first band here to buy this system although Midnight Oil used one by Clair Brothers which is virtually a copy of the Futuresonics one. With these guys only Suze has one and, although it's taken her a while to get used to it, she's very happy with it. You no longer have the problems of different gigs sounding different as they pretty much sound the same."

Graham 'DB' Jelly has been the lighting designer for The Baby Animals during the past two years and, as a result, has travelled extensively with the band throughout Europe and the USA. He describes last years 'look' for the band as pretty black with lots of cans and back lighting.

"It was the full on rock'n'roll look with lots of molefays, strobes and ACL's," he told me. "The band are pretty much right into how they look and talk about it a lot. Every week we talk about different aspects of fixing it up, it's always a changing thing. For this tour Suze and I talked about backdrops and cys. She wanted to get into stuff like that but not just a plain white cys with something else added to it. So we got the chiffon drapes from Staging Rentals who have got a whole bunch of really good drapes."

At the beginning of the tour DB started out having a fair amount of backlight but he found it counteracted the effect of the chiffon as well as the effect of the shadows. DB wanted the shadows to give the band a larger than life appearance."

"I'd noticed in a lot of rooms you'd see the top half of the band and then there'd be this huge wall with just a cys or black with lamps above it," said DB. "I tried to make it on this tour that even the people at the back or sides at least get a shadow of Dave 10ft tall, for example. I wanted the shadows to show movement as well as the effects with the drums on the cys. I've achieved the effects by lighting vertically from the side and every last can on

the bar is back towards the cyc going through the drum so it picks up that movement. There's also floor light and a lot of front, pretty much front covering both sides. What I wanted to do was have from one side a heavy colour and maybe a silhouette of Dave doing a solo. Suze was really into having block colours, she really hates seeing two and two and two sort of thing around the stage. She'd rather have like six and nothing coming from one end.

We've also got the crowd blinders because Suze's really into getting the crowd into it. Also with having underlit cyc stuff you can get a nice silhouette. We've got a nice low backline and it's not like Marshall heads all over the place. It's a clean stage which we've worked on getting for the past two years."

At Newcastle DB was controlling the show through a Jands Instinct 48 desk which he favours. "Jands really got it right with the softpatch thing," he told me. "Also with the double chase it helps to move slower, blending two different chases. Little things like flash buttons on master presets and other things they've tried over the years with other desks they've got right with the Instinct. It's a good, adaptable rock desk and is very programmable.

Although DB has used Jands for previous Baby Animals tour, this time he decided to go with ATS. "Basically it was because we started off doing these small places and, as the tour progressed to larger places like this one, ATS had the capacity to grow and change with us,"



he said. "They could adapt without worrying about having to change whole dimmer systems, upgrading desks and things like that. I can pretty much add or subtract, depending if we're playing the Lansdowne or Perth Entertainment Centre, with no trouble. I thought the Lansdowne gigs were going to be the worst and we redesigned the thing about eight times but it worked out really good. The Parliament House gig was pretty different although it was liking playing The Hilton. I took the show in pretty much as it is with a back truss masked off with the white chiffon and the vertical light-

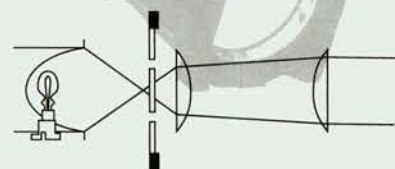
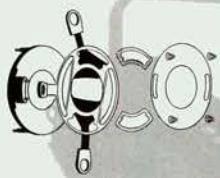
ing with a little bit of colour change stuff. I must add that all the people at Parliament House were really good and cool to the crew all day. I wouldn't be surprised if more hip shows didn't play there because it went really well. This venue is fantastic and I think a lot of venues out there should come and have a look. It has easy access, heaps of lights, plenty of power, no huge restrictions with multicores and desk positions and heaps of room." (*Great idea. Regular Friday night use the joint, which would otherwise be dark and empty! -Ed*)



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Peter Kemp's LX Column

I have just received a copy of "Focal Guide to Safety in Live Performance", the first book in the Live Performance Technology Series.

This book is edited by George Thompson C Eng, MIEE standards officer, Professional Lighting And Sound Association.

It is an excellent guide and covers many topics such as :

Safety, Risk and Hazard, Audience and Crowd Control, Fire Safety Precautions, Stage Equipment Safety Considerations, Sound Levels and Noise Control, COSHH Regulations in the Theatre and Training.

