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September '93

# Connections

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**The Idiot's Guide  
to Stage Lighting**

**AIMS '93 MUSIC SHOW catalogue inside**

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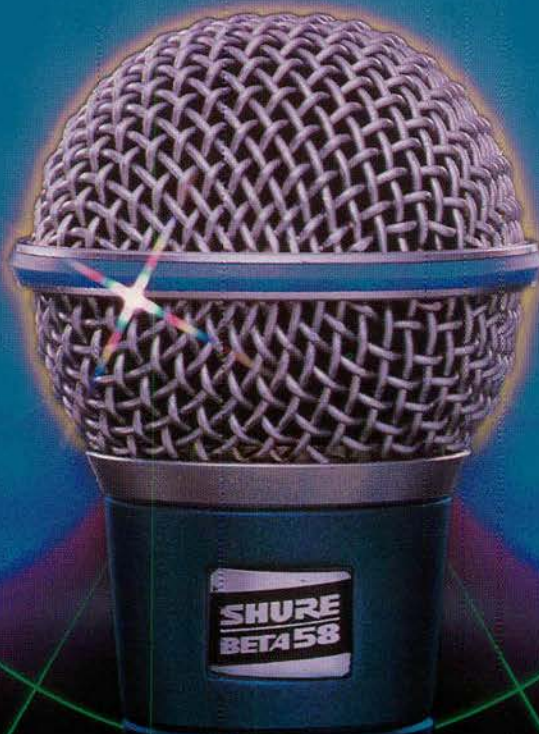
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**KEEP THIS MAGAZINE!**

**Starts page 44**

# Connections

## Connections Magazine

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## Editors Note

Why did Phil Tripp fax the media last month and cause some anxiety amongst a few proprietors? Because we've formed a strategic alliance with Immedia, who publish the Australian Music Industry Directory. Remaining separate and independent of each others company structure, we are however exchanging data and information. The Australian Music Industry Directory is, as Tripp hypes it, the 'yellow pages' of the music industry. It IS the most commonly stolen periodical, we lose copies from the high security Connections office, so he is correct in this. The reason is A.M.I.D. has evolved over 11 biannual editions to become an indispensable listing of everyone in the business of show business.

A.M.I.D. needs us for listing expansion into the mechanical and industrial side of Showbiz, and we need A.M.I.D. to reach more people in the mainstream business side of Showbiz. The other compelling fact is that A.M.I.D. appears when we DON'T publish- in January and July. This is more by chance, a good omen, maybe?

Fringe benefits for all: we will carry a monthly A.M.I.D. address and contact change panel, to allow you to alter your copy of A.M.I.D. to keep it current. Look no further than Connections!

Our advertisers also now have the opportunity to negotiate a discount buy across both Connections and the Directory. Likewise A.M.I.D. advertisers can do the same here. Interesting notion.

This cements our intention not to publish a Yearbook. Our monthly BUYERS GUIDES are a better proposition, putting products into a common & competitive format each month.

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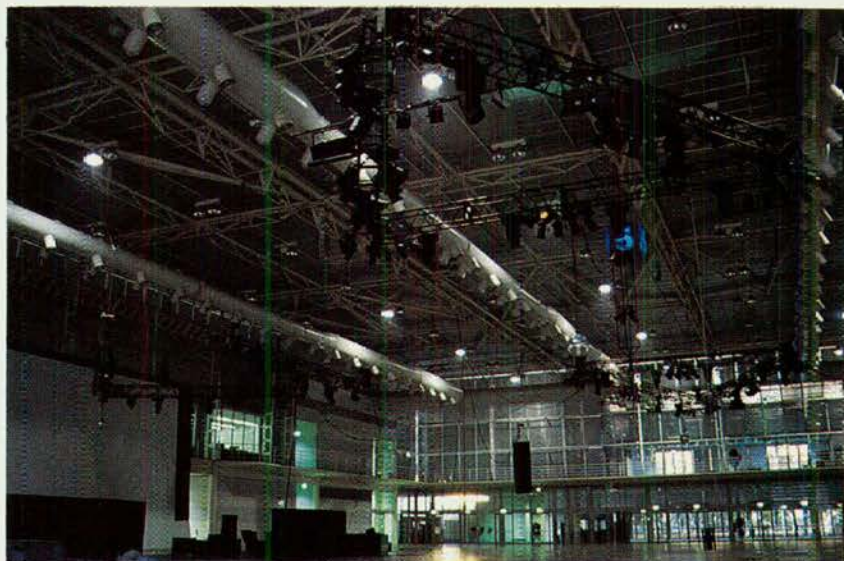
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# SHOWBIZ

## NEWS & UPDATE

### Music Industry Endures Winter Of Discontent



*Cancelled! Chaka Khan almost appeared in Sydney last month. The rig made the gig (left).*

*Business Slow: Hire Firms surveyed say if it's Rock & Roll, it's bad business. Page 22*

### CHAKA KHAN'T

Disco icon Chaka Khan visited Australia for the first time in August to perform at dance parties in Melbourne and Sydney. Unfortunately the Sydney dance party 'Care To Dance', which would have been an AIDS fund-raiser, was cancelled on the afternoon of the performance. Ticket sales were planned for 8,000 with 2,500 needed to break even. The night before the show ticket sales were a paltry 450. Frank Riviera, the promoter, is said to have lost \$70,000.

One of the reasons for poor ticket sales may have been the actual venue - Halls 4 and 5 Exhibition Centre, Darling Harbour - which for no apparent reason has a bad name for these type of parties. A smaller venue would obviously have been better.

"The promoter was constantly changing things and I actually pulled out a couple of times," Lighting designer Alan Parkinson told me. "Despite the fact Jands had already been given the contract for the lighting and they had been working with me on the project for three months already, the promoter suddenly gave the contract to Total Concept Productions. I think the promoter had a hunch on Jands and he was looking for the cheapest deal possible."

"The thing is TCP subhired most of the gear from Jands anyway!"

□ **Carriona Forcer**

### Meridian Falls To Earth

The Recording industry could not believe it when just weeks after 'selling' Rich Music Studios, founder Paul Fich re-took possession from the reported purchasers - by way of breaking into his own premises. The story started with the facility advertised for sale in April, then a group headed by 'investor' Phil Powell and trading as 'Meridian' took control in July. On Friday July 30 at 5.30am, it was all over. **Story, Page 28.**

### Product Bits

□ Washburn and Soundtech have apparently been lost to the Electric Factory, following the rash departure of former Marketing Manager Alex Bolt, who has established a new venture with those brands.

□ LSC Electronics have let the cat out of the bag by revealing a new product ahead of time. See out Lighting Controller Buyers Guide, centre pages.

□ Expect the Digital Recorder War to escalate, but not until late Summer. Alesis, Akai, Tascam and Fostex are all rushing as much stock as possible onto the market, but can't meet demand just now.

### VENUES

▶ A new Melbourne venue called The Champion was due to open early this month at presstime. The venue, at 50 Brunswick Street in Fitzroy, will start with a small acoustic and three-piece style live room operating Friday and Saturday nights with a 400-capacity, larger band and cabaret room opening later. The venue also includes a pool room, bar and restaurant.

Bookings are being handled direct on (03) 417 7666.

▶ Melbourne's Cadillac Club reopened in August after several months without trading. The club is running dance parties from Thursday nights through to Sundays and plans to add bands as soon as it's pulling regular crowds. Drive in to 536 Swanson Street in the city or give the club a call on (03) 347 4722.

▶ The Phoenician Club on Broadway in Ultimo has regained its entertainment licence after nearly a year in limbo. The club relaunched on August 14 with Skunkhour and filled to its 695 capacity with people queued up outside throughout the night.

New secretary/manager Neil Gallagher said he was running local and touring bands on Friday and Saturday nights to start with, and planned to add nights as soon as crowds built up.

Gallagher is handling the venue's bookings and can be contacted on (02) 212 5955.

## PRODUCTS

● **DENON** debut their 200-CD player, the DN-1200 (pictured below). Selling at about \$7,500 retail, the system is pitched at both the broadcast and installation market, where the benefits of not handling a 200 CD library are obvious. The maximum access time is 16 seconds, a lot less time than it takes our office DJ to find and insert a CD! Details from AWA.



● **OMNIMOUNT** -the useful range of mounting brackets for audio and video installation- have announced that **AD ASTRA** of South Australia have joined their distribution network as official distributor to the Hi Fi retail market in SA and Tasmania. Ad Astra can be reached on (03) 562-2127.

Omnimount brackets are available from OmniMount Systems Pty Ltd, call (03) 570-3777.

## COMMENT

### SALES TAX RISE WILL HIT BOTTOM LINE

The 1% rise in Wholesale Sales Tax passed down in the budget will likely affect nett profit margins, due to the difficulty in calculating and passing on the slight extra impost. Lighting wholesalers typically sell at an ex-tax price, adding tax to the sale, so they will not be as affected as Musical Retailers. Retailers will be slugged the extra 1% on goods supplied, but it is unlikely most distributors will reset retail prices to reflect the 1% rise in wholesale tax alone.

Distributors are prone to holding off pricelist increases until the last minute, in order that their price points remain competitive. The extra 1% sales tax, however, must be charged and collected by Distributors, so the Retailers margin will be squeezed. Typical Retailer margin is 50% on cost of goods, with the cost of goods usually subject to a further settlement discount or incentive plan, often resulting in an effective margin of 45% off retail.

Margin erosion as the result of a creeping sales tax rate is hardly helpful to the musical retail trade, who were fairly certain they would benefit from the proposed GST, which featured a rebate on sales tax already paid on existing stock. The retailers, it seems, are considerably worse off after the last election.

-Julius Grafton.

## VENUES

▶ Country and western is no more at Perth's Manning Hotel. The venue has turned back to rock acts and is running bands Thursday, Saturday and Sunday nights. For the moment the Sunday slot is taken by Spasm, combining members of cover bands Chunky and Rather Large Betty, and is running original bands on the Thursdays.

Street Hassle is handling the bookings and can be contacted on (09) 470 2796. The Manning is found at 27 Manning Road in, you guessed it, Manning.

▶ Down the road in Fremantle the West End Hotel now features local and touring solo acts and bands seven nights a week. Steve Cole's Passion Dance and the Big Love Band have picked up the Friday night residency while Rick Steele and the Hot Biscuit Band are playing Sunday sessions.

The venue is doing its own booking: contact manager Nick Rogers on (09) 335 6225 or pop in at 24 High Street, Fremantle.

▶ At presstime the New Tivoli in Sydney was still awaiting its final go ahead from Liquor Licensing. The new venue has booked out all of September with mainly local and interstate bands and is ready to roll. More news next month.

▶ This month heralds the return of band nights to the Sandbar in Cronulla.

The southern Sydney venue has been refurbished and now includes a restaurant and bar with a 3am license. Planned nights include jazz on Thursdays, comedy nights and bands throughout the week.

Bookings are being handled direct by licensee Peter Cobb on (02) 523 8019. The venue's address is 115A Cronulla Street, Cronulla, NSW 2230.

▶ Live music is also happening at Leonard's Tavern on the Pacific Highway in St Leonards, Sydney. The venue has just completed its second Battle of the Bands series and is booking acts direct for Thursday nights. Phone (02) 4361911.

## Events

### MUSIC SHOW SET TO SIZZLE

AIMS '93 is the largest music show yet for the Australian Music Association, a surprisingly strong alumni of musical distributors and retailers. The association has commissioned the Victorian Rock Foundation to organise the show, which takes place September 9th through 12th inclusive.

Same as last year is the venue, the Sydney Exhibition Centre at Darling Harbour, where two full halls are booked out - with well over 100 exhibitors, displaying everything musical - and with a lot of showbiz support material exhibitors too.

Stage Lighting will be one element of AIMS, with Clay Paky, Martin and others combining to mount a lighting display in the AIMS Theatre, where numerous international and local celebrities will strut their stuff - or whatever it is they do when demonstrating products!

Music Technology products will form an increasingly major part of AIMS, and our Music Technology supplement on page 49 details some attractions.

Hopefully the larger exhibitors at this AIMS have the message from the trade about excessive volume and wildcat on-stand displays - but many feel the chaos of past years has contributed to the vibe!

Connections will be on hand at stand 110 right through the show - see you there!

### Auckland, New York for OCT

While the New York AES is essential for product enthusiasts (October 7 - 10), the Pro Vision & Sound Expo in Auckland is the important event in NZ. To be held between October 5th (1 - 9pm) and October 7th (9 - 5pm) the show is at the AOETA Centre, details from Richard Thorne on (9) 373-2572.

#### Tradeshows: Australia

- \* AIMS '93 this month, Sept. 9 - 12.
- \* SMPTE '94, July 5 - 8, 1994.

#### Tradeshows: Global

- \* PLASA, London Sep. 12 - 15.
- \* International Music Expo NZ, 18 - 21 sept.
- \* 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
- \* Pro Audio & Light Asia, July 6 - 8, 1994
- \* Connections, Pacific, October 1994
- \* AES 97th, San Francisco Nov 10 - 13, 1994.

## New 650w VARI\*LITE: VL2C

Less than a year after the release of the VL5™ wash luminaire, Vari-Lite, inc. has released another new product the VL2C™ spot luminaire.



The VL2C luminaire features a new, highly efficient optics system coupled with a 600 watt source. When compared to 400 watt fixtures, this combination provides twice the brightness, twice the lumens, higher colour temperature and better optical performance.

"I am very happy with the new VL2C," notes Kieran Healy, lighting designer for *The Arsenio Hall Show*. "The extra intensity enables me to use more dramatic, saturated colours while still having them read well on camera. The VL2C's are a very positive addition to our show, and are indicative of Vari-Lite's response to our needs as lighting designers."

Further developments to the lensing system add enhanced focusing and defocusing on patterns. Technological advancements to the beam size iris motor produce incredibly fluent, subtle changes especially noticeable over slow, timed beam size changes.

Another designer currently utilising the new VL2C luminaire is Candace Brightman, lighting designer for the *Grateful Dead*. Candace notes, "I'm using the VL2C spot luminaires for the brightness and the (gobo) pattern focus and beam edge functions. The 600 watt HTI lamp should read well in stadiums."

The VL2C made its Broadway debut on *Tommy Tune Tonite* designed by Jules Fisher.

## SONY MUSIC GO WITH A.M. FOR HUNTINGWOOD

In July '93 Sony Music opened its new purpose built CD mastering facility at Huntingwood near Sydney. After weeks of technical testing and sonic evaluation, Australian Monitor won the nod with the 1K2 amplifier chosen for main monitoring duties. 7 examples were installed, "The 1K2 was by far the most impressive amplifier we tested", said Mastering Manager Daniel Segal, "It exhibited well defined accuracy and has the dynamic range needed for digital mastering".

The acoustics and speaker systems at Huntingwood were designed by Richard Priddle, the facility comprises 4 suites.



Handing over the amps to Daniel Segal is Ian Everington from A.M. (right).

## MOVES

Perth's Street Hassle has divvied up its business and will now its booking and management out of Mitey Sound and Lighting on (09) 227 9009. Production will be carried on out of Promar Audio and Lighting, phone (09) 470 2796.

*Beat Magazine* has moved from its Rose Street premises in Fitzroy to 3-5 Jessie Street, Richmond. Vic 3121. Phone (03) 428 3600; fax (03) 428 3611.

South Australia's Adrian Bohm Productions have moved to 44 Fourth Avenue, St Peters, SA 5069; phone (08) 363 0212, fax (08) 363 1231.

Concert Lighting Systems' head office has shifted from Prahran to 282 Normanby Road, Port Melbourne, Victoria 3207. Phone (03) 646 8444, fax (03) 646 8555.

Ian Johnstone has been appointed talent booker at Sydney's Lansdowne Hotel. Johnstone comes from the activities office of the University of Sydney, and replaces Jessica DuCrou who is now with the Agency for the Performing Arts.



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## KOOL & THE GANG GET DOWN!



*Kool & The Gang are the latest in a long line of Cabaret acts to tour the Hilton chain. Wearing hip glam disco gear, Cat Forcer spoke with the crew and discovered a strange recording project underway at the Sydney show ....*

It was not until Kool & The Gang were virtually in Australia that Jands discovered they were to supply a lighting designer and the job was given to Jeff Pavey who is more known for his work with Jimmy Barnes.

"We just sort of whacked it together and did something that looked a bit disco," said Jeff. "The room's really small and the budget on these things are tight. You'd think somewhere like the Hilton would spend more money although in the past we've put in moving lights. I've added ten little scanners and two white lightening strobes to the 84 par cans to give a more disco look. There are several vertical poles at the back of the stage which carry 24 rays."

"Normally I use a lot of chases but with this act as they are a real funk band it's hard to pick a chase up so I just flash away with all sorts of things. As the tickets are quite expensive the overall look of the thing is important, you have to remember it's the ballroom of the Hilton and that's a pain in the neck."

"I've always been a Celco person and here I'm using a Celco 30way but I actually really like the new Jands desk."

Systems engineer on the show was Greg Rosman who had installed 2 Jands Corcorde cabinets, a pair of JBL Control 5's for centre fill and some 'mish mash speakers for an anti room'.

"The monitor system is reasonably large for this room in fact it's too loud on stage for this room," Greg told me. Monitor console is a Yamaha, and the front of house desk is a Soundcraft 40 channel. There's quite a lot of outboard gear once again a lot

for in this room as far as noise gates, compressors, DAT machines and all sorts of bits and pieces. It's a standard sort of mic equipment. In this room, if you try to go over the top with volume you kill it instantly. The more subtle you can be in here, the better of it is. This particular act still think they are playing a stadium, they cannot get used to the fact they are in a tiny room. They try to bash out too much volume hence it sounds like a bag of shit to me. They've bought their own sound engineer and he's really gone over the top with the volume. He's basically their road manager who fancies himself as a sound engineer but needs a lot of help to get anything out of it. But they're happy with the sound of it."

For two nights of the week stint at the Hilton an English record company were recording the shows spending a great deal of money to do so. Why they would want to record Kool & The Gang at the Sydney Hilton is a bit mystifying especially as they've just come from Germany doing the same sort of venues.

Apparently they were aiming to do a complete mix, not just lay the instruments on tape to take away and produce later. Obviously if the band blew they would have wasted a lot of money as there is no way of going back to fix the mistakes that way. The mix was being done from the Jands mobile recording studio, parked in the street, which has recently been revamped. New equipment includes a Harrison recording console, JBL monitoring and lots of outboard gear that varies from band to band depending on what the engineer orders.  **Catrina Forcer**

## TRAVEL DEALS

Kingsgrove Apartments, St Kilda

Every year about 70 per cent of ARIA award nominees sleep together. Not in the same room, admittedly, but at the spacious, luxury Kingsgrove Apartments in St Kilda.

The Kingsgrove is one of the few places to cater especially to the performing arts industry. Facilities include direct dial in and out phones, colour TVs with videos, 24-hour reception, answering and fax machines on request, a spa and sauna, laundry facilities and same day dry cleaning, ironing and mending.

The high security apartments are five minutes' walk from the beach and next door to the Tolamo Restaurant. Other local restaurants deliver to the rooms and all apartments are equipped with linen, cutlery, crockery, gas and microwave cookers, a fridge, hair dryer and iron.

Your hosts at the Kingsgrove are director Ann Geroe and Angela Ulshoefer. Tariffs are on a per apartment basis rather than per person, so families and colleagues may share at no extra cost.

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# MERI TOOK

Master of wood and fabric. Interviewed by Catriona Forcer

When I visited Meri Took at his Camperdown premises, he was busy designing an exhibition stand for Roland to use at the forthcoming AIMS '93 (music) show. He was pleased with the way the design was going and you can make your own mind up at the AIMS show.

Meri Took of Staging Rentals is a well known figure in this industry starting in lighting in the late seventies. He spent a year in Europe working for Tasco on such monster tours as Neil Young, Whitesnake and The Police before travelling to the USA for a year. It was there that Meri began to work on corporate shows and exhibitions.

"I worked on some pretty big shows including the original launch of the Apple Mac computer in Hawaii," he told me. "I then returned to Australia and got involved in production of special events and staging. I liked the opportunities available in the States but this is a great country to live in. I started up a staging company and we ended up doing some really big events especially in 1988, the bicentenary year. When the recession hit that company went under but we were just cowboys really. We had ended up with a big company that couldn't handle it's own infra-structure so I resigned from that outfit to work freelance."

After a spell working as a freelance production manager, Meri had the opportunity to buy some second hand risers and a few drapes so he hitched a trailer to the back of his car and started doing small stage installations. That was less than three years ago and today Staging Rentals employ eight people.

"The big thing that separated us from everyone else that was doing it was the level of service we gave," Meri said. "The thing I learnt out of the corporate world was that people are quite happy to pay for service if they know they are going to get it on time and it's going to be fabulous. We've got very basic equipment here just bits of wood and bits of cloth! There are 200 risers, 100 flats and over 700 drapes (all made on the premises) but we continually invest. We're quite fanatical about checking our equipment when it returns so it's in a satisfactory condition to go back out again.

Having said that, it's not necessarily the equipment that makes the job but the people who do it. I feel sorry for the sound and lighting companies who are caught up in this web of constantly having to reinvest and update the technology. You can see their investment becoming obsolete sometimes before it's paid for itself."

Obviously that's not much of a problem with wooden risers! Another good thing about Meri's business is that it has a wide client base as they do rock gigs, corporate and trade shows, fashion shows, sporting events, shopping centres, film production houses and more. The reality is that if you book a venue, like an empty hall, you're going to need a stage and drapes.

"We've sort of extended that with a value added component - scenic art," explained Meri. "We're very good at scenic art like marbling etc which are very effective (Staging Rentals were responsible for the spectacular staging and scenic art at the recent Toyota Camry launch).

We can provide a riser, trees or a truss to hang a drape from and so for a relatively low level of gear we can create a relatively high level of production."

September is shaping up to be a busy month for Staging Rentals with the AIMS show, the National Roadshow for Toyota, a corporate event for Hino trucks, the Olympics announcement party at Circular Quay and the Rugby League Grand Final where they not only provide the staging for the actual event but also the Grand Final Breakfast at the Regent Hotel.

After a tour of the premises, where I learnt that blue and red velvet drapes were very much in demand since the film *Strictly Ballroom*, we went for lunch and, once the tape recorder was switched off, Meri spoke more about the business. (*Typical ploy, Good work Forcer! -Ed*) He told me that one of his idols was Eric Robinson (Jands Prod. Services Chief) who he describes as an 'straightforward man who doesn't suffer fools' and 'the man everyone loves to hate'. He also rates Peter Rooney (Vari\*Lite Australia chief) as an early influence in his career.

Meri appears to be very happy (there I resisted the urge to use the word merry) with the way his business is and he has no desire to expand into other areas such as props or to let the business grow too large. His biggest dream at the moment is for Sydney to win the Olympics and then for Staging Rentals to be involved in the Opening Ceremony. "It wouldn't be for the money but rather just to be a part of it, to do it for Sydney," he concluded.

Tongue in cheek or what?



Profile

Our expanded Sydney showroom is

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P.A.  
People

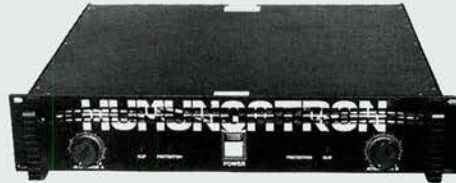
Sydney • Canberra • Melbourne • Brisbane

## Product Bits

□ The **Humungatron** (right) is otherwise known as the MSR-850C. First seen at a Jands SR-3000 amplifier shootout in Melbourne, it is the product of Rod Merigan from Melbourne Speaker Repairs. 850w into 4Ω contin. \$2700 retail. Call Rod on (03) 417-7020.

□ **SELECON** announce the Performer Quartz fan cooled 2000/2500w incandescent followspot (right) which fills the gap between the Chorus 1200w and the Performer MSR. The Quartz delivers 1000 lux at 23 metres.

□ **JANDS** has upgraded its popular, high powered System 1400 loudspeaker cabinet with new componentry for improved top end - and a sleeker, foam finished front. The System 1400XL handles 1400w RMS and employs two JBL 2226 VGC 15" bass drivers. JBL's new 2446 two inch compression driver is



mounted on a JBL constant beamwidth horn. The new version 1400XL is compatible with the existing System 1400 and the 90kg cabinets are fitted with recessed handles, rear castors and finished in black carpet. Details from Jands: (02) 516-3622.

□ The **Australian DJ Supply Co** have some more new devices coming on line this month. The GENI Fogger is complete with a low voltage remote control, auto shutdown to avoid meltdown - and a nice feature is the handle will allow a hook clamp to be attached to it. Retail \$695. GENI are the people who make the smart looking, super bright Megastrobe that A.D.J.S have had a lot of recent success with. Call Emmanuel or Gina Ziino on (02) 564-2277 for more info.

## ACCOM

Dockside Apartment Hotel, Brisbane

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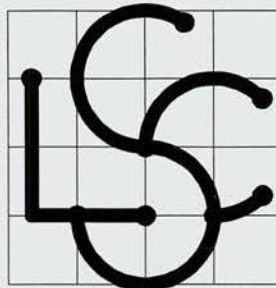
The Dockside Apartments can offer you this along with easy access to the city's centre and airports. Facilities that include fully equipped kitchens, laundries, full size fridges, private balconies, 24 hour room service, a courier service, overnight and daily dry cleaning, secretarial and business facilities, limousines and car rental, currency exchange, conference rooms and a marina, tennis court and swimming pool.

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## I DO own it!

Mike Lowe has a message for Australia, delivered by a Pom living in Italy. The message? He owns Teatro, having bought the evolving luminaire manufacturer from Coemar last year. Mike is no stranger to lanterns, having been managing director of Strand for some years. He left there after four years "because I found it impossible to work with the man who became my boss, in yet another corporate reshuffle. Within two years he had to leave".

Mike was in Sydney on a whistlestop two day visit recently, the time here was spent pressing the flesh with the market in Sydney, and hosting an open day with his local distributor. I caught up with a slightly bewildered looking Mike the evening before he took off again, and marvelled at his energy. After all, the guy has been around a while.

Teatro is a player on the Australian market via local importer Lightmoves Technology Pty Ltd in Sydney. Lightmoves cheif Johnathan Ciddor first encountered the range at the Rimini extravaganza in 1987, "I nearly fell over", he says. Jonathan was there to scout out a range of theatrical luminaires to fit his plans. Today he has what he wants, and is confident he is making inroads against local and European competition.

Mike tells a good story about the transition from living in the UK to Italy, surely one of the most friendly countries in the world. "After I left Strand, my wife and I visited Rome, she is a costume designer and



Mike Lowe (right) with local agent Jonathan Ciddor

was working on location. Bruno from Coemar was calling the UK trying to find me - so it was a great coincidence! A deal was struck whereby Mike would assume equity in the new venture that Coemar planned. "I told Bruno I'd never work for anyone again, so he just said 'OK, we'll form a new company together!'" Today Coemar have no equity, but are major suppliers to Teatro

To launch a luminaire manufacturer onto the world stage is no easy feat, "you MUST have a complete range of fixtures", Mike advises. "Initially we used the Coemar distribution chain, but today have our own distributors". Europe is a strong Teatro market

Ah, Italy, Italy. One of the most stylish nations on earth. This is reflected in Teatro's lanterns, which stand up in the marketplace for attention to detail.

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Services include non-smoking floors, undercover parking, 24-hour room service, conference and banquet facilities, multi-lingual staff, foreign currency exchange, direct dial phones and business services.

203 Victoria Street, Sydney, NSW 2011. Phone (02) 368 4000, toll free 008 333 333, fax (02) 267 4119. Rate: \$95.

## System Sound Goes Crest Power Amplifiers

"System Sound" Australia's largest theatre sound contractor has just taken delivery from Production Audio Services Pty Ltd Melbourne office, an initial order of 10 x Crest 7001 amplifiers and 8 x Crest 4801 amplifiers. The amplifiers are to be used in the forthcoming revival of the musical "Cats" and a new musical "5

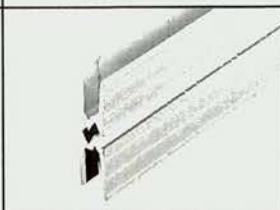
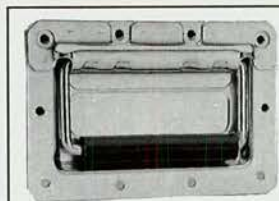
Guys Named Moe", opening on the October 9th at the Athanaeum Theatre, Melbourne.

For further details on the Crest range of Power Amplifiers and Mixing Consoles call the exclusive Crest importer distributor Production Audio Services Pty Ltd on (03) 852 0900 or (02) 954 5100.



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# ACHIEVERS

## PENN FABRICATION AUSTRALIA DO ASIA

✓ **Mark Dryden** is a veteran of four Pro Audio & Lighting Tradeshows, representing Penn Fabrication to the region. Operating from Melbourne, Mark imports roadcase and cabinet hardware from Penn (UK), and has some extrusions locally made. It is logical that he represents Penn (UK) in Asia - with customers in Singapore, Malaysia, Thailand, India, Hong Kong and hopefully soon, China. "At the show in July, our Singapore distributor took an order for 1,000 roadcases", Mark told Connections. "It's important to build a relationship, and add to it".

"I'm also looking to assemble Penn Par Cans here in Australia, with the material coming in flat. I'll have it roolled and assembled here". Mark is intent on getting as much local input as possible into his products, and designed the impressive exhibition stand at the latest Singapore tradeshow.

Penn Australia's sales grew out of the rock and roll roadcase market, but today this only accounts for 20% of sales. "Airlines and big firms like Telecom use a lot of roadcases now", said Mark, who sells to most roadcase manufacturers around Australia, he has the majority of the market. Call him on (03) 646-7222.

## ANDREW SCOTT - ON COURSE AT ROLAND

✓ The involvement of **Roland Australia** in an audio course makes perfect sense once you see the high-tech Midi-Suite the firm has built. "It's purpose designed for the course, and we don't take out-work", Andrew Scott told Connections. "The course is NOT designed to take 17 year olds off the street and get them a job in a studio".

Formed as a partnership between Roland, The Australian Film Television and Radio School, and Andrew Scott with esteemed audio identity Tom Lubin, the course operates from Roland's Brookvale (Sydney) premises. It is selective, limited to 18 people, and runs for 21 weeks part time. We have seen testimonials- it all looks AOK! Call (02) 982-8266.

## SHANE MORRIS BACK TO THE USA

✓ 'Our' Shane Morris is now in Columbia, Maryland, at work for A.T.I. - who make the ultra high-end 'Paragon' concert touring sound console. Shane is developing some new modules and options for Paragon, and will without doubt be soon involved in new, exciting and mysterious technology. Shane was last employed here by Fairlight. Good luck Shane!



## MEDIA REVUE

By Jennifer Temm

*Juke* relaunches this month in a glossy, full-colour A4 monthly format after 18 years as Australia's only national rock weekly. But don't look for it at your local newsagent - the magazine is being distributed exclusively through Brash's retail outlets.

Advertising manager Greg Phillips says the new format is a result of extensive research and a reaction to changes in the market place - and adds, to put it in perspective, that *Juke* started up at the same time as *Countdown*.



Wow - a new ARX logo! With three little wavy things underneath!

And that's not all. There's a whole new look to ARX Systems. Every ARX electronic product has tasteful new front panel art, brushed aluminium front panels, and colour coded controls.

But some things we haven't changed: you can still read everything under low level desk lamp lighting, and we're still the only manufacturer to give you a little marker panel on everything for you to write on. It's

a little thing, but an indication of the thought that goes into every ARX product.

We've also upgraded all the circuitry to give you the cleanest, fastest, most accurate signal processing possible.

Hey, we know what you're thinking - is this just some cheap ploy to jack up the prices for the poor old hard working engineer?

Wrong!!! Sure, the plunging Aussie dollar has affected us, but not anywhere near as much as our im-

ported competitors, so the prices on most items haven't changed in over a year. ARX products still represent the best pro-audio value.

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.

And it started here, thanks to people just like you.

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



Victoria and Tasmania: Tony Hosking 03-888 6555; New South Wales: 02-879 6788 Dave Croxton; Queensland: 074-424 233 Rod Watts; South Australia: 08-356 6601 Peter Asztalos; Western Australia: 09-354 3185 Ian Ross; New Zealand: +64 (0)9 789 863 John Carter

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## PEOPLE

● **Chris Clough** is a name we recall here at the Conn Office, Chris has forever and a day been a PA Owner/Operator in Sydney and is now at Rock & Roll Music, taking a load of Neil Smith's shoulders. Ask Chris to explain what a Pageant Lantern is, and how many you can fit into an EH Holden! Call (02) 550-3828.

● **Roger Rapsley** is the new Sales Manager at The PA People's Sydney sales outlet. Roger takes over the void left by the departure of Rod Rielly and Adrian Dewar earlier this year. Chief Chris Dodds says the outlet will now stay open till 4pm Saturdays, and it is looking very smart. Drop by and meet Roger, 432 Liverpool Rd, Enfield. Call (02) 642 5344



● **Noel Martin** (above) has left Premier Lighting in Brisbane, and established PERFORMANCE LIGHTING & SOUND. Noel is something of a local identity in the city of sun, where he once headed up local sales operations for the Strand conglomerate. Performance will provide sales and 24 hour a day service. They are into stage drapery, lighting suspension and consumables too. Call Noel (07) 801-3110.



● **Brian Chilcott** (above) is now the Project Manager responsible for Professional Products at BOSE. Brian has some impressive engineering achievements in his deep dark past, one of which was very deep and very dark indeed - but related to audio! Call (02) 684-1022 & ask him about it!

● **Olaf De Ceuster** is no longer with Australian Concert Productions, after several years as Hire Coordinator. Olaf is now freelance, call (07) 281-1141.

YOUR PEOPLE NEWS & PICTURES HERE! Send to PO Box 439 Epping NSW, or FAX (02) 876-5715. Mark the item 'PEOPLE NEWS'.

## MOVES, OPENINGS

● **ARENA TECHNICAL SERVICES** have moved to premises not far from the original. The new location is: Unit 7, 67 Lords Road, Leichhardt NSW 2040. The phone numbers have CHANGED: (02) 564-5144. New Fax #: (02) 564-5081.

● **CORPORATE PYROTECHNICS** have a new store which is licenced to sell display fireworks to you. Call Jack Moeller on (03) 826-5858 to arrange a suitable time. The store is at 170 Lennox street Richmond, but by appointment only.

● **CONCERT LIGHTING SYSTEMS** are now trading at their new premises, 282 Normanby Road, Port Melbourne. Call (03) 646-8444, Fax (03) 646-8555.

● **AUDIO VISUAL DESIGNS (AVD)** have moved and established a large showroom at 51 Ramsay Street, Haberfield NSW. Call (02) 716-0211, Fax (02) 716-0306. Open Saturday till 3pm, Mon - Fri till 5.30.

● **FREEDMAN** have opened a new retail outlet from their new premises at 283 Victoria Road Rydalmere. Call (02) 638-6666, Fax (02) 638-7505. They say they have the products and the knowhow - call in!

● **MORE** People & Moves can be found in the Australasian Music Industry Directory (AMID) CHANGES LIST on Page 38 of this issue.

Christie Eizer will continue to edit the magazine and no staff changes are planned. Most of the sections will also remain but the magazine will go for broader appeal with new columns in specific genres such as jazz and blues, metal, dance and indie music as well as lifestyle stories on fashion, sport and the like.

The film section will be expanded and video games and electronics will run to at least a page each month. Pro Juke has been trashed but the Bandwagon section will continue at a minimum of two pages.

The cover price has been reduced from \$2.85 to \$2 and minimum size has been set at 48 pages. The print run for the September issue, due out on the first of the month, is 30 000 copies.

Sony Music and Rip It Up have hit a new low in a joint promotion for Rage Against The Machine.

The Adelaide-based magazine ran a picture of a head on fire and

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## PRODUCTS

### CERWIN VEGA DEBUT NEW SPEAKERS

**Ashton Admore** have announced the new Cerwin Vega PROSTAX range, including the PS-15 (pictured). It features a 380mm (15") woofer in a trapezoidal cabinet with built in flying hardware - and a pole or stand mounting anchor. Cerwin's newest tweeter, the HF-10 and a new midrange compression driver - the M130 make up the full range handling capabilities. Call Ashton Admore on (09) 478-3800.

### GOLDEN SCAN 3 WINS AWARD

**Clay Paky** are rightfully proud that their new Golden Scan 3 moving light has just won the top BEDA award in the United Kingdom. The award was presented in front of the elite of the UK Disco Industry. *Clay Paky* are represented here by LAVA, call (02) 816-4444.

### DDA DEBUT MICROFILE AUTOMATION

**DDA** has added low-cost VCA fader automation to two of its project studio console ranges. Both Forum Composer and the QMR consoles can be fitted with DDA MicroFILE, a colour graphics automation package that offers up to 64 channels of fader automation.

● Meanwhile, the DDA Forumrange has a new addition, the Forum MONITOR. This console has 12 full monitor sends, plus a stereo mix. The console has a neat remix feature on the outputs, so making adjustments to multiple mixes is a lot easier. A DIM and a PHASE REVERSE switch on each input is a good idea, likewise the cueing facilities are pretty good too. Call Syncrotech Systems (02) 417-5088.

### OMNIMOUNT WILL MOUNT FOR YOU

**OmniMount Systems** have a mounting bracket for every occasion, the local distributors The Sontec Group have been beavering away establishing a sales network for the handy gizmos. Call one of them (below) and check out the neat way you can mount your video or audio device on a wall or ceiling, then hide the cables inside the steel tube! Resource Corp: (03) 888-6555, A.R. Audio Engineering: (02) 299-3666, Nylon Products (08) 340-2828, Audio Source (09) 354-3185 and MGM Agencies (003) 27-3566.

## CONTRACTING NEWS

Held over until next issue. No material sent to us! FAX IT: (02) 876-5715



### GENELEC FOR STUDIO CONNECTIONS

**Studio Connections**, the new venture for David Sloss in Melbourne, has announced it now handles Genelec active studio monitors from Finland. Four models are now on hand, from the 1031A nearfield monitor, through to the 1038A 3 way system. Further models are available, and they feature built amplifiers for each driver, along with crossovers and internal protection. Call Studio Connections: (03) 723-4300.

### BOB SPENCER AXES JANDS

"It's big, clear and tough. And it's loud!" So says The Angels' former guitarist Bob Spencer, talking about a new Jands product, the 'AXE' speaker cabinet for guitar. Richard Priddle designed the distinctive looking cabinet which is loaded with 2 JBL 12" M121-8 speakers for 500 watts handling. At 855mm high it is portable, and will sit in the back seat of your car if you let it. It looks horn! Jands: (02) 516-3622.

### DEX UPGRADE NEUMANN

Your U47/48 can be upgraded to reduce noise, according to the experts at **DEX AUDIO**. They will ensure the classic character of your early valve microphone is retained. Call them: (03) 372-2266.

### NEXT DEADLINE IS SEPTEMBER 15TH.

Send your news to: PC Box 439, Epping NSW, 2121, or FAX: (02) 876-5715.

## MEDIA

asked readers to stick people's faces on it and provide an explanation of why they should be set on fire. First prize includes a petrol voucher, saffron robes, matches and a free head shave.

Wonder if they ran this one past the band?

*Juice v Rolling Stone*, round 7. *Juice*: 116 pages, 24.5 pages advertising (down 5 pages), cover pic of U2's Bono (clothed); *RS*: 100 pages, 16.25 pages advertising (down three pages), cover pic of dinosaurs (naked) from *Jurassic Park*.

Congratulations to Melbourne's Beat Magazine and X-Press in Perth for surviving another year in the mean, lean street press publishing game.

Beat celebrated its seventh birthday with a mammoth 88 page issue last month, supported by a healthy 60 per cent advertising. *X-Press* turned eight last month and published an 84 pager with 66 per cent ads.

*X-Press'* editorial staff has also undergone further upheavals since the reappointment of managing editor Scott Howlett late in June. Associate editor Julia Langham and Full Metal Racket columnist Stuart Penney have resigned and club writer Antonino Tati has been replaced. Cafe/Metro section editor Di Bauwens is filling Langham's shoes and new contributors include Triple J's Richard Kingsmill and Sydney metal writer Murray Engleheart. Staff writer Bob Gordon has been promoted sideways to music writer but is still handling movie reviews and special features.

No marks for *X-Press'* response to an East Perth club barring a 26 year old university student for be-

## Ex Hire Clearance sale now on . . .

Be quick to secure a bargain at never to be repeated prices - some of these beauties should be in a museum, not our hire department. Sydney • Canberra • Melbourne • Brisbane



# AUX 2

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

Maybe an urban myth .. an Audio & Lighting Dealer in a v. large country town recently met with his very major supplier, who told him another dealer was to be opened in the town. "Well I've got something for you", Dealer said as he reached into his briefcase - and pulled a large knife. Major Supplier lost some more hair before realising it was a kind of, sort of, joke - a close shave?

**A Sydney Audio Hire Firm recently in the news is poised to disappear on a Friday afternoon, and re-emerge on on Monday morning - trading under a new name. Will it work?**

Keep October Free for AV '93 said the letter earlier this year. Well it is not to be, organisers Expertise Events wrote to underwhelmed potential exhibitors recently and advised the Audio Visual '93 exhibition was cancelled. "Interest and overall support from the majority of companies has been tremendous, but a couple of major companies would need to be represented by distributors, therefore reducing from normal large stand sizes. This is all because of conflicting priorities, arranged, unknown to us, prior to the launch of this exhibition."