As the title of the book indicates, it's primary interest is safety, however it does touch on further details which in turn relate to safety, thus providing detailed knowledge.

An interesting paragraph from the book "Workers in the Entertainment Industry have a reputation for a 'macho' attitude, encouraged by the old cliché "the show must go on". There is no doubt that if an essential feature happen to malfunction half an hour before hundreds or even thousands of people are due to be spectacularly entertained, there is considerable pressure from all sides to get something done, with the consequences that desperate and therefore dangerous - measures can ensue. However, with the amount of new and complex equipment around nowadays, this attitude must be tempered with a suitable degree of caution and thought for the safety of oneself and others".

I am sure that most people that have been involved in Live Performance can relate to this point, though I believe our records in Australia for safety in Live Performance are very good.

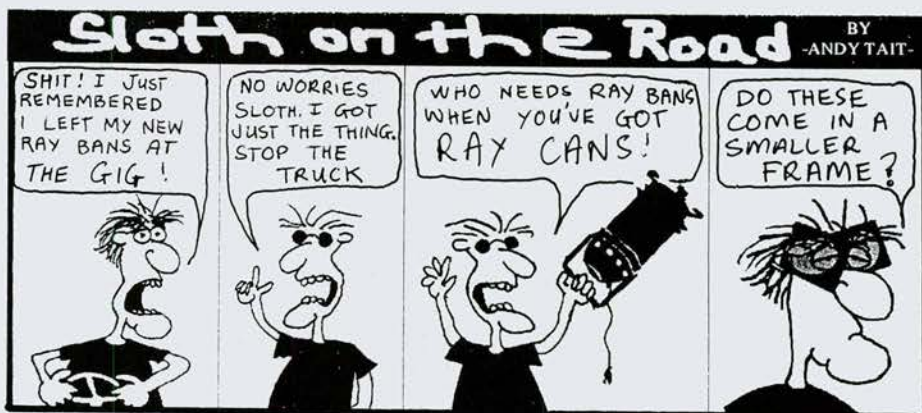
I was interested to read under "Recent Developments in Luminaire Safety" regarding Euro-Norm EN 60 598-2-17, which is the particular standard for live entertainment (stage, film and television) luminaries, ratified by CENELEC as a European Standard.

The structure of the standard is a set of general requirements and tests, contained in EN 60 598-1 (known as Part 1), followed by a schedule of particular requirements for various kinds of luminaries in each section of EN 60-598-2 (Part 2), which actually has 15 sections, though Part 2, Section 17 is 'Luminaries for Stage, Television, Film, and Photographic Studios (outdoor and indoor). This covers Electrical, Thermal, Mechanical and Use. It will be interesting to see the adherence or non adherence by manufacturers to this standard.

The sections of the book on "Maintenance of Luminaries" and 'Residual Current Devices' makes interesting reading in light of recent changes in Australian regulations.

The book makes excellent reading, and I highly recommend it to everybody involved in Live Performance.

Peter is the big wheel at Coemar DeSisti Australia. Call them on (03) 467-8666.



DRUMMER JOKES!

What is the difference between a drummer and an Eggplant?

Two IQ points in favour of the eggplant!

If a drummer and a guitarist fell from a plane, who would land first?

The Guitarist. The drummer would have to stop & ask directions!

What's black and brown and looks good on a drummer?

A pack of Rottweilers.



PEOPLE

PLACES



Jennifer Yuen of Immedia/Music Staff at AIMS '03. Phil Tripp sent her out to sell advertising!



Left: Barry Cox of BC Wholesalers; Centre: Lia Blom of Just Music; Right: Grant Cox of BC Wholesalers. Whooping It Up at the AIMS PumpHouseFunction.



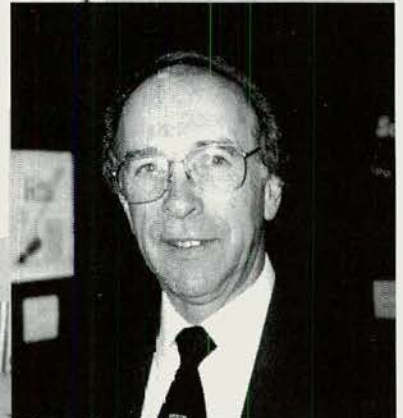
Naomi Hayward, Promotions Manager for Australis, & Peter Hayward Australis Music M.D. at AIMS exhibitors function.