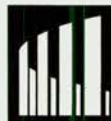
**Australian Audio Brokers is no more, Steve Bray has closed down the Sydney based audio supply house, and gone about the orderly settlement of accounts. Steve is now working over at AR Audio Engineering, the Tony Russo/Max Twartz venture.**

Live Sound & Touring Technology Magazine has been re-born in Kansas, with old (new) editor Mark McLean at the helm.

**Big speaker boxes are moving about the nation in preparation for the summer season. After Audex bought 8 Turbosound TMS-3's earlier this year, Brisbane's ACP are thought to be poised to take the last 16 in possession of A1 Audio. Then there are those Jands Production Services rumours about a new S4 system ... but we hear this every year. JPS has about 100 x S4's, 68 x TMS 3's, 40 - 50 Concords and more modular than you can poke a stick at, but has sub-hired a Clair Bros S4 MKII system each year to cover our Summer peak season. Summer here is quiet time over in the USA.**

Speaking of Over There, Spy Matthews of Delicate Productions (an ex-pat Aussie) faxed us his subscription form after spotting Connections being handed around at the wedding of Mark Gander, the JBL product guru. Seems Gander was lending his copies to people like Bruce Jackson, another ex-pat.

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



The  
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	FAX	(C9) 249-4912
BRISBANE	PH	(C7) 856-4200
	FAX	(C7) 856-4681

## Phil Tripp Writes....



● **Baby Animals had their "Back to Basics" shows** at the Lansdowne a few weeks back, at first noticeable because of the prime mover and trailer blocking the side street. An army of roadies were pulling out a stadium's worth of equipment which, once packed into the club and its temporarily extended stage, knocked about 1/4th the capacity out of the venue.

On the nights, it was stiflingly hot due to the blaze of lighting, overcrowded due to an extensive 'industry' list and the need to pack the punters in to offset the losses made by scaling the room down, and it was so loud that I was lulled to sleep a few blocks away with the crunch of guitars and vocals. If this is back to basics, we're horrified at the thought of an 'Unplugged' concert...only half a semi-trailer of gear and half of the equipment to do an ENT Centre?

● **It was interesting to read a Sydney Morning Herald piece** on why people aren't coming to clubs anymore. If it's not safe to park your car near the pub, sidewalks full of glass and glistening with streams of fresh piss, wait til you meet the door bimbo and the security Neanderthal behind her to keep you from feeling welcome. They may say you're underdressed, but a bribe often works. Then when you fight your way into the smoke-choked, overheated room, get ignored at the bar if you can break through the pack animals holding court and actually slither your way through the swamp of a bathroom...why would you ever want to go out and see live music? But that's before the band even starts!

Too many of the shows I've been forced to go to, because mates are the managers or record company flacks, feature artists who can barely perform if even move on stage, mixed by engineers who must think pain is the first audio threshold to cross and lighting design by the visually handicapped. It's great to have a monolithic PA but I wish they'd spend more money on the personnel rather than the stacks so that it's not excruciating to hear a band and visually boring to see them.

● **O.K., that's enough criticism of the live scene.** Let's turn the jaundiced eye to the mainstream music industry.

● **Last year it seemed that everyone was producing a dance record.** This year, they seem to be writing books. Former Sonics editor Lesley Sly got a five figure advance from both the Australian Contemporary Music Institute (the rock 'n' roll college in the hippie hinterlands of Lismore) and music publisher Warner Chappell for her book which is a snapshot and overview of the music business circa 1992. Interviews with a broad range of folk should prove amusing as they tell their tales of great accomplishments and erstwhile opinions. It's called The Power and The Passion.

● **Next book off the rack is Party Boy Paul Christie's**

Rock Self Management Manual which

was originally spiral bound for teenagers and has now been simplified and perfect bound for adults in the industry. Warner Chappell is also the publisher of this screed at about \$40 which, like Christie's seminars, had some financial help from the NSW Ministry for the Arts.

● **And finally music business lawyer Shane Simpson** is putting the finishing touches to his legal tome titled "Music Business" which supersedes his out of print Music: The Business and the Law. No publishing date set yet.

● **A little while I did a ringaround of all the audio engineering schools** in Australia, posing as a potential student. I asked one simple question, "Do I have to take an audiometer test to get into your school?" Not one of the front line people who answered knew what an audiometer was and when it was explained that it was basically a hearing test, none of the schools required it nor even recommended it. It seems that the only hearing test you need to pass is this one. "That'll be \$5000 mate, payable in advance to start with our school. Did you hear me?"

● **Over the past six months, a lot of fax paper has been sacrificed** to the pleadings of a supposed new music industry directory for free listings and paid advertising. Not content to use the postal system, this deluge of hype has resulted in one clear finality. The planned Australasian Music Business Index being produced by On The Street magazine didn't publish in April as a quarterly, nor in July as a bi-annual nor has it been seen as of August 24. But even more amazing is the claim in a July edition of OTS that they've had more than 8000 listing requests and that their AMBifax received more than 10,000 calls in a three week period. Only problem is that the math doesn't work out well: there's 30,000 minutes in three weeks and if someone calls in for an average three pages of output would take about 4-5 minutes. It's unlikely that the system was accessed 24 hours a day, especially since the day this bit of puff was announced, the fax system wasn't working! Nor has it been since...

But the biggest laugh of all is their alleged distribution which has been claimed to be 10,000 copies per issue, available through newsagents (later retracted), distributed free at New Music Seminar (never made it) and free through selected industry outlets such as Ausmusic (later retracted). It also claims to have "accurate information" - which in the ad repeated weekly in their own publication is just one item above the claim "electronic access for industry personal" - not "personnel".

*\*Phil Tripp publishes the Australian Music Industry Directory. See page 38 for the latest directory data.*

## MEDIA

ing "too ugly" recently though. Brenda Higham was refused entry into the Racquet Club by a bouncer (who is probably in desperate need of a job by about now) and has appealed to the Anti-Discrimination Board.

And X-Press' response? The following week's editorial criticised the unplugged recording plague. Very controversial.

Birthday issues aside, last month's winner in the street press stakes is Drum Media, who came up with a whopping 72 pager supported by 67 per cent advertising. Runners up are Melbourne's Inpress (64 pages with 67 per cent advertising). On The Street (56 pages with 65 per cent) and X-Press (56 pages with 64 per cent).

Losers of the month are the old look Juke (hang on to those copies!) at about 32 pages with 34 per cent advertising, and Brisbane's Time Off at 28 pages (62 per cent advertising).

Street mag cover of the month almost went to On The Street for its Rolf Harris original of himself, lugging a blimp up a stairway to heaven - until we noticed the "zeppelin" spelling. Then again, Harris admitted recently he had never even heard Led Zeppelin's original Stairway track until asked to perform a cover for The Money Or The Gun compilation.

NEWS and INPUT wanted. Call editorial (02) 876-2612, or Fax (02) 876-5715.

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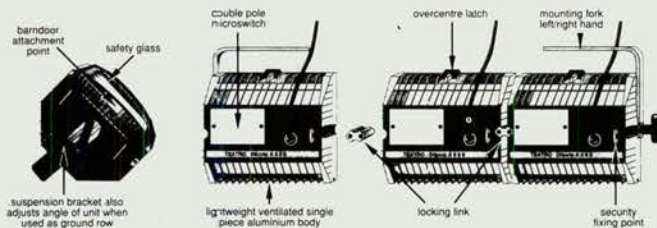


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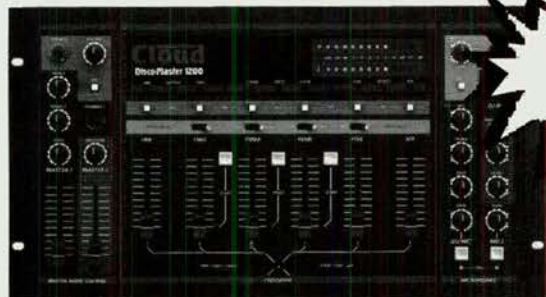
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Bananas, Sydney's newest dance club, launched with a flourish last month after weeks of heavy radio promotion. The venue hit capacity mid-way through opening night and about 2000 disappointed clubbers were turned away.

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Bananas is housed in the Eastern Suburbs Leagues Club in Bondi Junction and is part of the club's push to appeal to a younger crowd. House DJs include ex-DMC mixing champion and world finalist John Alsop and the venue plans to feature celebrity guest DJs and host album launches, laser shows, live bands and international dance acts.

The night club opens from 9pm on Saturday nights with bands mid-week and Friday nights. It is promoted and managed by Rock Circuit Promotions, best known for running The Zoo dance parties at the Horners as well as Club Troppo at the Central Coast Leagues Club in Gosford.

**PROMOTERS/MANAGEMENT:** Rock Circuit Promotions' Harry Della and Marc Christowski.

**LIGHTING DESIGNERS:** Total Concept Productions and Rock Circuit Promotions.

**LIGHTING OPERATORS:** Ryan Scriven, Joe Accurso.

**SOUND DESIGN:** Total Concept Productions.

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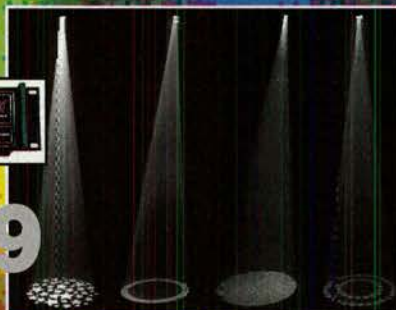


Contact Caroline Grafton regarding a profile of your club or venue. Call (02) 876-2612.

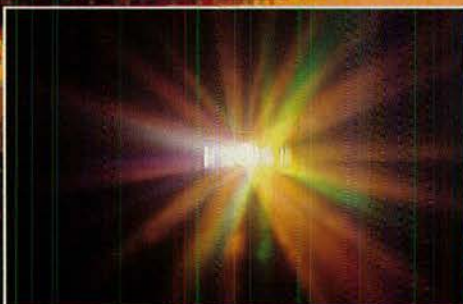


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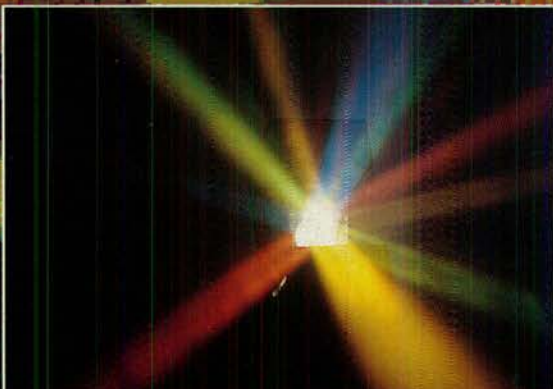
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## A QUIET WINTER FOR HIRE BIZ

Special report by Jennifer Temm

The further south you are and the less diverse, the worse off your business is likely to be. Turnover has dropped by 10 to 50 per cent according to a Connections survey of hire and production companies around the country last month - but only for companies servicing the rock and roll industry.

In Sydney, MW Sound's Marty Welsh put it bluntly. "It's been very bad. I'd say I'm getting 75 per cent less calls than at this time last year," he said. "I think the rock and roll industry has just died. The venues don't want to take a chance on bands and bands that are working just aren't getting paid much money. I know quite a few people around my level who have just decided to sell up all their equipment and out."

Vic Leeto at Music Box estimated that business was down by about 20 per cent. "I think it's a bit to do with the time of the year but there certainly isn't as much work as there used to be. The call for large production has definitely diminished," he said. "We've been hiring out more of the smaller PA systems rather than the larger rigs. The average system a few years ago was about \$450; now it's \$300 to \$350. Touring bands is just not where the money is."

An increase in the number of owner/operators during the last 18 months has also made business more cut-throat, according to Parramatta Pro Sound's Ben Finn. "There's a lot more of them around and they don't have the overheads that we do," he said. "But a lot of them are stuffing it up too. They'll go out for nothing. "If you're smart enough it's okay. Business is probably down by about 15 to 20 per cent on last year but we're still pulling in the figures. Originally hire was the main part of our business and now it only makes up a small part with retail filling the gap. I think the retail will pick up too - it traditionally does at this time of the year."

Less optimistic is Osmond Electronics' John Murdoch in Adelaide, who estimates the rock and roll hire business has dropped by about 40 per cent and overall theatre and party hire by 25 per cent. "If we relied on rock and roll we'd be out of business. The amount of work has dropped dramatically. Normally by the start of August it's picking up but it's just not happening this year," Murdoch said. "About 60 or 70 per cent of hotels here are in serious trouble - about 30 are in receivership at the moment and major rooms like the Old Lion Hotel have become cabaret rooms. "We used to do a lot of weekend parties too but that hire is non-existent. We haven't lost it, it just doesn't exist anymore. The local scene is very, very poor and I think the number of major tours coming through have halved. People are choosing their concerts very carefully these days."

"The other thing is that as people get hard up for work, more owner/operators are coming over here from Melbourne and Sydney and they're charging half the prices they would have charged a year ago." Murdoch said that four years ago production hire made up half of Osmonds' turnover; now it makes up about 20 per cent. "For Adelaide, I can't see things improving very much in the near future but I do believe it'll come back," he said. "It'll probably be a bit more professional and there'll be dedicated rooms in venues and so on, which will be great, but only when the people on the street can afford to go out more than once a fortnight."

Reports from WA were mixed but Purvisonic related a similar tale. Manager Vinnie Bresland said large format music rooms were finished in Perth. It was still possible to make the same money but you had to be prepared to work an extra day for it. Purvisonic started to broaden its business several years ago but it was "still a struggle", he said. "Most

(continued)

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### CAT FORCER

After last month's article on Girl-friend, lighting designer and production manager Colin Baldwin informs me that they are due to tour China this November.

The European touring scene is fairly unstable at the moment and a certain amount of planned concerts are being scrapped because of the instability of currencies and general lack of money.

Living Colour, who put on a great show and are due here this month, only pulled 500 punters to a recent concert in Germany. Despite much hype, the Jesus Jones tour has also not been doing as well as expected.

After 20 years Velvet Underground has reformed and there is a strong rumour that they will soon be heading this way.

Lighting designer Ethan Weber has worked with Lou Reed since 1984 and for the current tour he has collaborated with Lou's wife Sylvia who bears the title "visual co-ordinator". The rig in Europe contains Lekos Pars and 10 Goldenscan 3s controlled by a combination of Avolites QM Diamond and Rolacue Sapphire.

More touring Goldenscans (eight Goldenscan 2s) in Europe, this time with another rave from the grave: 10CC. Lighting designer is Australian Rocky Mackenzie who departed our shores three years ago with a Jason Donovan show.

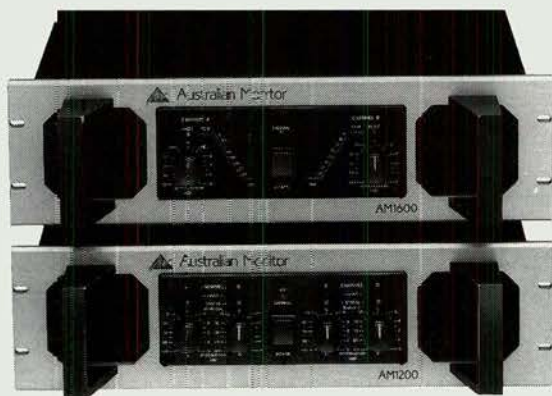
Having recently finished an 18 month stint as a Vari-lite operator on Sting's tour, Rocky is back in the designing chair for 10CC.

The rig also contains 120 Pars, a Celco 60way for the conventional lights and a Celco Navigator for the Golden Scans. Hopefully this tour won't reach here.

The Sleaze Ball will be with us again in October and once again Alan Parkinson has been chosen to



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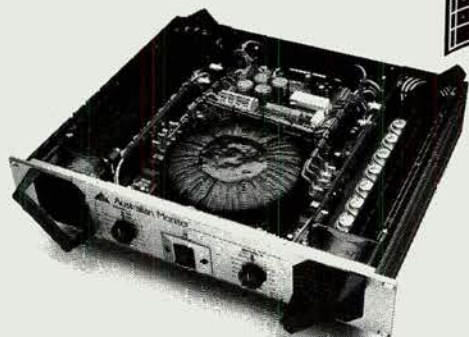


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design the lighting for the Royal Hall of Industries and the Dome.

This year the Sleaze Ball returns to the original idea of a costume ball rather than a theme, although the Dome will have a silver theme to its decor and the RHI a gold theme, including giant words the likes of which I couldn't possibly put in print.

The Hordern Pavilion will house a total laser show designed by Jeffrey Rose. Also new this year will be the Leather Bar, which is where I'll be.

A certain promoter is trying to put together a Sydney New Year's Eve party with Kylie Minogue performing but the event is not confirmed

First there was Zoo TV, then Zooropa and now Zoomarang is on its way to Australia. For the Zoo TV tour, U2's Bono took on The Fly persona and for Zooropa it was MacPhisto. With a name like Zoomarang, I'm really worried about what it will be here.

It still remains to be seen if, financial reasons permitting, the entire Zoo TV set up will travel here.

The lead singer with American band Oranutang, who supported the Baby Animals, jumps around so much on stage that he has fallen off it every night of the tour.

Apparently he was also excited by the fact that the Sydney venues had some accessible lighting bars from which he could swing out over the audience.

Chris Isaak is also due here soon although it's not clear yet if he's only doing a promotional tour.

If any tours are announced, I advise you to get tickets. After years of reviewing concerts, I have to say that Chris Isaak and his band put on one of the best performances I've ever seen. Real entertainment.

Phil Greaves from Total Concept Productions told me about a large dance party they worked on last month in Perth that ran into last minute trouble. The venue owner decided at 3pm on the day of the party that he no longer wanted it held on his premises. An alternative was found and, in true cavalier style, TCP managed to put up another rig just in time.

Meatloaf begins his world tour here, travelling through the country during October and November.

*(Slow Winter, continued)*

of the changes we've made have been internal, like better stock control. You just have to be better at everything or you're not going to survive.

"I think everybody will be moaning by March. Things have been bad for a year and a half now and I don't think they're going to improve radically. I mean, the work is out there you've just got to be prepared to go out there and get it," Bresland said. "There are new markets opening up in advertising and commercial work, for instance, but I guess the glamour and the satisfaction, or the reason that we all got into this in the first place, is no longer there either. It's like the difference between doing a Mick Jagger concert and an Amway conference."

In contrast, the Northern Territory and Queensland are booming. In Darwin, Top End's Colin West said 1993 was turning out to be the company's best year. "There's a lot of competition up here for us and we're the dearest, I'm not denying that. But we're also consistent and reliable," he said. "I think the companies that are having trouble are buying the wrong equipment. I've been in this business for 15 years and we've always put the money back into equipment.

"You've got to keep up to date with it. I mean, we've got Intellabeams up here. When I first came to this town though, no one knew what a three-phase was. That was 15 years ago and we've been working to educate the market and showing them why our equipment is more expensive - because it's better." West said that whereas companies in southern states could afford to specialise, organisations in places like Darwin had to supply a complete range of services, from disco hire to concert sound and AV systems to transport, to survive.

"Business is looking good for us but only because we're diverse. I mean, if we didn't hire out lights, we'd lose half our work. I think our competitors are finding it harder because they're basically two-man operations and they can't deliver the service or range of equipment."

In the Far North Wild Gravity is enjoying its monopoly, especially since the opening of the Townsville Entertainment Centre last year. The company handles about one big show per month and runs a couple of in-house PAs for its bread and butter. "You don't get fat and rich but business is very steady up here," Wild Gravity's Noel Anthony said.

Similarly, East Coast Lighting's Greg Hughes said he hadn't noticed any major increases or decreases in business except during the end of the '80s. "I'd say we're back to the same level as in 1987 and '88 as far as business is concerned," he said. "But we would have gone broke then if all we did was rock and roll. Unless you reach the very top like Jands and CLS have you can't survive in rock and roll - and even those companies have to work in other areas. "We're actually known as a rock and roll outfit but in the last 12 months we've done two Tom Jones

## HIRE BIZ BUZZ

shows and the rest of the work has been in areas like fashion, theatre, conventions and special events."

Other companies surviving well through diversity include Clearlight and Concert Lighting Systems in Melbourne, one of the hardest hit states, and the PA People in Sydney. All three have made significant shifts in their mix of business during the last 10 years. Both the PA People and Clearlight moved into television production hire, while CLS is "flat out" with corporate business and supplying all the lighting for Cats, which runs for three months each in Melbourne, Singapore and Hong Kong. "Ten years ago 90 per cent of our business was in rock and roll. Now it's about 10 per cent," CLS' Trevor Lloyd said. "All industries change though. Business was really big in the late '70s and the early '80s but the market has changed in 20 years, and the recession has just speeded that up."



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This letter came after Chris Kennedy was most unpleasant on the telephone. A1 owe us money, and the story in the last issue had nothing to do with that. >>>>>>

## SPY'S UPSET

I read your article on Page 15 of your latest publications of "Connections", with disgust and this has caused me to write to you.

The article in question is in regard to the new PA that "Spy V Spy" are now touring with. I had the misfortune to pay money to see this act, with their new PA, about 2 months ago at a venue in Wollongong.

Being a musician in a working band, and in the day a manager of a Production company, I feel strongly enough about this to write to you.

"Spy V Spy" are one of my favourite live acts, and I have seen them at least 10 times at various venues around Sydney and Wollongong. Every other time I had seen them their FOH guy was an "older" chap with very grey hair. Their sound, under this guy's direction, was extremely good, especially his use of effects. Now they have this young guy who is absolutely dreadful. Now you might think that I am being very harsh in my appraisal. I very much understand as well as the next person the handicaps that are associated with live mixing, but I cannot tolerate paying to see a "major" or "Semi Major" act, walking in hearing absolute shit coming out of the PA and then looking in horror to the desk (thinking that perhaps a major illness has occurred to the sound guy) only to see him eating a pack of Twisties, dancing around talking to women, as if the mix

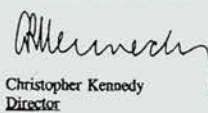


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sounds mega.

Now this man's basic problem was the balance. It wasn't like he didn't have enough PA or the sounds that were in the mix sounded bad. It was the balance, the most basic ingredient of a mix. Then I open this month's edition of Connections to see his happy face beaming back at me, Ahhh!!!!

Instead of these people whingeing about acts like INXS and Barnes bringing in overseas talent to do the jobs, they should get their shit together first, because if I was Jimmy Barnes and I heard what I heard, I'd never employ him to do FOH for me, and I'd tell everyone I knew in the Industry.

There, I got that off my chest. Connections is a great magazine and all the people I deal with in the industry think so too. Keep up the good work.

- EVAN KILL, Wollongong, NSW.

\*People can be so cruel. - Ed.

## CERWIN VEGA

Regarding the distribution of Cerwin-Vega in Australia, (report, Page 16, August issue) Ashton Admore are not the exclusive agents for all Cerwin-Vega products, rather the distribution is split between several distributors as has always been the case. Usually HI-FI, Pro and Car Audio products all have their own distributor in each country; Australia is no exception.

Earthquake Audio and Earthquake International have been representing Cerwin-Vega in Australia for some seven years now and over that time the company has diversified into areas other than Pro sound. Presently we are strongly involved in the car HI-FI market representing, Cerwin-Vega, L.A. Sound, and Hollywood Sound Labs.

As most industry professionals are aware the company was built on its ability to repair anything bearing the Cerwin-Vega name, this has not changed, although we are mostly in the car audio area now. We will always be supporting the product with spare parts and service. To this end we can proudly say that we have recone kits in stock for just about every Cerwin-Vega speaker.

I would like to make it clear that we are not the "old Cerwin-Vega agents", we are still very much national agents for Cerwin-Vega products, however our markets are different now compared to when we started out.

I should be grateful if you would be good enough to pass this information on to your readers so that the confusion caused by the announcement in last month's Connections can be cleared up.

- Stephen Montano, Earthquake International, Balgowlah, NSW.

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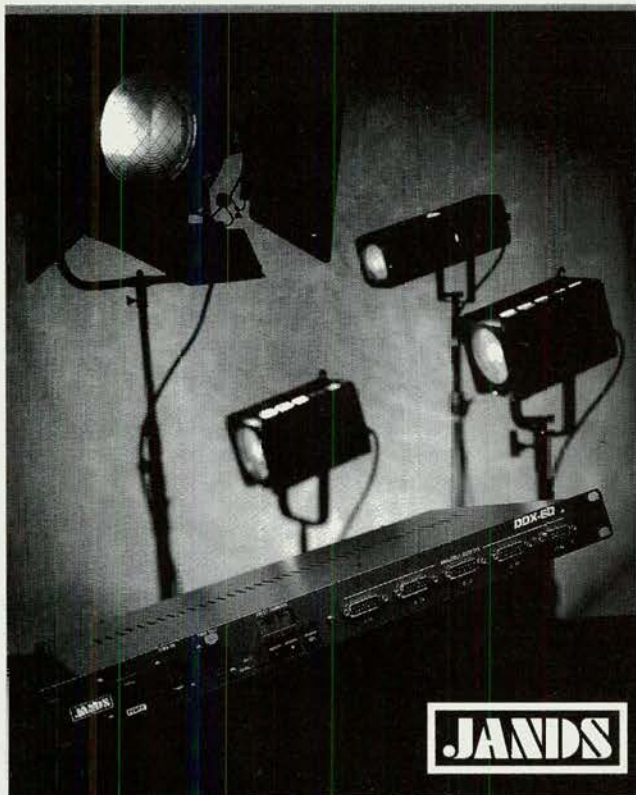
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## Meridian Falls To Earth

*It all looked fine, new team revitalise a studio - until the actual sale fell through!*

Rich Music Studio in Sydney is to close down after a bizarre series of events, cumulating in founder Paul Rich breaking in to evict staff at on the morning of Friday 30th July. The action followed an abortive takeover of the facility by a consortium known as Meridian Recordings Pty Ltd - who failed to pay, according to Paul Rich.

"It never should have been, they never had the money, they took over under a heads of agreement and as soon as I tried to get a draft contract signed they duck and wove", said Rich. "They took over looking for an investor. I had to take control again - and it was hard. When I came back I had to spend \$12,000 the day I came back - to get (it) out of trouble". (Monetary claims were made by both sides).

I sighted a document signed by Rich that could be the 'heads of agreement' - and it did indeed indicate a sale of the facility was in the pipeline during July. This was a letter on Rich Music Studios letterhead, comprising three paragraphs that said little except that 'capital would be introduced' into the new

company. By whom it remains unclear, and the purpose and function of the letter is equally unclear. The letter doesn't refer to the process of sale, nor does it set out a timetable or mention an amount of money.

However it seems the letter is all that was used to satisfy the participants - who went on to create a situation that would end with everyone dissatisfied.

Some of the participants in the Meridian consortium met with me in a coffee shop during August to tell their side of the story. Phil Powell is a musician I first met playing at a B & S Ball in a tent setup in a paddock out at Rydal. Phil's wife Susan was in a band with him and the three Powell children - like a bush/blues version of the Partridge Family. The family lived in the district for the following year, travelling about in an old bus and running blues nights in a Bathurst hotel.

Meridian Recordings Pty Ltd was the company structure used to take over Rich Music Studio, and numbers Susan Powell and Greg Simmons as directors. Simmons is best known as the Editor of Sonics Yearbooks, and was also a lecturer at the Audio Education Centre, or AEC as it is better known.

AEC is also owned by Paul Rich, and operated full and part time audio courses from Rich Music Studios premises. Rich states he is committed to the School - but for at least the month Meridian ran the facility, the Schools status was unclear.

Trying to establish fact from fiction in a matter like this is difficult, what is apparent is that for at least four weeks, Rich Music Studios ceased to be, with Meridian in possession and operating the facility and generating some \$45,000 worth of work. It was a successful trading environment, with the likes of

Wendy Matthews and the Tin Lids recording, and new clients being attracted under the management of Cath Delandro.

Meridian was a consortium made up of six people, with day to day studio management provided by Cath Delandro, formerly of Rhinoceros, the large Sydney facility that closed earlier this year. Aside from Greg Simmons, other participants included Scott Christie and Peter Lees, who were both long



Phil & Susanne Powell with Greg Simmons (right)

serving Rich Music Studio employees.

Back in April this year Paul Rich advertised the studio for sale as a going concern, in exchange for \$625,000. Not able to find a buyer, it seems Rich was approached by Phil Powell with a takeover proposal. Powell reasoned that the business could generate a positive cashflow, and that if he demonstrated this he would be able to attract investors. "I didn't have any money", he told me, "but the studio's books were not in order, so it took some time to figure out the true position".

Powell and Simmons claim they were presented with considerable areas in lease payments for equipment and the premises occupied by the studio. They say they arrived one day early in their reign, to find the landlord had barred them by way of lockout, from entry - and that in order to trade, they went on to pay over \$10,000 in rent to that landlord in the short time they were in occupation.

By now you'd be wondering just what kind of deal was struck between Paul Rich and the Meridian partners. It seems Meridian presented Rich with a way out, perhaps he was fatigued and fed up with the pressures of business. In any case, an unusual deal was done whereby Meridian would takeover operation of the facility and work to discharge debts owing to various Rich Music Studio creditors.

"We paid plenty of people", Powell said, "and negotiated with all the suppliers and creditors. Everyone knew it (the studio) was under new management, it was important that people knew Rich no longer had anything to do with the place. As it was, the true position took a while to emerge".

As to the studio environment, Simmons says some

## NEWS

AROUND THE COUNTRY  
With Caroline Grafton

**Damien Gerard Sound Studios**, Sydney NSW, have been especially busy this month due to the fact that Marshall Cullen studio manager, managed to pull a tendon in his calf and has been hobbling around on crutches getting in everyone's way and generally making a nuisance of himself. But Simon Day still managed to start production on the new debut EP for Sydney band 'Alien Grey' with Mike Wood at the helm. Brett Myers from 'Died Pretty' has been foraging into the production side also this month with Adelaide band 'Playground', again with the sleepless Woody steering the console. Russ Pilling has been flat out since his return from holidays, cutting an EP for Sydneys 'Big Electric Cat', finishing the debut album with Bernie Bremond (ex Diesel's Injectors) and tracking new material with Pete Wells. DG's were also established as National Distributor for C-Max last month and we wish them well with their expanding sales product range. Contact them on (02) 692-9915.

**David Hinds Recording Studios**, NSW, have fallen prey to their own egos by forming an in-house band called 'Dangerous Mongrels'. Studio Owner David Hinds, Engineer Gary Buckridge and Drum Legend Tommy Flynn have formed the trio and were last seen demoing inhouse, chewing mic leads and urinating on monitors. But call David anyway on (065)81-1235.

**Enrec Studios**, NSW, have witnessed an amazing amalgamation of talent in the last month with Pixie Jenkins (last years Tamworth Gold Guitar Winner for instrumental) recording a new album with 'Rose Tats' drummer Paul Demarco and a very special guest appearance by Joy McKean. For those who don't know Joy is the wife and business partner of Slim Dusty, as well as being a wonderful musician especially on the fiddle. Call them on (049)36-1376.

**Sony Music Studios**, Sydney NSW, have been graced by the presence of Paul Gray and Danni Gaha who are busy writing in the Midi Suite, lets hope it's a hot product. John Russell and Ross Ahern are working hard on soundtracks in the Protocol Room. Give Ross a call on (02)332-0320.

**Under New Management**, Cremorne NSW, have been busy as usual. **Mark Moffatt** is about to

simple changes were made for the better while they were operating it. "We setup the studio level with key access, so no-one would bother customers while they were working", he said. "It used to be ridiculous", Powell interjected, "because Rich would stick his head in the door and want to show a prospective student or a group of (potential) investors through".

Whatever the daily tribulations, successes and sweat that the Meridian partners put into this period were, the fact is they were evicted from the facility by Paul Rich and a small army of security guards. "We had the Police come down, and they told him (Rich) that it was a Civil Matter. They told him that if he destroyed any property or touched anyone they would charge him", said Powell. A standoff was resolved by Meridian walking "We had a vote, and decided to go", said Simmons. "It was too complicated, we were advised we had possession and could win in court, but the place needed to keep trading".

The Meridian partners could perhaps be viewed as a little idealistic in that they came into the venture on the hope they could attract money down the track. On balance, from a trading point of view they may have been correct, because they proved they could operate the facility. Certainly in the time they were there they along with Rich Music staff worked very hard to service customers, and attract new business.

Plenty of claims were made by both sides, and to accurately track this episode in print is to steer through cloudy waters at best.

The assets of Rich Music Studios, including the SSL console, will be auctioned by Mason Grey Strange on September 7th. Rich says he appointed the auctioneers, and will rebuild the Audio Education Centre after the sale. He also told Connections that the full time and part time AEC courses underway at presstime would conclude in an orderly fashion prior to the sale.

-Julius Grafton.

## INSIDE 301

*Caroline Grafton visits studio most people in Sydney are talking about these days*



When Martin Bengé, then General Manager of Studio 301 was offered management of a British studio group including Townhouse and Abbey Road, it was a career opportunity to good to pass up. The next question was: Who was to be his successor?

Jim Taig (*then Director and General Manager of Studio FX, pictured above*) was the most logical choice. His experience in the recording industry as engineer, producer, business manager, his past experience within the studios of 301 as well as his ability in people management, left Jim with the skills required to manage, restructure and build up this facility. When Jim was appointed as General Manager in November 1993 he immediately began to instil in the studio a new and dynamic feel. The talk around the country was up-vibe and on everyone's lips was the comment, "Jim's really going to make 301 happen". If its possible for an inanimate object to take the personality of the person in control, that's exactly what's happening to Studio 301.

(continued over)

complete production on Debbie Byrnes album, which has been recorded at Sing Sing Studios in Melbourne and The Vault in Sydney. Greg Henderson is mixing the album in M at Studio 301 Sydney. Chong Lim is featured on keyboards. Greg's also mixing tracks for the new 'Poor Boys' CD. Garth Porter has returned to Sydney and is producing film soundtracks for the 'Rough Diamonds' film featuring Jason Donovan. Ted Howard will be engineering/mixing this project with Garth having recently completed the engineering on the Suzanne Clachair album at 301. Producer Dave Froggart with Brendan Morley engineering, recorded an album with the 'Tin Lids' at Bowral Freight Train and mixed at Rich then Meridian then Rich again in Sydney. Mark Ovenden has completed the programming/arranging at Festival Records Sydney, with Yothu Yindi and is currently in New York on another project. Brent Clark has mixed tracks for the 'Custard' EP. Angelique Cooper has remixed Tracey Arbon tracks for Festival. Tom Colley has been engineering further demos with Andrew Bett at Rondor. Rick Will is currently completing producing/engineering 'Scary Mother' for Mushroom and has mixed three tracks for 'The Poor Boys' new CD to be released by Sony. Kevin Shirley returned briefly to Sydney only to be offered

(go to page 37)

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301 (continued)

Jim actually commenced his recording career at 301 in 1980 as (like most people do) a coffee boy. At the time 301 was, and still is, a state of the art studio and with the experience of more senior technicians freely lent, he worked and studied to become a freelancer in 1985. Life - like music - seems to go full circle, and now the 31 year old Jim Taig is in the hot seat.

Studio 301 has always been considered one of Australia's prestige studios but the client base was an indeterminate mix of Jazz, orchestral, rock & jingles. Jim Taig is determined to expand this client base to all forms of music and is setting about to upgrade and revitalise all technical aspects as well as the general feel of 301. The studio has not had a major upgrade since its rebuild in 1977 and on Jim's office walls, waiting for his approval, are several interior design layouts and colour schemes, for new lounge areas within the control rooms and studios.

Jim wants artists, producers and engineers to feel at home at 301 and establishing a home



Brandie Hodgins

environment seems the easiest way.

Jim is also in the midst of purging the excess of equipment around 301. As one of Australia's older studios you can just imagine the amount of gear lying around, still in good nick but unused. 301 is capitalising on this treasure trove to stimulate funds for further upgrades.

Studios A, B, M and the Midi Suite are the envy of many studios around the country. Why? Well it's not just the feel I can tell you. All the rooms are fitted out with an amazing array of equipment. But that's still not why.

It is the attention to detail, the perpetual maintenance, the ingenious patchbays and acoustic intervention, that make 301 one of the most coveted studios not just in Australia but the world. Visiting engineers from overseas, especially the States, often comment with envy on the high standards set by 301.

People are the other main asset of 301 and



Fiona Simpson



Jacqui Espie

personal service is high on the agenda. Here's an introduction to a few of the very talented people at 301.

Steven Crane- Technical Manager  
 Fiona Simpson- Studio Facilities Manager  
 Jacqui Espie- Mastering Facility Manager  
 Phil Morgan- Senior Technical engineer  
 Greg Cameron- Technical engineer  
 Vince Pizzinga- Technical Engineer  
 David Macquarie- Mastering Engineer  
 Brandie Hodgins- Facility Co-ordinator

Jim Taig and all the people of 301 are ardently proud of their heritage, in both their profession and nationality. They, like most of us, want to know why many, if not most of the A & R people, are determined to bring the Australian recording industry to a stand still. Why do they have to hire engineers from overseas? Most of the imported engineers Jim's met think it's a joke. "Wow! A FREE FIRST CLASS TICKET TO DOWN UNDER, sure I'd love to do that mix. YEAH! I've had lots of experience, just look at **this credit on this album**". Jim pointed out a recent experience where a bit of talent was imported at great expense to the bands advance. Unfortunately, if someone had of studied his credentials a bit closer they would have discovered that he was actually a tape operator.

Anyway, after many hours of repair work, Australian engineers managed to retrieve and recreate what should have been a reasonably straight forward piece of work. What a waste.

Australian A & R people have to learn to use and develop Australian producers and engineers. By taking acts overseas or importing technical talent they are robbing not only the studios and Oz engineers but they are potentially damaging the whole future of the Australian recording industry. Jim Taig is passionate on this subject.

Australian studio rates, including the upper echelon studios, when compared to overseas facilities are reasonable. For example, we don't make a surcharge for digital multitrack as they do in the USA & UK. Also we



Greg Cameron & Vince Pizzinga

generally pay approximately 50% more for gear, than say those in the UK - and we are still approx. 50% cheaper in our studio hire rates.

We have some of the best studios in the world with some of the best technical talent. Limit the cash flow into these studios and you trigger the demise of an industry and a whole generation of talent.

#### Scenario:

- 1- Reduced studio income
- 2- Instigated studio price war
- 3- Reduction in maintenance standards
- 4- Leading engineers go OS for work
- 5- Knowledge is not passed on to budding engineers
- 6- Acts then have to go OS as we don't have any decent studios or engineers
- 7- End of industry.

Simple isn't it. Seven days, I've read somewhere, is all it took to create and seven easy moves is all it takes to destroy.

As usual I asked for any tips for the youth of the recording industry. Jim replies "don't do courses - they are a waste of time and money, you see some schools advertising 'Industry Recognised Certificate' there is no Industry Recognised Certificate. I've seen a lot of kids spend thousands of dollars on courses and unless they had a natural talent and a technical ability in the first place it's a waste. They are taught less than the basics. You have to learn by experience and you get that by listening, watching and making a lot of coffee. You start from the bottom and learn. Oh, and you have to develop people skills that is really important, be able to communicate and interpret".

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## FINISHED IN THE STUDIO?

Ready to pack your product off to the pressing plant? Not really ..... you need to better understand the Mastering Process. Paul Bryant will guide you through the process, and answer your questions each issue.

**This issue: CD GAIN**

**THE REAL WORLD INTERFACE :** The link between the glamorous megabuck studio and the plastic 3 in 1 in the lounge room.

Sometimes, something goes wrong and the result is a phonecall along the lines of "WHAT HAVE YOU DONE? It didn't sound like THAT in the studio!" Mastering has been around for as long as recording, yet many people don't really understand what happens; including a lot of Engineers.

Rather than write a book on the subject, I am going to look at different aspects of mastering by answering questions and referring to occurrences in day to day operations. Hopefully, this will clear up some of the mystery.

**QUESTION: CD gain. Why does my CD collection exhibit an impossible variation in output gain? I stack 6 CD's onto my multiplayer**

and then need to ride the volume. For example, Renee Geyer's "Faves" compilation sounds half as loud as Richard Clapton's "Distant Thunder". The problem isn't isolated to Australian releases either, try Prince's "Love Symbol" CD vs. Al Jarreau's "Jarreau". Is there a standard?

**ANSWER:** Yes, there is a standard, but it's not what you think. As for the main part of the question, I'm going to separate the two older discs (Renee Geyer and Al Jarreau) from the two recent releases and look at current practice first.

**LEVELS:** Most CD's produced over the last few years are probably all within 2dB of each other. Honestly. The real question here is what is being measured and how. Certainly it has little to do with how people hear sound.

**DIGITAL AUDIO:** The dynamic range of digital audio is a direct function of the number of "bits" in the system. CD's are a 16 bit system so the dynamic range available is 6dB x 16 bits = 96dB. Once all these bits have been used, any increase in signal results in severe distortion as the electrical waveform is "chopped off" at its peak. To avoid this, some pretty special mastering is required.