Left: John Paillas and right: Gary Fitzsimmons, both of Ramsaudio; centre: Phil Crawshaw of 'one man band fame.



Left: Emmanuelle Ziino of Australian DJ Supply Co. & Right: Ken Craker of Pro Light & Sound. Buddies.



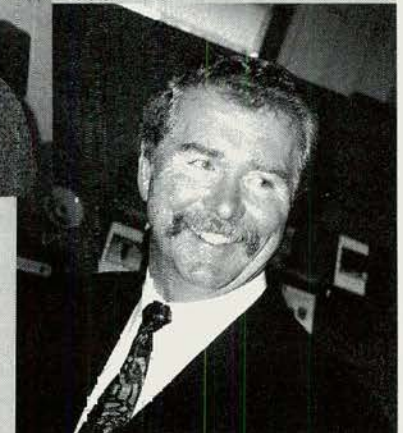
Brian Horman of Horwood Aust. & AES Treasurer. Counting the specs after the show



Left: Iain Eberington, Sales Manager & David Hay, General Manager, both of Australian Monitor.



Craig Calboun, Fostex Mixtab Expert demonstrates at AIMS for Syntec International.



Ian "Woodie" Woodhouse of Horwood Australia. Spotted at the AES.

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HOW TO PA

THINKING ABOUT BUYING A P.A.? MICHAEL ORLAND SUGGESTS YOU PAUSE FOR A MINUTE AND CONSIDER A FEW REALITIES!

So, Connections now has regular 'How to do it' articles on studio and lighting work. This has prompted me to ask, "What about a beginner's guide to live sound?"

Well, the trouble with writing such a series of articles is that in doing so, one sets oneself up as some sort of 'authority', I'd prefer to consider myself an 'advanced student' on the subject. I humbly submit to anyone more qualified than myself who may care to add, correct or intervene as I proceed.

Much of this first article will be introductory in nature, and therefore perhaps a little 'waffley' but bear with me. I intend to be as 'nuts and bolts' and 'hands on' as possible in future articles. I have always been a firm believer in learning from the mistakes of others.

In my 17 years of assembling and hiring out sound systems, I have tried to observe and absorb as much as possible in order to survive in business. If I can pass on any tricks of the trade or warnings of pitfalls which may help others to survive, and encourage new blood to come in and 'ave a go, then it will be my pleasure to do so. I feel this is the very least I can give back to the industry which, on the whole, has been pretty good to me.

So let's get down to business. You want to put together your own sound system. Why?

Possible answers:

- 1) to help me get laid (*huh? -Ed*)
- 2) I'm sick of shelling out my band's earnings on hiring systems and walking away from gigs with just beer money. I want us to have our own!
- 3) I want to set it up as a business I can live off

My response to the above:

- 1) Doesn't work. Buy a red sports car instead. (*Doesn't work. -Ed*)
- 2) OK. I can justify a little more

space to this one. Many managers or musicians have become system owners with these sentiments in mind and have managed to make it work quite nicely for themselves. Many haven't.

Consider ALL the consequences of becoming the father of a sound system. A few moments pleasure can lead to a lifetime of regrets if you end up with a brat you've lost interest in that's always nagging you for attention and money. (Your PA)

All systems need maintenance. Ignore little faults and they will turn into big (read: expensive) faults. If you want to own a live sound system you **have to be prepared to do your homework**, and it really is a lot easier if you're interested in it. Loose interest, and just send it out with a crew any which way and you'll probably end up walking away from gigs with a lot LESS than beer money.

Do you really think \$250 is a lot to pay for hiring your band's PA each night? Think again. This grade of sound system, usually comprising 2 x 15"s + horn per side FOH, probably cost it's owner 20 thousand dollars to set up, including transport. How long would it take you to recoup such an investment? If you're a muso, haven't you forgotten something? Who's going to run it for you?

If you want someone competent, start at \$100 per night. If you want someone competent with their own van try \$150. If you've got a mate who'll do it for \$20 per night as work experience, budget \$200 per night for repairs. (*Try \$500. -Ed*) By the time you deduct all running expenses (gear AND van) there isn't a whole lot left.

If your band is really Y & K (Young and Keen) and you think it might be fun to get to gigs

early, do your own loading and setting up, play the gig, pull down and load out, then fine. Proceed to next article.

If that all sounds like too big a hassle and the system you're currently hiring for \$250 a night is cutting the gig, then forget about owning your own. You're already getting a fabulous deal.