**METERS:** One specific characteristic of digital peak meters is that the response time is much faster than any of the other meters in common use, for example, VU meters, BBC ppms, DIN ppms and LEDs. (ppm = peak programme meter). To a digital peak meter, a peak lasting less than a millisecond has the same peak value as a peak lasting 10 minutes.

This is fine for the maximum usage of the 16 bits available, but it is not the way people hear sound. The human ear will average out the short duration peaks and the maximum level will seem to be a lot lower that it really is.

**CD MASTERING :** The current practice for the scale on a digital peak meter is to mark the maximum possible level as "0 dB". All levels below maximum have a negative value, the minimum possible being -96dB.

The current standard for level on CD Masters is that the peak level should be between -2dB and 0dB, with no "over" levels. (Which are classified as tape faults!).

This means that one peak in one track, or even just the final crescendo, can set the maximum level for the entire disc.

**PUTTING IT ALL TOGETHER :** When a CD Master is compiled, the tracks are assembled to



**WorkBench**

With Howard Jones

## The \$1800 Dilemma!

The caller said "Could you take a look at our Fostex 16 track? It doesn't seem to erase on some tracks". Sounded strange, I had a look-see.

The machine, an older model B-16 was bought from a "friend", who told the band it was in working condition. But it had been sadly neglected.

The tacho roller was very glazed, and in one place was cracked right through the rubber. The fixed tape guides were so work they were flat where they should have been round. The record/replay head had a flat spot worn into it so deeply that you could catch your thumbnail on the lip formed by the wear pattern. The capstain shaft and tape tension rollers had oxide embedded in the metal. The head shield would only come halfway up because it was so heavily gummed up with oxide. In short - this machine was stuffed!

Odds on that the head had never been demagnetised. (How many of you even own a suitable de-magnetiser?) The machine would need a complete rebuild - but what about the (non) erasure problem?

The first place to look was the erase head stack itself- was it doing the job properly? The erase head was duly removed and - lo and behold - someone had already been stuffing with it - one of the head wires was off, poor soldering was in evidence. The REALLY astounding discovery came with testing the stack - 5 of the 16 erase heads were open circuit.

Now to lose one head may be misfortune - but FIVE? What was going on here?

A ring around revealed most of my colleagues had not come across an instance of a head going open circuit - and non of them knew of a case where several heads failed in the same stack. My big concern now was that machine may have a rogue fault which was burning out erase heads.

Doubt reached full flower when the distributor quoted \$1,800.00 for a replacement head! This was getting very serious indeed.

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"sound right" and so that variations between audible loud and soft are consistent with the programme content. However, this must all be in relation to the peak level which has set the maximum level for the disc.

Some tracks on the disc will therefore only peak to say - 8dB to 3 dB, depending on the peaks in each track. Discs with the wide variations between peak level and audible levels can sound quite low in level, even though in Mastering terms they are not.

Back to the examples quoted. Both recent discs sound loud, but the main reason for this is that the peak levels have been very tightly controlled, allowing the audible level to relatively high. These discs probably hit 0dB many times, perhaps several times in each track.

Now, a 3kHz tone recorded at 0dB would be pretty loud, but would become very annoying. Loudness is not the only consideration, there has to be room for personal taste as well.

This is where there is no standard, and this is the way it should be. For years, Engineers, Producers, Musicians have all been trying to sound louder and/or better than "the other guy". With analogue systems, such as tape or records, "pushing the limits" became common practice. With digital, you run into a brick wall; 0dB is 0dB and "over" is "over".

As there is no way to cheat the limit, the skill of the Engineer becomes a major factor. Digital has really sorted the experts from the space cadets and the results can be clearly heard by anyone with a CD player.

**THE EARLY DAYS OF DIGITAL :** I can't tell exactly when Renee Geyer and Al Jarreau were first mastered for CD, but it looks like the mid 1980's. Based on this, I'm going to guess what has probably happened.

Remember the slogans when CD's were introduced? Lines like "perfect sound - forever"? The same attitude applied to the CD mastering equipment as well. At first digital processors didn't have over level indicators because the dynamic range was considered to be more than sufficient, so headroom would be a problem. Instead, the peak meters were calibrated so that what is now known as 0dB was called +20 dB. 20dB below this point was a 0dB reference which was used for line-up purposes and corresponded to "0" VU. The assumption was that the console would probably have less than 20 dB headroom and so there was little chance of getting digital over levels. If the digital level ended up 3 to 6 dB below maximum, it didn't really matter because digital was perfect, wasn't it?

So, when analogue masters were transferred to digital, they were often aligned to "0" VU and transferred straight across, resulting in typical digital levels of about +8dB by the old meters, or about -12dB on today's meters.

Soon after this a compromise alignment became common where the reference level of the

digital processor was raised from 0dB to +6dB in order to increase the level of the digital signal. The reason for this was to increase the volume on the masters and also because the "perfect sound" wasn't perfect: particularly at low digital levels. This leads us to "emphasis".

**EMPHASIS :** Digital sound has different properties to analogue. Up to 0dB (new meters) distortion decreases. Conversely, the lower the signal level, the higher the distortion, until -96dB is reached where there is no digital sound at all. (There is a digital signal referred to as "digital black" at this level, more another time).

The distortion at low levels is also referred to as "quantising noise" and is quite audible, so much so that noise similar to tape hiss is added (called "dither") to mask the quantising noise. These days this is pretty sophisticated and works well but in the beginning, quantising noise was often a problem, particularly if low operating levels were being used. Classical music, with its ambience, harmonics and low level, high frequency detail was particularly susceptible.

In order to reduce the effects of noise, "emphasis" was devised. Incidentally, this is still part of the digital standard; CD players, DAT machines and other digital equipment all have facilities for "de-emphasis" of recorded material, although it is not often used these days.

Emphasis works like this - High frequencies are boosted (by up to 10dB above 10kHz) before digital encoding. The emphasised signal remains boosted until after it is converted back to analogue and de-emphasised for playback. This works well for programmes like classical music where the high frequency information is usually very low level, but problems arise when recording rock or jazz, where the music contains high level peaks of very short duration.

These high peaks are further boosted by the emphasis and have a significant effect on the digital level recorded. On playback, the end result is that the overall audible volume is relatively lower than if no emphasis had been used.

Back to the discs in question. If the lower level disc has been recorded with emphasis, up to 6dB could be lost on playback. Subtract another 3dB for losses due to metering and the peak level is now about 9dB down on current practice. If the music has a wide dynamic range, the end result, compared to the loudest disc, could be about 12-15dB quieter in audible level.

Finally, what can be done about it? Unfortunately, not much. No-one is going to artificially restrict the loudness of their produce. People using CD changers for background music will have to select discs carefully. As for CD jukeboxes, the results must be interesting!

That's all for now - may Fletcher & Munson smile on your sound.

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



What if I fitted it and it blew up because of an undetected fault?

All the replacement parts were ordered, the machine pulled down and cleaned, the new parts installed. The record/repro head was relapped and the fixed tape guides rotated. All the channel cards were removed and carefully checked - likewise the mother board and power supply. There was nothing obviously wrong, and the machine was at last looking in a half-way decent state. So, it was time for the smoke test - let's roll tape!

My assistant laced up a reel of 456, put the machine into record mode and whipped along the test points on each channel card to see that all was well. When he got to the last channel card, he turned to me with a ghastly look: "Channel 16 has gone open circuit!"

Resisting the temptation to close down and run away, I asked him to remove the erase head and test it again out of the machine. Luckily, the cause of the problem was quickly located. In this model, the wires from each head stack are soldered onto the pins of a dip header, and the dip header plugs into a socket on the connector PCB. Anyone familiar with this kind of arrangement will know how easy it is to bend a pin of the header such that it doesn't connect with the socket at all. And sure enough, there it was - one of the pins corresponding to erase head 16 was bent under. Once this problem was set to rights, things became a little easier.

A few quick, basic tests showed that the machine was performing quite normally. With confidence gathering, we ran the recorder for a longer period - still no sign of trouble. From here on, we proceeded to a full mechanical and electronic alignment, which brought the machine up to a surprisingly high level of performance. The B-16 went back to its owners performing like a honey.

And the burnt out erase head?

Well, a little digging behind the scenes revealed that the previous owner was in the habit of using the machine as an experimental test bed. And we all know that experiments do go wrong.

**NEXT MONTH: DAT MAINTENANCE.**

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

# STUDIOS

## BOB ARMSTRONG

Recording your band LIVE AT THE LOCAL:  
Things to consider!



You know how those urban myths start, the type that get perpetuated into local folklore, some even reach legendary status, someone knows a bloke who knows a bloke who has a friend who swears it's true!

Well right here we dispel a few myths, rip away the veneer and delve into the depths of recording for us amateurs. I must say I've had quite a few people approach me since I started doing this column bamboozling me with techno-talk, I've had to interrupt them and tell them that I hadn't a clue what they're talking about. I'm no wiz kid with the lingo by any stretch of the imagination. This however shouldn't be a deterrent to any would be recorders, the great thing about this industry is that you can learn as you go, fly by the seat of your pants type recording and yes - if you want to be hip you can learn the jargon.

As long as you are prepared to make a few blunders along the way and have a lot of patience you can go a long way, or a short way - it's up to you. Well, that's one myth blown, you don't need a degree in sound diagnostics to pull a good sound on tape, only a degree in commonsense (Help, we could be in trouble now). The old story about Jimmy Hendrix not knowing what the chord progressions he was playing were called still holds true today. The next time a petulant muso tries to tell you your job, stick a chart in front of him and watch him run the proverbial mile! (Hear, here! -Editor)

Enough of that, in this month's article we're going to tackle the subject of Live recording. Of course, everybody has become **extremely** bored

with all the unplugged things happening all around -from the great Neil Young to the once great Rod Stewart, even our own 'Oils have tried it, they're all doing it, if I could be so vulgar. Of course it goes without saying that the live record has been around since Mosses played Bass with The Pharaohs, it just gets re-invented each generation.

Firstly if you are thinking of recording your band or artist live have a think about the venue. Get some local info from fellow bands, engineers or anyone who's opinion you trust. If it is a "live" gig check out the room before hand, go when there's a band on and generally check out the pro's and cons of recording there.

**Don't** ask the room booker he'll tell you that Kiss recorded Kiss live 3 there. (Bob, we have so much in common. -Ed) If the room stinks (unfortunately many do) then you'll know it. Many great live gigs are not suited to live recordings. DO YOUR HOMEWORK. You may get the idea that it doesn't matter about the live sound and that you could record through the desk and get a good sound on tape and you would be right in a perfect world, however that would mean you would have to forget that dreaded thing called human nature.

Basically it goes like this, if the sound is bad the crowd go home, the crowd go home, the band start arguing with the sound guy, the sound guy gets shitted off and kicks the lighting tech for no apparent reason, and he gets so pissed off that he switches the strobe on, which annoys the bejesus out of the bar manager who

(continued over)



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*Music Technology Magazine*

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*Mix Magazine*

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BOB ARMSTRONG  
(Continued)

has to save his barmaid from having an epileptic fit. So as you see as in life it's just a vicious circle and you can bet your latest Michael Jackson CD (the one with hand on his crotch) that everyone will lose "the vibe" - a very special commodity in live recordings.

Get a good room, they are out there. Beg, cajole, bribe plead with the room bookers, tell them it'll look good for their hotel to be in the album credits (even if it never comes out!)

On the other side of the double headed coin most bands have a fave rehearsal room that they can use cheaply, this is another good way of recording live although you won't have a live audience you will have all the benefits of a good sounding room. Maybe you could invite all your mates to bring around a slab and be a part of it, but don't tell any studio managers that I told you this, alright!

But I digress, let's concentrate on the live gig scenario, or the live-to-air on 2SER-FM where we get artists in to play live. Recording live performances is very exciting because you are creating something that can be captured for all time, a snapshot of history if you like. The first thing to remember is not to intrude too much upon the territory of the artist - let them have their own space, the artist has enough on mind to worry about your technical matters, keep the instructions simple, as we all that most musos are a bit light on the thinking matter. *(More truths, thanks Bob! -Ed)*

The more you intrude on the performance space the more little disasters will come tapping on your shoulder. Keep the vibe up (there's that word again) and appear to be calm and capable even if you are a raging mass of hyper bubbles underneath. Believe me it has a calming effect on the artist if those around seem to know what they're

# STUDIOS

## BASF National Tracking Guide

ARTIST	PRODUCER	ENGINEER/S	NOTES
<b>New South Wales</b>			
<b>Airmotion Studio</b>		<b>Contact Kristen Wolek</b>	<b>(02) 550-3863 24 Track</b>
Armoured Angel	Tim Whitten	Tim Whitten	Album
Archon Music	Geoff Cruikshank	Geoff Sturry	Mastering
<b>All Music Manufacturing</b>		<b>Contact Geoff Sturre</b>	<b>(02) 557-1169</b>
Cobra Club Vol.1	Mark McGrath	Paul Bryant	CD Master
Glenn Heffernan	Glenn Heffernan	Paul Bryant	CD Master
Farmers Aid	Grant Luhr	Paul Bryant	CD Master
Toe To Toe	Scott McFayden	Paul Bryant	7" Vinyl Master
<b>Bush Traks Recording Studio</b>		<b>Contact Ruth Miller</b>	<b>(066) 89-1290 24</b>
David Birch	D.Birch/D.Gosper	Dave Highet	Album Tracks
Diana Gosper	R.Green/D.Highet	Dave Highet	Demo.
<b>Charing Cross Studios</b>		<b>Contact Gordon Hervey</b>	<b>(02) 387-8362 16,24</b>
Scary Mother	Rick Wills	Rick Wills	Album Over Dubs
Morrison Inc.	Mick Whelan	Gordon Hervey	Tracking
Alien Grey	Jed Star Julian Slade	E.P.	
Living Daylights	Boyd Wilson	Gordon Hervey/Julian Slade (Asst.)	Tracking
Vince Stone	Steve Balbi/Justin Stanley	Lumpy Dave/Julian Slade (Asst.)	Single Tracking
Electric Hippies	Electric Hippies	Lumpy Dave	B-Sides Mixing
Steve Marquis	Steve Marquis	Julian Slade/Gordon Hervey	Over Dubs/Mixing
<b>David Hinds Recording Studios</b>		<b>Contact David Hinds</b>	<b>(065) 81 1235 8 Track</b>
Boorganna Beat	David Hinds	David Hinds/Gary Buckridge	Album
Tania Cassidy	David Hinds	David Hinds/Gary Buckridge	Demos
Clair Homes	David Hinds	David Hinds/Gary Buckridge	Album Tracks
Mud Music Band	David Hinds	Gary Buckridge	Demos
Design Carpets	David Hinds	Hinds/Buckridge	Jingle
Hibbard Homes	David Hinds	Hinds/Buckridge	Jingle
Elrington's Produce	David Hinds	Hinds/Buckridge	Jingle
<b>Damien Gerard Studios</b>		<b>Contact Elia Bell</b>	<b>(02) 660-8776 16/32 Track</b>
Maybe Dolls	Chris Morrow	Mike Wood	Album
Playground	Brett Myers(Died Pretty)	Mike Wood	E.P.
Pete Wells	Pete Wells	Russ Pilling/Dave Trump	Album
Park Side Killers	Dave Price	Dave Price/Mike Wood	E.P.
Once Upon A Time	Ovat/M.Cullen	Marshall Cullen/Dave Trump	Album Trax
<b>Emerald City Studio</b>		<b>Contact John Zulaikha</b>	<b>(02) 905 7144/939 1943 24 Track</b>
Herv & Eq	Herv & Eq	John Zulaikha	Mini Album
<b>Enrec Studios</b>		<b>Contact Ed Matzenik</b>	<b>(049 36 1376 32 Track</b>
Chris Doyle	Chris Doyle	Steve Newton	Jingles
Pixie Jenkins	Steve Newton	Steve Newton	Album
Sharon Mann	Steve Newton	Steve Newton	Album
<b>Hullabaloo Music</b>		<b>Contact Glenn Heaton</b>	<b>(02) 684-2039 24</b>
Maui Band	Taani Glen Heaton	Album Cuts	
Slipstream	Slipstream	Lucci	E.P.
McVicar	G. HeatonG. Heaton	Demos.	
Mr. Men	Mr. Men Blair Murphy	Demos.	
Heaton/McGarvey	Heaton/McGarvey	Heaton McGarvey	Music for Disney
<b>J.M.F. Sound Studio</b>		<b>Contact Ralph Esther</b>	<b>(02) 790 4097</b>
Strangers	StrangersRalph Esther	Demo	
Colour Blind	Steve Maclou	Ralph Esther/Maclou	Demo
32° South	Esther Esther	Album	
Maria & Christina	Jay Pirelli Esther	Demo	

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<b>Main Street Studios</b> <b>Contact Rob Specogna (042) 83-4515</b>			<b>16</b>
Shake the Jungle	Band/R.Specogna	R. Specogna	C.D. Album
F.C.M.	Band	R. Specogna	C.D. Single
Tim Dutton	Tim Dutton	R. Specogna	C.D. Album
Shot to Pieces	Band	Murray & Rob	Demos.
Boot Leg	Band	Murray Nicholas	Demos.
Wongawilli	R. Specogna	R. Specogna	C.D. Album
Still Falling	Ed Tacey	R. Specogna	C.D. Album
Tom Vogel	Tom Vogel	R. Specogna	Documentary
<b>Megaphon Sound Recording Studio</b> <b>Contact Guy Dickerson (02) 516 3917</b>			
The Catholics	Adam Chapman	Album	
Baby Sugarloud	David Price	E.P.	
<b>R&amp;R Recordings</b> <b>Contact Robert Zimola (02) 624-4484</b>			<b>16 Track</b>
The Dead Relatives	Eddy Mann	Rob Zimola	E.P.
Chris Turner	Chris Turner	Rob Zimola	Pre-Production
MacNamara Constructions	P. Saunders	R. Zimola	Soundtracks
Homme	Steve Clark	Steve Clark	Add.
Legacy of Sound	Mick Cardy	R. Zimola	Pre-Production
<b>Rich Music Studios</b> <b>Contact Elise Huntley (02) 264-7734</b>			<b>24,32 Track</b>
Tin Lids	Brendan Morley		Album Mix
Torrid Zone	Lindsay Sehan	Peter Lees	Single Record/Mix
Spectres of Angre	Nondas Antanopoulos	Nondas Antanopoulos	Album Record/Mix
Peter Coombe	Martin White		Album Mix
Baby Sugar Loud	David Price	Doug Roberts	Single Mix
<b>SAE Studios</b> <b>Contact Tom Misner (02) 211-3711</b>			<b>24 Track</b>
Winterhouse	Tom Misner	Jason de Wilde	Album
Light Flash	Chris Chappelo	Jason de Wilde	Single
Larraby's Birthday	Jason de Wilde		Demo
<b>Skyhigh Recording Studios</b> <b>Contact Rob Taylor (049) 50-1574</b>			<b>8,16,24 Track</b>
Arvidson Price	Rob Taylor	Rob	Mini-Album
Soldier Blue	Bob Spencer	Rob	Single
Bugbears	Rob Taylor	Rob	E.P. Mix
The Wash	Rob Taylor	Rob/Chris Greenhall	E.P.
<b>Sony Music Studios</b> <b>Contact Ross Ahern (02) 332-0320</b>			<b>24 Track</b>
Exponents	"Exponents"	Simon Tonx	Demos.
Lisa Maxwell	"Pee Wee Ferris"	Simon Tox	Single & E.P.
Whipper Snappers	"Whippers"	Robbie Rowland	Album
Glen Morris	Glen Morris	Simon Tonx	Demos.
Dot Cooper	Dot Cooper	Simon Tonx	Album
<b>The Enterprise</b> <b>Contact Graeme Storer (02) 564 3225</b>			<b>8 Track</b>
Blaise	Blaise/Storer	Graeme Storer	Album
Jim Dempsey	Storer	Graeme Storer	Demos/Album
Enterprise Songwriters Group	Storer	Graeme Storer	Publishing Demos
<b>Trackdown P/L</b> <b>Contact Geoff Watson (02) 550-6890</b>			<b>8, 16, 24 Track</b>
Ice House	David Lord	David Lord/Simon Leadley	Mixing Album
Pacifica TV Series	Juniper Films	Tim Ryan/Kathy Naunton	Editing on Pro Tools
Blinky Bill TV Series	Y.G.F.S. Tim Ryan	Editing on Pro Tools	
<b>Trafalgar Recording Studios</b> <b>Contact Donna Fisher (02) 660 0385</b>			<b>24 Track</b>
Dig	J. Bonnefond	J. Bonnefond/R.Gist	Album
John Williamson	J.W.		Tracks
<b>The Vault Cremorne</b> <b>Contact Gina Karpman (02) 953-0332</b>			<b>48 Track</b>
Debbie Byrne	Mark Moffatt		Album
<b>Wirra Willa Studios</b> <b>Contact Will Rout (02)605 1203</b>			<b>16 Track</b>
"Mary Winter"	Tony Martin	Sharon Markut	Country Single
"George Alexandra"	Tony Vadala	Sharon Markut	Album
"Malcolm Baxter"	Philip Steen	Jan Cooper	3rd Album
Billy Roy /Lisa Silvestri	Pam's Pilgrimage Prods.	Sharon Markut	Jingle "Mounties Club"
"Renaissance"	Wayne Camilleri	Will Rout	Demo
Tracey Nguyea	Fame Promotions	Sharon Markut	Album
Steve Baragry	Steve Baragry	Will Rout	Demo
<b>Queensland</b>			
<b>Grevillea Recording Studios</b> <b>Contact Malcolm Jacobson (07) 262-8422</b>			<b>24 Track</b>
Brasilia	Malcolm Jacobson & Brasilia	Malcolm Jacobson	Single
Nick Coetzee	Nick Coetzee	Malcolm Jacobson	The Drums of Ballymore/Jingle
Jeff Usher's Jazz Unit	Jeff Usher	Bruce Jacobson	Album

BOB ARMSTRONG  
(Continued)

doing. You're going to need quite awhile for a sound check - remember the performance is important too.

There are many ways to record a live gig but the best and most efficient has to be through the desk. You could whack out your own mic's on stage and keep the recording side separate from the live mix - but this usually causes headaches with extra cabling, stands and mic's etc etc. On any good P.A desk there are line level outputs from there you can go straight into your 2 track recorder. This is the easiest method but if you are planning bigger things you will need another mix-down desk purely for the record signal, patch between the live desk mic input and your new sub-mixer and presto! there you go. This will give you mic level control to your recorder and not affect the live desk mix. In this way you can back off a level or increase as the need arises.

Needless to say you have to make the band aware that any on stage increase of volume after sound check is a no-no. I suggest gaffing the volume knobs! While on the levels of the band you will need them to soundcheck their loudest and their softest tracks so you have some idea what range you have. And it would also be handy to know who's solo-ing what where and when so you can be prepared to ride that channel. Give yourself time to soundcheck everybody, not just as some engineers do, let the drummer pound away for hours on end sending everyone off their proverbial nut, a good drum check is a short one. Just a tip, watch out for that bottom end on the kit, it sounds great at an Anthrax gig but shithouse on tape! If you are using a sub-mixer to tape and you have a couple of channels and mics spare it's always good to put out a couple of room mics for crowd noise.

There's nothing worse on a live recording hearing the band go right off and no crowd noise! Remember that VIBE thang. One mic facing audience from side of stage and one at mixing desk facing band should be sufficient. As far as effects go you can pretty well leave that up to the band although a bit

(continued over)

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BOB ARMSTRONG  
(Continued)

of reverb from the live desk wouldn't go astray.

Story time, you know I couldn't go a whole article without spinning a yarn or two. Well this one concerns a relatively major star who shall remain nameless, the idea was the record company wanted to do a live album full of hits, you know the score just before christmas, a few bucks to be made and all that. Well the trouble was the "Star" had been off the road for awhile and on the wagon, getting fit and doing all the healthy things one does when off the road.

Well he was so busy getting fit, that he missed a few band rehearsals and one thing led to another and the day before the big gig in which ten thousand tickets had been sold at the Ent centre and he'd only made it to one rehearsal.

No probs he'd done that plenty of times before, he'd just have a few wines to loosen himself up and everything would be sweet. Well the band fires up first song, the crowd go wild, it's his biggest hit of the 80's, the tapes are rolling, the star dashes on up to the mic and launches into a song. He looks around at the band gives them the thumbs up, sounding great, only problem he wasn't singing the right song. The band were playing one and he was singing another, tune and all. The crowd still went wild, the "star" was pissed so he didn't know and the band? Well, like all good bands they just played on. The gaff was only found out when they went to mix the album in the studio and like all good stories this had a good ending the "star" overdubbed his vocals after some embarrassment - even with the customary "good evening Sydney" and the record buying public were none the wiser. But we all know now don't we!! If you want to find out who the "star" was you'll have to track me down and buy me a beer,

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ARTIST	PRODUCER	ENGINEER/S	NOTES
<b>Victoria</b>			
<b>Gotham Audio</b>			<b>Contact Tom Kehoe (03) 879-9400</b>
John Farnham	Ross Fraser	Doug Brady/Spiro	<b>24,48 Track</b>
Rhonda Birchmore	Doug Brady	Doug Brady/Spiro	Album Recording & Mixing
Melissa	Doug Brady	Doug Brady/Spiro	Single Mix Down
<b>Hothouse Audio</b>			Single Mix 7" & 12"
<b>Contact Craig Harnath/Bruce Johnston (03) 525 3703</b>			<b>24 Track</b>
Roxas	Ross Cockle	Ross Cockle	Album
D-Generation	Craig Harnath	Ross Cockle	T.V. Series
Def Ryme	Def Ryme	Paul Annison	Album
Horsehead	Horsehead	Paul Annison	Album
High Night Mary	Craig Harnath	Stewart Day	E.P.
<b>Newmarket Music Studios</b>			<b>Contact Dieter Bajzek (03) 329 2877</b>
Christine Sullivan	Daniel Desiere	Daniel Desiere	<b>8/16/24 Track</b>
Julian Lee	Julian Lee/Daniel Desiere	Daniel Desiere	Live Recording
Jochey Schubert	Jochey Schubert	John Ruberto	Jazz Album
Brendan Hook	Brendan Hook	Robert Dillon	Classical Guitar Album
Annette Coco	Annette Coco	Robert Dillon	Original Album
Jugularity	Peter Vadiveloo	Robert Dillon	Funk/Jazz Demo
David Isom	David Isom	Robert Dillon	Folk Album
Brassworst Band	Band	Robert Dillon	Demo
Gary Ginivan Attractions		Robert Dillon	Extensive Demo
Larry Maluma	Larry Maluma	John Ruberto	Music for Play Production
Alex Formosa	Alex Formosa	Greg Williams	C.D. Mastering (M.D.S.)
Jack Hammer	Laurence Maddy	John Ruberto	C.D. Mastering (Newmarket)
Concept Records Compilation			C.D. Mastering (M.D.S.)
Barry Michael		John Ruberto	C.D. Mastering
Bigger than Jesus		John Ruberto	C.D. Mastering (Shock)
Brodrick Smith	Robert Dillon	Robert Dillon	Demo
<b>001 Recording Studios</b>			<b>Contact Phil Pomeroy (03)348 1300</b>
Barb Waters & The Rough	Diamonds	Phil Pomeroy/Tamas Spencer	<b>8/16/24 Track</b>
Foil	Michael Sherridan	Phil Pomeroy/Tamas Spencer	Album
Flying Red Dogs	Band	Phil Pomeroy & Malcolm Dennis	E.P.
Tlot Tlot	Band	Owen Bolwell	E.P.
Tlot Tlot	Band	Phil Pomeroy/Tamas Spencer	PreProduction
Jim Keys	Jim Keys/Frank	Lawrence Maddy/Phil Pomeroy	Mix Live Album
Steve Housden	Tony Fossey/Steve Housden	Phil Pomeroy/Tamas Spencer	Mix Tracks
Many Faces	Band	Phil Pomeroy/Tamas Spencer	Tracking
The Valiants	Band	Dennis Aristo/Tamas Spencer	E.P.
Rene Diaz	Rex Goh	Lawrence Maddy/Tamas Spencer	E.P.
<b>Platinum Studios</b>			<b>Contact Gary Moorhead (03) 827-7483</b>
Daryl Braithwaite	Simon Hussey	Michael Letho/Kryss Powell	Mixing
Scarry Mother	Rick Will	Kalju Donuma	<b>48 Track</b>
Kool & The Gang	John Ravenhall	Chris Corr	Mix Album
Skin	Skin	Chris Corr	Mix Live Album
My Friend the Choc.Cake	David Bridie	Jim Rondinelli	Record & Mix E.P.
Gentle Persuasion	The Band	Phil Jones	Record Vocals
Charlie Marshall	Barry Palmer	Laurance Maddy	Mix Live Album
Funken Wagnells	Band	Laurance Maddy	Record & Mix E.P.
Jacinta	David Hershfelder	Kalju Tonuma	Record & Mix E.P.
<b>Sing Sing Studios</b>			<b>Contact Mark Wood (03) 428-4622</b>
Hunters & Collectors	Band	Nick Mainsbridge	Record & Mix Single
David McComb		Nick Mainsbridge	<b>24,48 Track</b>
Ted Egan	Robyn	Chris Tompson	Album
Indigenous Youth/Keith Williams	Shane Howard	Phil Butson	Mix
Look Mum No Hands	Band	Mark Woods	E.P.
			Album
			E.P.

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maybe I'll tell!!!

Let's just touch on a live-to air type recording that we at 2SER-FM do quite regularly. Being limited to 4-6 mic's (as channels are at a premium in most stations) leaves us with not much to play around with. The idea is a little different than the gig scenario, we basically mic the studio room itself. You know the idea- loudest instruments down the back, acoustic type things closer to the mics and vocals back about two feet off-mic. Some singers like to feel the metal of the mic on their teeth, so we have to severely re-educate them, even then sometimes in mid song you see them creeping closer inch by inch craning their necks to lap their tongues over the cone!

Of course if we were to do a whole band thing drums and all, we would bring in a mixer and mic's, then off to air or to the recorder. Singing in a dead studio can sound a little dry so we can use a couple of tricks to wet the sound. The old famous tape recording loop always does the trick, nice touch of echo! Unfortunately Wah-wah and fuzz are difficult to get but distortion is easy! Bands normally complain when they're doing live-to-air that the sound sucks in the studio and yes, well they may have a point there, but all I can say is the old adage, "it don't matter what it sounds like here, it's out front that matters"

And on that note I'll leave you till next month when I'll take you into the head of engineer/Producer/musician/composer Tom Kazas chief knob twitcher at Rich Music Studios and owner of his own home studio "The Lab"

**\* Bob Armstrong & the Navigators album 'Wild is the Way Home' is out now on Ravenswood/Mushroom records. Bob can be heard Saturdays at noon on 2SER-FM 107.3 in Sydney.**

**STUDIO NEWS & BASF TRACKING GUIDE LISTINGS: Call Caroline Grafton (02) 876-3530, or Fax (02) 876-5715.**

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ARTIST	PRODUCER	ENGINEER/S	NOTES
Stew Grace	Phil Butson	P. Butson	Album
Sugar Gliders		K.A.J.	Single
Debbie Byrne	Mark Moffat	M. Moffat	Album
<b>Studio 52</b>	<b>Contact Paul Higgins</b>	<b>(03) 417 7707</b>	<b>16, 24 Track</b>
2CAZ	Stan Triandes	Trevor Carter	Indy. C.D. E.P.
43 Beans	Peter Cupples	Trevor Carter	Single
Derek Tinwell	Trevor Carter	Trevor Carter	Album Empire Label
L.S.D.	Band	John Copeland	Album
Nu-Music Series 7	Trevor Carter	Trevor Carter	Various Compilation
Michelle Davie	Band	John Copeland	16 Track Demos
Roadkill	Band	John Copeland	16 Track Demos
<b>Studio RBX</b>	<b>Contact Ross Burton</b>	<b>(03) 429-6199</b>	<b>16,24,32 Track</b>
Andrew Stenford	Self Mark McDougall	Album	
Landcare Aust.	Ross Woodward	Mark McDougall/Matt Voigt	Comm. Serv. Project
Georgietta	Robert Severini	Mark McDougall	Album
Christine Sullivan	Jeremy Alsop	Mark McDougall	Mix
Tan Pumturmpon	John Justin	John Justin	Album
Tribal Scream	Themselves	Matt Voigt	Demos
52 Pick Up	Themselves	Matt Voigt	Demos
Linda Cable	Linda Cable	Mark McDougall	Album
Rough Diamonds	Garth Porter	Chris Corr	Film Sound Track
Painters & Dockers	Craig McArthur	Mark McDougall	O/Dubs
Paul Gibbs	Self	Mark McDougall	Album
Copping Severini/Brady Fitzgerald		Themselves	Various Jingles
<b>Western Australia</b>			
<b>Bonsai Recording Studio</b>	<b>Contact Tom Thorpe</b>	<b>(09) 349 6029</b>	<b>24 Track</b>
Andrew Breen	Tom Thorpe	Tom Thorpe	Demo
Keith McDonald	Tom Thorpe	Tom Thorpe	Jingle
Cliff McHane	Tom Thorpe	Tom Thorpe	Drum Tuition C.D.
Jeff Brownrigg	Tom Thorpe	Tom Thorpe	Album Demo
<b>Planet Sound Studios</b>	<b>Contact John Villani</b>	<b>(09) 382-2211</b>	<b>24,32,48 Track</b>
Fahrenheit	Matt Branton	Les Williams	Demos
G. Brownrigg	John Villani		Album
Cupid's Dead	J.V. & Band	John Villani	E.P. Mix Down
D.M.3	D. Mariani	John Villani	Single Mix

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## NEWS

from page 29  
more engineering work back in the States in Chicago with producer Mike Chapman. So back he went. Daniel Denholm is currently producing/engineering demos for 'Relic of Mary-Lou'. And a big welcome to engineer Colin Simkins who has recently joined the ranks of UNM. Currently completing a personal project Colin will be working on various projects throughout the remainder of 1993. Contact Gina Karpman on (02)953-0332.

**Grevillea Recording**, Queensland, have just installed a 'Sadie' Digital Hard Disc Editing system, 8 tracks of digital audio. The system has already made itself useful for several CD comps. Contact Malcolm on (07)262-8422.

**JMF Sound Studio**, Bankstown NSW,

have had the pleasure of working with children this month as well as Dave and Brendan from UNM. This particular act are 'Marie & Christina' ages nine and eleven and Ralph Esther of JMF tells me they have already had TV success on both 'Ernie and Denise' and 'Alan Jones Breakie Show'. Call Ralph on (02)790-4097.

**Studio 52 Recordings**, Collingwood Vic., Paul Higgins has finally hit the big 30, but certain people feel he has looked older than this for the last five years anyway. Gee Paul, with comments like that from your friends who needs enemies. You can contact the old man on (03) 417-7707. **HAPPY BIRTHDAY PAUL.**

**Charing Cross Studio**, Bronte NSW, has refitted and rewired the control room to standardised patchbays. They have also added a 32ch. Yamaha PM2000 as a clean monitor mixer while

the Neve is tracking. Integration allows a 56ch. desk at mixdown. The latest outboard inclusions are: Lexicon Prime Time, Bell Flanger, Klemm Tape Echo (Valve), Urei 1178 and 546 Dual parametric and an EXR Exciter.

Charing Cross would also like to invite everyone to an open day at The Charing Cross Street Fair on Sunday 31 October. The Studio will be having an Open Day to celebrate the annual event and you are welcome to drop in from 12Noon till 6.00PM. Give Gordon Hervey a call on (02)387-8362.

**Vicki Watson Management**, Sydney NSW, has had David Price in at that studio with the elusive name - is it Rich or Meridian - and at Megaphon producing/engineering an EP for 'Baby Sugar Loud' with Doug Roberts mixing. David has also recorded and mixed an album for 'Parkside Killers'. Contact Vicki on (02)564-2383.

# 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.

## MISTAKES

- Polydor Records Australia's main phone number **should** read: (02)581 1399, *not* (02)581 1391, as it appears currently.
- Peter Noble Entertainment Productions' phone number **should** be: (066) 872 033, *not* (066) 853 560, as it appears in the Directory.
- Suirauqa Entertainment Pty Ltd has the wrong phone and fax numbers listed on page 41 in Concert Production. The numbers **should** read: **Phone/fax:** (02) 742 6178 *and* Managing Director's name **should** read: **Warren Peryman** (only one r in the surname)
- The phone number listed for Combined Creative Services on p. 89 is incorrect. It **should** read: (02) 555 1966

## CHANGES

- The contact for CAAMA is now **Sonette Johnson**, replacing Mark Manolas and Murray McAlister in each CAAMA listing (p. 27, 104, 116 and 150 in the Directory)
- **Showfreight** have new phone and facsimile numbers, (although the address remains the same) **Telephone:** 352 9999 **Facsimile:** 352 9966
- **Arena Technical Services** have moved to: Unit 7/67 Lords Road Leichardt NSW 2040. **Telephone:** (02) 564 5144 **Facsimile:** (02) 564 5081
- Sandra Alpert replaces Sue Ristovski as Editor of **Beat** magazine, on page 73 of the Directory.
- **Ken O'Brien** has been appointed National Publicity Manager at Sony Music. **Chris Moss** is now Director of Marketing, for Australian

acts, Columbia and Epic and he is also overseeing Publicity and Promotions. **Steve Millard** is Marketing Manager for Epic and **John Sackson** is looking after Columbia. **Andy Yavasis** has been appointed Director of Marketing at Sony Music International (Asia). Sony Music have recently opened a Taiwanese Affiliate in Taipei headed by **Mathew Allison**. **Chris Bent** has been appointed Manager Special Projects back here in Australia. **Jane Rose** National Publicity Assistant at Sony Music's head office in Sydney has left.

- **Gerry Pitel**, formerly BMG, has been appointed National Sales Manager at Group Leisure.
- **George Buschman** has been appointed General Manager of Triple M. **Ian Grace** has resigned after eight years as programmer of the stations in the Triple M group.

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**Robert Goldman**, formerly Phillips Electronics, is now Sales Director.

• **Jeff Chandler** has ceased his management of James Blundell. Blundell will remain with Kevin Jacobson Management, but have a new personal manager. **Chandler** is still managing Lee Kernaghan and has signed up country artist Colin Buchanan.

• **Maria Brandao** has returned to work on special projects at Immedia! PR, after a stint at Westside Records.

• **Russell Pilling** is taking a break from Damien Gerard studios. Working in his absence are engineers: Colin Wright and Josh McLeod.

• **The Choirboys** have parted from Kathy Howard Management and are managing their own affairs and can be contacted through their company Big Bad Music (02) 809 2537. Kathy now manages **Happy House** who moved over from Vicki Gordon..

• **Bob Alexander**, Company Secretary to MCA Music has left for the U.K.

• Sydney head office of the **Australian Broadcasting Authority** has moved to a new address: Level 15, Darling Park - 201 Sussex Street, Sydney, 2000  
**Phone:** (02) 334 7700  
**Fax:** (02) 334 7799

• **Brett Oaten** is no longer managing The Welcome Mat.

• **Leosong Music** and **Songseekers**

have combine to form the **Leosong Music Group** moving to new premises: 6th Floor, 350 Kent Street Sydney NSW 200.

**Phone:** (02) 299 5966

**Fax:** (02) 299 3059

New Managing Director is Phil Mortlock, formerly Managing Director of East West Records.

• **Adrian Bohm Productions** has moved to: 44 Fourth Avenue St Peters SA 5069 (phone and fax numbers are the same; Ph: (08) 363 0212, Fx: (08) 363 1231)

• **Jennifer Pascoe** has left ARIA and is replaced by Nick Hampton.

• **Roger King** (The Department of Knowing) is no longer managing Dave Dobbyn and G. W. McLennan.

• **Morag White** has been appointed to head promotions at Larrikin Entertainment. **Karen Quinn** will work with Morag White and handle production scheduling. **Dorothy Platt** (previously EMI) will supervise royalties, publishing and distributed label disbursements. **Michael Daly** has been appointed Reggae co-ordinator and **Maryana Bullmore** to oversee recorded book catalogue.

• **Dave Penn**, formerly Polygram, has been appointed State Manager at BMG.

• **Alex Coroneos** has been appointed Castle's General Manager for Sales & Marketing.

• **Theo Tambakis** is no longer Managing Director of Concept Records.

• **Bernie Gilbert** former Music Controller of Chandlers Music has left.

• **Dobe Newton** has been appointed General Manager of Victorian Rock Foundation.

• **Ian Johnstone** has replaced Jessica Du Crou as the Talent Booker for the Lansdowne Hotel.

• **Mark Pope**, formerly Sony, has been appointed Director of A&R & Marketing for Australian Artists at East West. **Alan Robertson** is now Label Manager.

That's it until next month!

Alison Bruniges, A.M.I.D. Editor.

#### ABOUT A.M.I.D.

The **Australian Music Industry Directory** is published in **JULY** and **JANUARY** each year. Listings are **FREE**, one per company or individual, and all listings are qualified.

Deadline for the January issue is **OCTOBER 15th**, or a \$50 late fee applies. Fax your listing to: (02) 211-5938, or mail: Immedia!, 3 Rose Street Chippendale NSW 2008. Call them on (02) 212-6677.