3) You want to set it up as a means of income? Well yes, it can be done. Once again, you should be interested enough to cope with doing the necessary homework. Setting it up properly will minimise sweating it out at gigs and possibly even make owning a hire system a pleasurable as well as profitable experience. (*This is where calculation of return on investment helps. -Ed*)

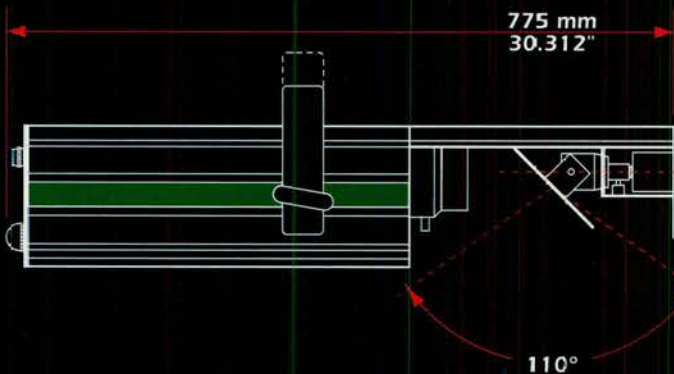
One word of caution to those starting out. Don't be afraid to start SMALL. If you're buying new gear, lots of people are going to appeal to your sense of bigness. Of course. The more gear you buy, the more money they make.

Not enough money? We live in the age of finance! No problem, Sir/Madam! Yes, problem. Many people in this business can relate heart breaking stories of friends/acquaintances who have gone down the financial gurgler because they took on too much too soon, often taking their guarantors (family and friends) with them.

I started small. Most of those who have survived and succeeded in this business started small. Enlarge as you go. Use each stage as a learning experience and you can end up making this business work for you instead of only the other way round.

**Michael Orland runs The Public Address Co in Sydney. Call them on (02) 799-7219.*

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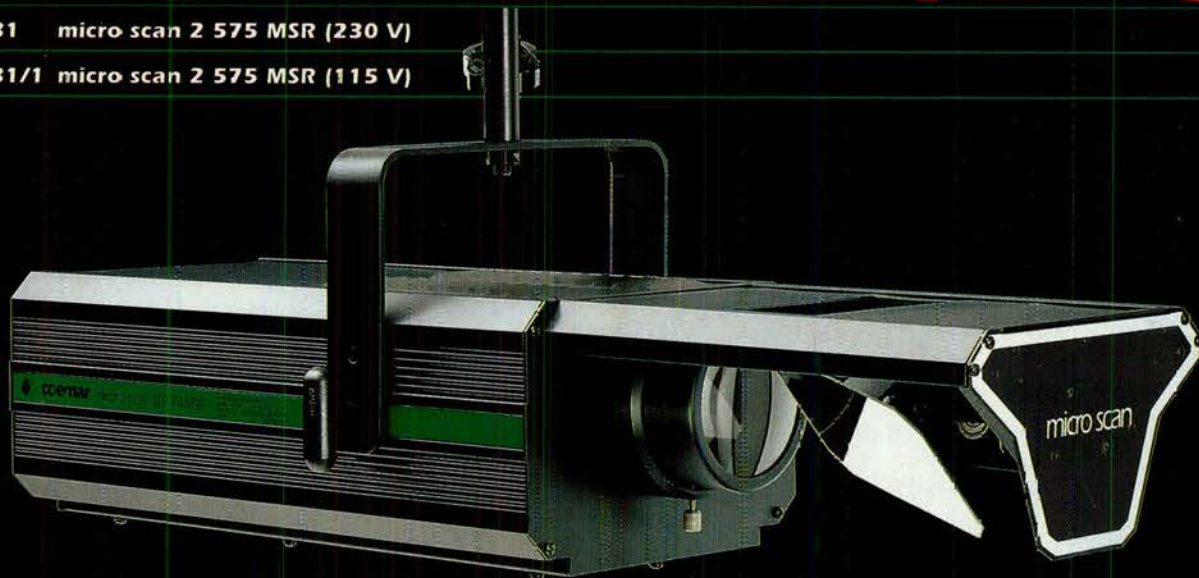


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- external ballast
- ballast weight: 8,6 Kg/ 18,9 Lbs (230V) / 15,8 Kg/ 34,7 Lbs (115V)
- GX 9,5 ceramic lamp holder
- long life Philips 575 MSR lamp: 750 h;
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