**AMID** is available free to LISTED companies and individuals, or for \$10 per copy from: Immedia, SA Music Association, Victorian Rock Foundation, WAMIA, music Ind. Assoc. of Qld, and Showtravel in Auckland.

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# BLUES BROS

*Catriona Forcer talks about Sound design on the run, with Jim Blackfoot in Sydney.*



**S**ound designer for the Blues Brothers show currently playing at Sydney's Metro Theatre is the well known Jim Blackfoot whose career began back in 1978 doing film sound for a studio. He then teamed up with Kirk Pengilly and Tim Farriss to start a demo and rehearsal studio together. Out of that demo/rehearsal studio INXS were created. Other live touring work to Jim's credit include Anne Kirkpatrick and eight years with Mental As Anything. Eventually Jim branched out into theatre work in 1988 working with David Atkins and his theatre productions. Since then he has done all David Atkins shows and recently he has picked up the Paul Dainty productions. Prior to The Blues Brothers, Jim was working on Hot Shoe Shuffle (currently also running at Adelaide) and touring with Wendy Matthews.

Unlike with the lighting, the sound design was not evolved from previous productions.

"They sent basic requirements which showed you what equipment they used in previous shows but didn't really tell us how it worked within the production," Jim explained. "We were hoping for a simplified production because this is going to have such an extended run, we would be able to set up a system that one person would be capable of operating. But once we actually got the director and the choreographer out here we discov-

ered there was so much movement on stage that you couldn't possibly satisfy all the monitoring requirements from a front of house position. It was just too busy. So we've had to alter the design to suit the venue and to suit the artistic requirements. Basically it was redesigning it. This particular room has an odd shape, a low ceiling on one side and a high floor on the other side and it has it's own peculiarities. Plus you have quite a loud band on stage and fairly extensive monitoring for a theatre set up - there are ten channels of foldback running up on stage so there are ten different mixes. It's probably more of a rock'n'roll show than a theatre show although having said that it's still in the constraints of being in the theatre."

The stage set up is very clean with no visible monitoring and all the principle's mics and the backing singers mics are all radio mics as are the guitar and the base player. This gives the performers a lot of freedom to move around which is vital.

"It was a bit of a chore designing a system to be totally hung in this area particularly because the ceiling can't support too much weight," said Jim. "We had to be fairly critical on where we could put our speakers and how much we could put up. The room doesn't do many pleasant things for the sound, we've had to put delay stacks in various points. The sound we are after is a sound that has a lot of punch to it without being too loud in any

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particular spot. It's taken a fair amount of work with all the different aspects of this room to get an even sound from front to back. It also changes quite dramatically once the crowd comes in so it's taking quite a lot of adjusting and readjusting as the performances go along, then making a note of where these particular settings are for when you have half a house or a full house. It actually changes the blend of the mix from the front to the back so we've got a mix for just about all occasions in here!"

Front of house there is a Yamaha PM3000 mixing desk with virtually a compressor on every vocal channel and a Meyer speaker system - MSL's at the front, 500's at the back and 650 subs. JBL trapezoid boxes are used as the centre fill which is basically just vocal and on foldback there are a couple of LP wedges for the drums and keyboards. More JBL trapezoid boxes are also used for monitoring.

"I wanted to go for a total Meyer system for front of house just to keep all the processing the same," Jim added. "In the case of the foldback requirements it was really a matter of what we could hang in that spot that would do the job. A lot of it was weight versus punch and clarity so we had to make some sacrifices. I would have preferred to put UPA's up in the ceiling but the weight factor would have killed us. As with all these things there's an ideal design and there's a compromise design and it generally tends to lean towards the compromise design. I think we've done a reasonable job in here and certainly the musicians seem happy enough."

Rehearsals proved trying with the directors pushing to see how far they could go with movement of the characters and Jim having to chase them around with the foldback needs as they moved from one section of the stage to another. Jim was constantly modifying the system as all the new choreographic bits came into the show until it got to a point where he said enough was enough. By opening night it was just a matter of fine 'tweaking' as bands tend to play that much harder with an audience.

Jim was using a new radio mic system - the Vega 200 Meg system which is brand new to Australia. "We had the initial couple of days of tweaking and squeaking problems, making sure they had the right inserts and what

have you," he said. "Once we had that sorted out it's been rock solid and we haven't had a problem."

All of the audio equipment and the bulk of the keyboard setup was supplied by Sound On Stage who were very instrumental in setting the whole thing up and tuning the system. Jim wanted to give special thanks to Michael White (owner), Barry Meir (maintenance) and John Ryder (foldback/installation). At the moment Jim plans to stay with the show as operator for the entire Sydney season which should be until the end of October. Then he'll install the show into Melbourne's Comedy Theatre and most likely get an operator in to run the shows.

"I'm always trying to get my nose into any other theatre show that's coming to town but there's always a pretty ferocious bidding war over those at the moment," said Jim. "You're never quite sure if you've got the show or not until the last possible minute. Sometimes I miss touring especially the freedom you have doing purely music shows as opposed to theatrical shows. In theatre the discipline is the key ingredient in making sure things happen precisely night after night. I enjoy the discipline but I also miss the spontaneity of a rock tour. I don't miss the hours quite so much, it's a lot easier on your body to be doing a theatre show than a pub and club tour of Australia."

"There are specific shows which I enjoy operating and this is one of them as I love the music and the people have been fantastic to work with. I'm enjoying every minute of it but come four months down the track and the edge is taken off somewhat. But if you keep yourself involved enough and critical enough of the sound it tends to transcend what you're actually listening too and you don't become bored by it. You think of it as something that has to come across and you think of the different variations of it, listening to what the room does to it and how you can make it sound as consistent as possible. It's a frame of mind you get into, you switch off from the repetitiveness and try concentrate on what you can do something about."

LIGHTING BLUES BROS .... (See next page)

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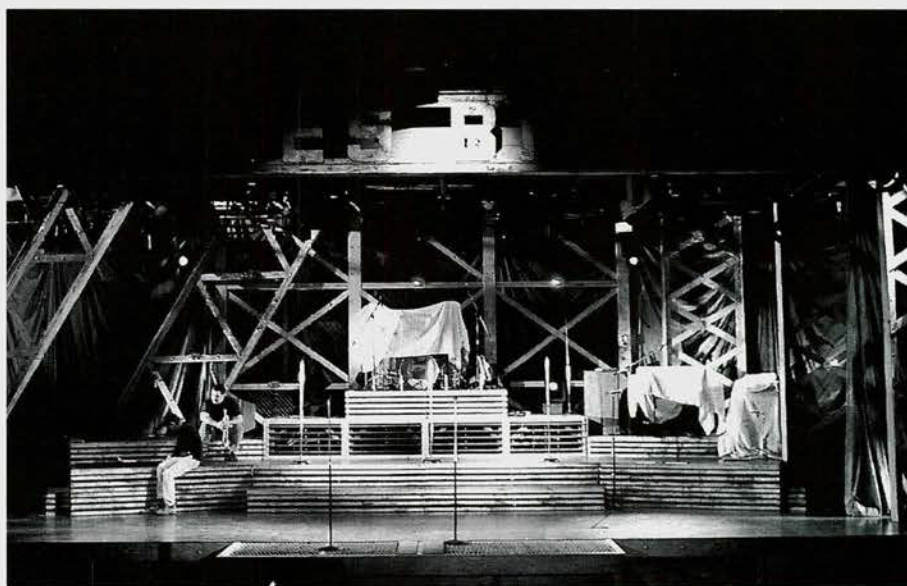
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Stage set at the Metro in Sydney

## Blues Bros Lighting

By Catriona Forcer

The lighting for the show was designed by Patrick Woodroffe who designed the original show in London. Patrick is famous for his monster designs for acts such as Tina Turner, Bryan Ferry, Erasure and most notably The Rolling Stones Steel Wheels tour. Patrick came over to Sydney to install his design into the Metro Theatre where he was assisted by Dave Harding programming the Vari\*lites.

By a strange twist of fate, the entire lighting rig is operated through a Vari\*lite Artisan by Tim Newman who was recently profiled by Connections at The Rocky Horror show. In that article Tim sung the praises of the Morpheus Par Command system over a Vari\*lite system. Little did he know that a few weeks later he would be sent to Vari\*lites to train as an operator for The Blues Brothers. Naturally he came in for a fair bit of good natured riling by the guys at Vari\*lite. Tim got the job as he works for The Paul Dainy Organisation and he was approached whilst the Rocky Horror show was still running.

"I did a basic two week course at Vari\*lite," said Tim. "There are different levels of technical involvement, some people do whole month courses and learn all about the insides of power supplies and stuff like that. I don't have time to work on electronics equipment here so I just change them over, change the main parts inside them. It's a good system that is well thought through.

The rig consists of fourteen VL2b's, nine in the air and five dotted around on the floor on the side. There are 106 par cans, 82 in the air and the rest behind the set for cyc lighting and blinders through the set. Also there are twelve Colour Whizzes, an oil cracker and two smoke machines.

Built into the set are a series of bulkheads which are typical of Patrick Woodroffe. An elevated section of the stage has a wall of louvres facing the audience which can open and shut to reveal par cans and smoke machines. It's quite a straightforward rig with a basic four colour wash. The show is run through the Artisan with two Vari\*lite dimmer interfaces which makes it a bit easier.

"I believe Patrick redesigned the whole show for Australia," Tim told me. "I know they had VL1's in London which we don't have in Australia, we're using VL2b's. They had a different set as well. Patrick was good to work with, he's very generous and very relaxed as well. The programming took about a week, on and off, over rehearsals mainly. There were a couple of days straight plotting and touch ups over rehearsals, changing as things came together. It's really quite a simple show which I think is one of its appeals."

"The problem with the theatre is the lack of height in the roof, it's a very small venue and the stage space is very small. It must get very hot onstage. There's no room for spares, I've got my spare parts in cupboards under stairways out front. There's a lot of tightness involved just getting in here. Other than that the venue itself, everything is there although not all of it works. We haven't used any of the house patching system but bought in Jands looms. All the lighting equipment is from Jands."

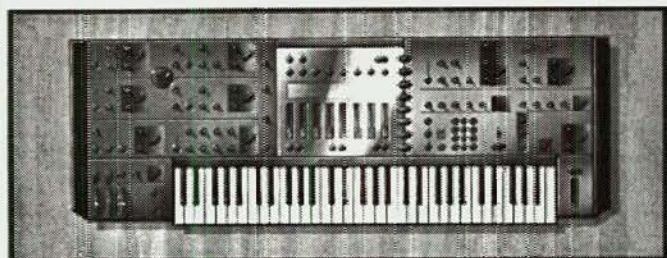
The show is a pretty fast one for Tim to run although there are a few slow numbers. I asked Tim if he had anything to say about Vari\*lite now he had worked with them. "They work," he stated. "And that's a compliment for a moving light."

# Music Technology

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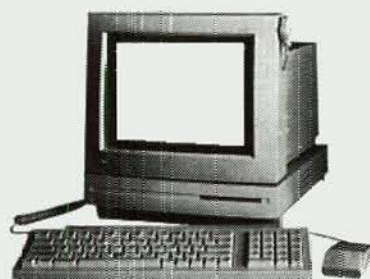
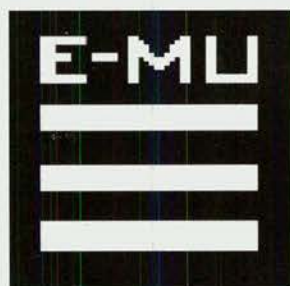
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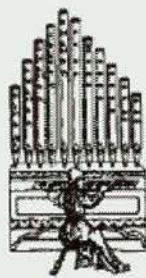


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C402B	CONDENSOR	INSTRUMENT	2.5Hz/20KHz	CARDIOD	N/A	PHANT/B9	160
C406B	CONDENSOR	ELEC. INST	20Hz/20KHz	HYPER	N/A	PHANT/B9	250
C407B	CONDENSOR	SPEECH/VOX	20Hz/20KHz	OMNI	N/A	PHANT/B9	130
C408B	CONDENSOR	PERCUSSION	80Hz/20KHz	HYPER	N/A	PHANT/B9	230
C409B	CONDENSOR	WIND/Rain?	20Hz/20KHz	HYPER	N/A	PHANT/B9	240
C410B	CONDENSOR	HEADSET	20Hz/20KHz	HYPER	N/A	PHANT/B9	350
<b>BALANCED</b>							
C401	CONDENSOR	GIUITAR	10Hz-10KHz	FIGURE 8	N/A	PHANT/B9	210
C402	CONDENSOR	INSTRUMENT	2.5Hz/20KHz	CARDIOD	N/A	PHANT/B9	200
C406	CONDENSOR	ELEC. INST	20Hz/20KHz	HYPER	N/A	PHANT/B9	300
C407	CONDENSOR	SPEECH/VOX	20Hz/20KHz	OMNI	N/A	PHANT/B9	220
C408	CONDENSOR	PERCUSSION	80Hz/20KHz	HYPER	N/A	PHANT/B9	280
C409	CONDENSOR	WIND	20Hz/20KHz	HYPER	N/A	PHANT/B9	290
C410	CONDENSOR	HEADSET	20Hz/20KHz	HYPER	N/A	PHANT/B9	450
<b>BLUE LINE SERIES</b>							
SE300B	PREAMP	PREAMP	20Hz/20KHz	N/A	N/A	PHANTOM	410
CK91 CAP-	CONDENSOR	VOCALS	20Hz/20KHz	CARDIOD	N/A	USES SE300	450
CK92 SULES	CONDENSOR	VOCALS	20Hz/20KHz	OMNI	N/A	USES SE300	460
CK93	CONDENSOR	VOCALS	20Hz/20KHz	HYPER	N/A	USES SE300	450
CK94	CONDENSOR	VOCALS	20Hz/20KHz	FIGURE 8	N/A	USES SE300	890
CK98	SHOTGUN	VOCALS?	20Hz/20KHz	Directional	N/A	USES SE300	670
<b>TRI POWER SERIES</b>							
D3400	DYNAMIC	INSTRUMENT	80Hz/20KHz	CARDIOD	NORMAL	XLR CABLE	380
D3500	DYNAMIC	INSTRUMENT	80Hz/20KHz	CARDIOD	NORMAL	XLR CABLE	410
D3600	DYNAMIC	INSTRUMENT	20Hz/22KHz	CARDIOD	NORMAL	XLR CABLE	660
D3700	DYNAMIC	VOCALS	60Hz/18KHz	HYPER	NORMAL	XLR CABLE	290
D3700S	DYNAMIC	VOCALS	60Hz/18KHz	HYPER	NORMAL	XLR CABLE	310
D3800	DYNAMIC	VOCALS	40Hz/21KHz	HYPER	NORMAL	XLR CABLE	460
D3900	DYNAMIC	VOCALS	40Hz/22KHz	HYPER	NORMAL	XLR CABLE	510
<b>AMS. Made in U.K.. From AUDIO SERVICES CORP. 02-901-4455</b>							
ST-250	STER.COND	FILM/B'CAST STUDIO	20Hz/20KHz	INFINITELY VARIABLE	N/A	SEPARATE REMOTE	505¢
<b>AMS. Made in U.K.. From SYNCROTECH 02-417-5088</b>							
ST-250	STER.COND	FILM/B'CAST STUDIO	20Hz/20KHz	INFINITELY VARIABLE	N/A	SEPARATE REMOTE	505¢
SOUNDFIELD	STER.COND	STUDIO	20Hz/20KHz	INFINITELY VARIABLE	N/A	SEPARATE REMOTE	9,000
<b>Countryman Made in USA. PRODUCTION AUDIO SERVICES 03-852-8900</b>							
ISOMAX 2 O	ELECTRET	INSTRUMENT	20Hz/20KHz	OMNI	N/A	PHANTOM	495
ISOMAX 2 B	ELECTRET	INSTRUMENT	50Hz/20KHz	BIDIRECT	N/A	PHANTOM	495
ISOMAX 2 C	ELECTRET	INSTRUMENT	50Hz/20KHz	CARDIOD	N/A	PHANTOM	495
ISOMAX 2 H	ELECTRET	INSTRUMENT	50Hz/20KHz	HYPER	N/A	PHANTOM	495
ISOMAX 3 O B.C.H	SAME AS ABOVE EXCEPT ON 3 GOOSENECK SIZES						795
ISOMAX 4	ELECTRET	LECTURN	70Hz/18KHz	HYPER	N/A	3 LENGTHS	795
TVH	ELECTRET	VOCAL	70Hz/18KHz	HYPER	N/A	PHANTOM	750
HEADSET	ELECTRET	VOCAL	20Hz/20KHz	OMNI	N/A	PHANTOM	585
HEADSET	ELECTRET	VOCAL	20Hz/20KHz	HYPER	N/A	PHANTOM	585
EM-301	ELECTRET	CONFERENCE	70Hz-15KHz	OMNI	N/A	RESISTS	
OPTIONAL BATTERY SUPPLIES AVAILAELE FOR ALL MODELS							
<b>ELECTRO-VOICE. Made in USA. Distributed by MARK IV AUDIO. 02-E48-3455</b>							
MC100	DYNAMIC	VOCALS	40Hz/14KHz	CARDIOD	NORMAL	SWITCH	149
MC150	DYNAMIC	VOCALS	30Hz/15KHz	N/A	NORMAL	SWITCH	179
MC200	DYNAMIC	VOCALS	N/A	CARDIOD	N/DYM	SWITCH	275
BK-1	CONDENSOR	VOCALS	50Hz/18KHz	CARDIOD	NORMAL	SWITCH	396
635A	DYNAMIC	B'CAST	80Hz/13KHz	OMNI	NORMAL	FIELDWORK	429
DL42	DYNAMIC	B'CAST	50Hz/12KHz	HYPER	NORMAL	FILM/TV	2,295
RE20	DYNAMIC	B'CAST	45Hz/18KHz	CARDIOD	NORMAL	GREAT BASS	1,695
RE27 N/D	DYNAMIC	B'CAST	45Hz/20KHz	CARDIOD	N/DYM	ROLLOFF SW	1,845
RE38 N/D	DYNAMIC	B'CAST	25Hz/20KHz	CARDIOD	N/DYM	16 E.Q's	1,265
MODEL	TYPE	Primary Use	Frequency Resonse	Pattern	Magnet Type	Notes	Price INC TAX
RE45 N/D	DYNAMIC	INTERVIEW	50Hz/15KHz	CARDIOD	N/DYM	SHOTGUN	965
CH230	CONDENSOR	THEATRE	30Hz/20KHz	CARDIOD	NORMAL	HIGH-SENS	599
N/D 857B	DYNAMIC	VOCALS	25Hz/22KHz	SUP/CARD	N/DYM	TOURING	895
N/D 757B	DYNAMIC	VOCALS	25Hz/22KHz	SUP/CARD	N/DYM	ROLL-OFF	855
N/D 457B	DYNAMIC	VOCALS	25Hz/21KHz	HYPER	N/DYM	LOW FEEDBK	645
N/D 357B	DYNAMIC	VOC/HARMON	25Hz/20KHz	SUP/CARD	N/DYM	ALSO HORNS	430

**NEXT MONTH: AMPLIFIERS, DIMMERS. Deadline 15th September**

# Buyers Guide

Microphones.

All prices are the top RETAIL price, and INCLUDE sales tax.

N/D 257B	DYNAMIC	VOCALS	35Hz/19KHz	CARDIOD	N/DYM	GIUITARS	299
N/D 408B	DYNAMIC	DRUMS	30Hz/22KHz	SUP/CARD	N/DYM	VERY SMALL	645
N/D 308B	DYNAMIC	KICK	40Hz/20KHz	CARDIOD	N/DYM	ALSO HORNS	535

**PEAVEY. Made in USA. Distributed by AUSTRALIS MUSIC. 02-938-3456**

PV-HI Z	DYNAMIC	VOCALS	70Hz/14KHz	CARDIOD	NORMAL	W/SWITCH	99
PV-LO Z	DYNAMIC	GENERAL	50Hz/14KHz	CARDIOD	NORMAL	W/SWITCH	99
PVM 38	DYNAMIC	VOCALS	50Hz/16KHz	CARDIOD	NORMAL	W/SCREEN	179
PVM 41	DYNAMIC	INSTRUMENT	40Hz/16KHz	HYPER	NORMAL	W/SCREEN	199
PVM 80	DYNAMIC	VOCALS	50Hz/16KHz	HYPER	N/DYM	W/SCREEN	199
PVM 480	CONDENSOR	VOCALS	40Hz/20KHz	SUP/CARD	NORMAL	FLIGHT CASE	299
PVM 580	DYNAMIC	VOCALS	40Hz/20KHz	HYPER	N/DYM	FLIGHT CASE	299
PVM 535	DYNAMIC	VOCALS	40Hz/16KHz	CARDIOD	NORMAL	FLIGHT CASE	299
PVM 520	DYNAMIC	GENERAL	45Hz/19KHz	CARDIOD	NORMAL	EXC. KIK MIC	379
VCM 2	CONDENSOR	O'HEAD	50Hz/20KHz	UNI	NORMAL	CHOIRS ETC	299
PM-16S	CONDENSOR	PODIUM	50Hz/20KHz	UNI	NORMAL	PHANT. PWR	329
PSM-2	CONDENSOR	SURFACE	50Hz/20KHz	HALF/CARD	NORMAL	BOARDROOM	369
PEL-20	CONDENSOR	LAVALIER	30Hz/15KHz	OMNI	NORMAL	LAPEL MIC	399
PEL-25	CONDENSOR	LAVALIER	30Hz/15KHz	UNI	NORMAL	LAPEL MIC	399

**PSC. Made in USA. From AUDIO SERVICES. 02-901-4455**

MILLIMIC	N/A	LAVALIER	40Hz/16KHz	OMNI	NORMAL	PIGTAILS	192
MILLIMIC	N/A	LAVALIER	40Hz/16KHz	OMNI	NORMAL	W/ACC/PSU	336

**SANKEN. Made in JAPAN. AUDIO SERVICES. 02-901-4455**

CMS-7S	CONDENSOR	STUDIO	50Hz/20KHz	UNI, HYP, F8	NORMAL	108dB RNGE	3,920
COS-11	LAVALIER	FIELD	20Hz/20KHz	OMNI	NORMAL	PHNTM/BAT	590

**SENNHEISER. Made in GERMANY. Distributed by SYNTEC INTERNATIONAL. 02-417-4700**

**BLACKFIRE SERIES**

511	DYNAMIC	VOCALS	50Hz/18KHz	CARDIOD	NORMAL	LIGHTWGHT	199
512	DYNAMIC	VOCALS	50Hz/18KHz	CARDIOD	NORMAL	W/SWITCH	229
515	DYNAMIC	VOCALS	50Hz/18KHz	SUP/CARD	NORMAL	LIGHTWGHT	259
516	DYNAMIC	VOCALS	50Hz/18KHz	SUP/CARD	NORMAL	W/SWITCH	289
518	DYNAMIC	VOCALS	50Hz/16KHz	CARDIOD	NORMAL	—	299
509	DYNAMIC	DRUM/BASS	50Hz/15KHz	CARDIOD	NORMAL	—	389
527	DYNAMIC	VOCALS	50Hz/17KHz	SUP/CARD	NORMAL	—	399
521	DYNAMIC	VOX/INST	30Hz/17KHz	CARDIOD	NORMAL	MULTI-USE	549
530	DYNAMIC	PERSONAL	40Hz/16KHz	SUP/CARD	NORMAL	PROX. ADJST	549
531	DYNAMIC	VOCALS	40Hz/16KHz	SUP/CARD	NORMAL	W/SWITCH	599
541	DYNAMIC	VOX/INST	30Hz/20KHz	SUP/CARD	NORMAL	MULTI-USE	849
5032P	CONDENSOR	VOCALS	70Hz/20KHz	SUP/CARD	NORMAL	—	899
5048P	CONDENSOR	VOCALS	40Hz/20KHz	SUP/CARD	NORMAL	HEADSET	699

**SHURE BROS. Made in USA. (JAPAN, Prologue range). Distributed by JANDS ELECTRONICS. 02-5-6-3622**

**GENERAL PURPOSE**

55SH II	DYNAMIC	VOCALS	50Hz/15KHz	UNI	NORMAL	Buddy Holly	419
515SD-LC	DYNAMIC	INSTRUMENT	80Hz/13KHz	UNI	NORMAL	W/SWITCH	119
520D	DYNAMIC	HARMONICA	100Hz/5KHz	OMNI	NORMAL	Green bullet	229
545SD-LC	DYNAMIC	INSTRUMENT	50Hz/15KHz	UNI	NORMAL	W/SWITCH	249
565SD-LC	DYNAMIC	VOCALS	50Hz/15KHz	UNI	NORMAL	W/SWITCH	259
588SD-LC	DYNAMIC	VOCALS	80Hz/13KHz	UNI	NORMAL	W/SWITCH	139
809	CONDENSOR	VOCALS	50Hz/20KHz	OMNI	N/A	Surface mic	459
819	CONDENSOR	VOCALS	60Hz/20KHz	UNI	N/A	PHNTM/BAT	459
839	CONDENSOR	VOCALS	80Hz/20KHz	OMNI	N/A	LAVALIER	299
849-LC	CONDENSOR	INSTRUMENT	40Hz/16KHz	UNI	N/A	PHNTM/BAT	349

**PROLOGUE SERIES**

10H-LC	DYNAMIC	INSTRUMENT	80Hz/10KHz	UNI	NORMAL	HI Z, W/SW	79
10L-LC	DYNAMIC	INSTRUMENT	80Hz/10KHz	UNI	NORMAL	LO Z, W/SW	69
12H-LC	DYNAMIC	VOCALS	80Hz/10KHz	UNI	NORMAL	HI Z, W/SW	89
12L-LC	DYNAMIC	VOCALS	80Hz/10KHz	UNI	NORMAL	LO Z, W/SW	79
14H-LC	DYNAMIC	VOCALS	40Hz/13KHz	UNI	NORMAL	HI Z, W/SW	109
14L-LC	DYNAMIC	VOCALS	40Hz/13KHz	UNI	NORMAL	LO Z, W/SW	99

MODEL	TYPE	Primary Use	Frequency Response	Pattern	Magnet Type	Notes	Price INC TAX
16L-LC	CONDENSOR	INSTRUMENT	50Hz/15KHz	UNI	NORMAL	W/SWITCH	159
22L-LC	DYNAMIC	VOCALS	40Hz/13KHz	UNI	NORMAL	W/SWITCH	99
24L-LC	DYNAMIC	VOCALS	40Hz/13KHz	UNI	NORMAL	—	109
PE86-LC	DYNAMIC	VOCALS	50Hz/15KHz	UNI	NORMAL	—	289
<b>BG SERIES</b>							
BG 1.0	DYNAMIC	VOCALS	80Hz/12KHz	UNI	NORMAL	W/SWITCH	109
BG 2.0	DYNAMIC	VOCALS	80Hz/14KHz	UNI	N/DYM	W/SWITCH	169

## No 1 for microphones . . .



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# Buyers Guide

Microphones.

All prices are the top RETAIL price, and INCLUDE sales tax.

BG 3.0	DYNAMIC	VOCALS	60Hz/15KHz	UNI	N/DYM	W/SWITCH	249
BG 4.0	CONDENSOR	INSTRUMENT	40Hz/18KHz	UNI	N/A	W/SWITCH	399
BG 5.0	CONDENSOR	VOCALS	40Hz/18KHz	UNI	N/A	W/SWITCH	399
<b>BETA SERIES</b>							
BETA 57	DYNAMIC	INSTRUMENT	50Hz/16KHz	SUP/CARD	N/DYM	—	449
BETA 58	DYNAMIC	VOCALS	50Hz/16KHz	SUP/CARD	N/DYM	—	479
BETA 87	CONDENSOR	VOCALS	50Hz/18KHz	SUP/CARD	N/A	PHNTM	699
<b>SM SERIES</b>							
SM 2	DYNAMIC	VOCALS	50Hz/15KHz	UNI	NORMAL	HEADSET	499
SM 7	DYNAMIC	VOCALS	40Hz/16KHz	UNI	NORMAL	BROADCAST	309
SM 10A-CN	DYNAMIC	VOCALS	50Hz/15KHz	UNI	NORMAL	DRUM VOX	239
SM 11-CN	DYNAMIC	VOCALS	50Hz/15KHz	OMNI	NORMAL	LAVALIER	239
SM12A-CN	DYNAMIC	VOCALS	50Hz/15KHz	UNI	NORMAL	EAR PHONE	439
SM 18A-CN	DYNAMIC	SPEECH	150H/10KHz	UNI	NORMAL	DESKTOP	229
SM 48-LC	DYNAMIC	VOCALS	55Hz/14KHz	UNI	NORMAL	—	169
SM 485-LC	DYNAMIC	VOCALS	55Hz/14KHz	UNI	NORMAL	W/SWITCH	169
SM 57-LC	DYNAMIC	INSTRUMENT	40Hz/15KHz	UNI	NORMAL	—	239
SM 58-LC	DYNAMIC	VOCALS	50Hz/15KHz	UNI	NORMAL	—	299
SM 58-S	DYNAMIC	VOCALS	50Hz/15KHz	UNI	NORMAL	W/SWITCH	349
SM 59-LC	DYNAMIC	VOCALS	50Hz/15KHz	UNI	NORMAL	—	479
SM 62-LC	DYNAMIC	VOCALS	100H/10KHz	UNI	NORMAL	CONFERENCE	369
SM 63-LC	DYNAMIC	VOCALS	50Hz/20KHz	OMNI	NORMAL	INTERVIEWS	299
SM 63L-LC	DYNAMIC	VOCALS	50Hz/20KHz	OMNI	NORMAL	INTERVIEWS	339
SM 78EB-LC	DYNAMIC	VOCALS	50Hz/15KHz	UNI	NORMAL	INTERVIEWS	309
SM 81-LC	CONDENSOR	INSTRUMENT	20Hz/20KHz	UNI	N/A	STUDIO USE	889
SM 83-LC	CONDENSOR	VOCALS	80Hz/20KHz	OMNI	N/A	LAVALIER	529
SM 84	CONDENSOR	VOCALS	80Hz/20KHz	SUP/CARD	N/A	LAVALIER	—
SM 87	CONDENSOR	VOCALS	50Hz/18KHz	SUP/CARD	N/A	PHNTM	599
SM 89	CONDENSOR	—	60Hz/20KHz	HYPER	N/A	SHOTGUN	1849
SM 90A	CONDENSOR	INSTRUMENT	20Hz/20KHz	OMNI	N/A	BOUNDARY	629
SM 91A	CONDENSOR	—	20Hz/20KHz	UNI	N/A	BOUNDARY	629
SM 94-LC	CONDENSOR	INSTRUMENT	40Hz/16KHz	UNI	N/A	—	469
SM 96-LC	CONDENSOR	VOCALS	70Hz/16KHz	UNI	N/A	—	459
SM 98 A	CONDENSOR	INSTRUMENT	40Hz/20KHz	UNI	N/A	MINIATURE	569
SM 99-	CONDENSOR	LECTURN	80Hz/20KHz	SUP/CARD	N/A	6"/12"/18"	479
SM 99 SE	CONDENSOR	LECTURN	80Hz/20KHz	SUP/CARD	N/A	SIDE ENTRY	529
SM 102 BL	CONDENSOR	VOCALS	50Hz/18KHz	UNI	N/A	OVERHEAD	479
SM 102 WH	CONDENSOR	VOCALS	50Hz/18KHz	UNI	N/A	OVERHEAD	519
<b>VP SERIES</b>							
VP 64	DYNAMIC	VOCALS	50Hz/12KHz	OMNI	N/DYM	INTERVIEW	249
VP 88	CONDENSOR	VOCALS	40Hz/20KHz	UNI	N/A	STEREO MIC	2149
<b>SONY</b>							
C-800-G	JAPAN	SONY AUSTRALIA	02-887-666E				
C-800	TUBE COND	VOCALS	20Hz/18KHz	OMNI/UNI	N/A	V/HIGH QUAL	9,920
C-48	TUBE COND	INSTRUMENT	20Hz/20KHz	OMNI/UNI	N/A	V/HIGH QUAL	7,968
C-535P	CONDENSOR	INST/VOCAL	30Hz/16KHz	SWITCHABLE	N/A	LOW NOISE	1,898
C-536P	CONDENSOR	INSTRUMENT	30Hz/16KHz	UNI	N/A	PHNTM	910
ECM-672	CONDENSOR	INSTRUMENT	30Hz/16KHz	UNI	N/A	PHNTM	871
ECM-MS5	ELECTERET	CAMERA	50Hz/16KHz	UNI	N/A	SHOTGUN	845
ECM23F3PR	ELECTERET	ATMOSPHERE	70Hz/20KHz	MS,STEREO	N/A	STEREO MIC	1692
ECM-999PR	ELECTERET	GENERAL	20Hz/20KHz	UNI	N/A	LOW FILTER	429
F-720	ELECTERET	ATMOSPHERE	20Hz/20KHz	MS,STEREO	N/A	LOW FILTER	660
F-730	DYNAMIC	VOCALS	50Hz/13KHz	UNI	N/A	W/SWITCH	180
F-760	DYNAMIC	VOCALS	50Hz/13KHz	UNI	N/A	W/SWITCH	204
	DYNAMIC	VOCALS	50Hz/15KHz	UNI	N/A	W/SWITCH	540

**MICROTECH GEFELL. MADE IN GERMANY. DISTRIBUTED BY SOUTHBANK TRADING, (03) 399-7809.**

MV692M69	Condenser	Overheads, piano, instu.	30-18000Hz	Omni-directional	Capacitor	Gold sputtered dia.	1065
MV692M70	Condenser	Vocals, instru	40-18000Hz	Cardioid	Capacitor	W/switch	1116
MV692M71	Condenser	Vocals, instru	40-18000Hz	Cardioid	Capacitor	Twin diaphragms	1718
MV692M93	Condenser	Vocals, instru	20-20000Hz	Omni + 5dB	Capacitor	Gold dia.	1288
MV692M94	Condenser	Vocals, speech	40-18000Hz	Cardioid + 5dB	Capacitor	w/switch	1460
MV692UM70	Condenser	Vocals, wind instr	40-18000Hz	3 patterns	Capacitor	dual gold dia.	1704
PM860	Condenser	Vocals, acoustic inst	30-20000Hz	Cardioid	Capacitor	Ceramic capsule	2147
UM70S	Condenser	Horns, Vocals Percus.	40-18000Hz	3 pattern	Capacitor	M7 capsule	2748
UM92S	Condenser	All	40-18000Hz	3 pattern	Capacitor	Triode valve preamp	5311
M71S	Condenser	Soloists	40-18000Hz	Cardioid +4dB	Capacitor	Twin gold dia.	2061
M294	Condenser	Vocals, acout.gtr.O/H	40-18000Hz	Cardioid +5dB	Capacitor	Transformerless bel.	1925
M295	Condenser	O/H, toms, acou.instr	40-18000Hz	Cardioid	Capacitor	Transformerless	1925
M200	Condenser	O/H, Stereo recording	40-20000Hz	Cardioid	Capacitor	Transformerless	1803
M210	Condenser	O/H, stereo recording	40-20000Hz	Cardioid	Capacitor	Transformerless	1775
M270	Condenser	Live recording	40-20000Hz	Omni +5dB	Capacitor	Transformerless	1746

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# Buyers Guide

## Lighting Controllers.

All prices EXCLUDE sales tax (unless indicated), now 21%

### AE Australia (02) 896-4033

LCF4: Sound to light chaser, 64 patterns, fuse on each channel. 4ch, 260mmx 260mmx 90mm \$389 RRP (includes sales tax)

### Aladdin - from Phoenix Microtechnologies (08) 293-8752

Hardware & software for Amiga computers A600 & A1200. 48ch, DMX512, Non-volatile hard drive storage. General lighting control & multi-media. \$1595

### Aladdin Professional - from Phoenix Microtechnologies (08) 293-8752

Hardware & software for Amiga computers A2000, A3000 & A4000. 96ch, DMX512, Non-volatile hard drive storage. General lighting, moving lights, midi driven, multi media. \$3500

### Anytronics - from GUVT (07) 358-5022

ADP405: Auto display pak, 48 programs & auto, speed control, external pulse facility, 12-240V AC switching, 5a per channel, surface mount. 4ch, 305mmx 165mmx 65mm. For Shop, showroom, nightclub. \$455

J6: Strobe chaser, auto sensing, sequence or all flash, audio input, enable facility 8ch, +10V pulse control voltage, size 130mmx 212mmx 133mm. Strobe control \$324

Light System One: Rackmount lighting controller, 1 x 4 channel zone, 1 strobe output, 48 chase sequences, 4 channel sound to light, audio input. 4ch. 68mmx 483mmx 89mm, Nightclub. \$559

Light System Two: Features as per Light System One plus 8 switched outputs & additional 4 channel zone. 16 ch. Size 168mmx 483mmx 89mm. Nightclub \$830

J55: Mini desk, 6 channel, flash buttons, master level, blackout, requires +18 to +27VDC supply. 6ch Analogue, 40mmx 483mmx 133mm. For Conventional dimming \$429

### Avab - Distributed by Bytecraft. (03) 587-2555.

211: 24 masters, combined channel/master fader & channel group capability, 150 preset memories, timed or manual crossfade, help function, FX package, monitor & printer compatible. 72CH, digital output, SIZE: 635mmx 410mmx 135mm. RAM (battery backup) memory, for Theatre, studio. \$8000

202: 24 switchable channel/submaster faders, joystick fade speed control, FX package, 3.5" disk drive, optional IR remote, monitor & printer, 120 channel version available. 240ch, digital output, size: 635mmx 410mmx 135mm. RAM memory (battery backup). For Theatre, studio. \$15,000

202XP: Features as per 202 plus increased internal memory, advanced editor function, additional display pages, sequence restart capability, 6 built-in test functions. \$20,000

Expert Jr: 24 multipurpose faders with flash buttons, manual or times split, dipless crossfades, joystick for fade speed control, optional IR remote, 128 channel version available. 256ch, Digital output, size: 635mm x 410mmx 135mm. RAM memory (battery backup). for Theatre, studio. \$23-32,000

Mini Expert: Features as per Expert Jr, grandmaster, 7 user definable macro keys, optional remote panel, track ball & macro panel, 128 channel version available. \$32-40,000

Expert: Features as per Mini Expert, drives up to 4 monitors, 3 backup options including full tracking backup, 128/256/384 channel versions available. 512ch, Digital output, size 1060mmx 550mmx 150mm. RAM memory (battery backup) For Theatre, studio. POA

Expert XP: Features as per Expert plus with increased internal storage capacity and screen editor. POA

Viking VLC: Modular, multi-task capability, programmable special FX, fault detection & reporting, fully integrated colour change & automation, optional IR remote. 4000ch, Digital o/p, Modular, RAM memory (battery backup). For Theatre, studio. POA

### Axiom - Made by LSC Electronics. (03) 836-9111.

Axiom 12/24: Control board with 2 presets & wide function, 12 page memory timed fades, grab masters, LCD readout with edit wheel, midi, sound to light, RS232 port. 12/24 ch, DMX512 & analogue option, size: 520mmx 370mmx 105mm. Static memory (battery backed). For Touring concerts, small to medium theatres, small TV studios, nightclubs, etc. TBA

Axiom 24/48: Control board with 2 presets & wide function, 12 page memory timed fades, grab masters, LCD readout with edit wheel, midi, sound to light, RS232 port. 24/48ch, DMX512 & analogue option, size 735mmx 370mmx 105mm. Static memory (battery backed). For Touring concerts, small to medium theatres, small TV studios, nightclubs, etc. TBA

Axiom 36/72: Control boards with 2 presets & wide function, 12 page memory timed fades, grab masters, LCD readout with edit wheel, midi, sound to light, RS232 port. 36/72ch, DMX512 & analogue option, size 950mmx 370mmx 105mm. Static memory (battery backed). Touring concerts, small to medium theatres, small TV studios, nightclubs, etc. TBA

### Celco. Distributed by Lightmoves Technology. Call (02) 560-0000.

Navigator: Revolutionary operating concept with great features for integrating intelligent lights with dimmers. 96ch, DMX512 output, size 680mmx 430mmx 43mm. CMOS memory with Q card backup. For Production, touring. \$10,665

Pathfinder: A brother for Navigator, operates on its own or linked to Navigator via midi ports. 60ch, DMX512 output, size 680mmx 430mmx 43mm. CMOS memory with Q card backup. For Production, touring. \$7494

### Coemar. Distributed by Coemar DeSisti Australia. (03) 467-8666.

Samurai Controller: Dedicated controller for Coemar Samurai moving lights, will control up to 16 fixtures individually, instant access to all parameters of each fixture. 128 ch, Dedicated output. 495mmx 490mmx 100mm. RAM memory. \$8175

Microscan Controller: Dedicated controller for Coemar Microscan moving lights, will control up to 16 features individually, instant access to all parameters of each fixture. 96 ch, Dedicated output, 176mmx 440mmx 40mm. RAM memory. \$1600

### Compulite. Distributed by Coemar DeSisti Australia. (03) 467-8666.

Mini 3A/40: Memory lighting control system which delivers the optional features with every configuration, up to 864 channels, soft patchable to 960 dimmers, 40 controllers (sub masters). 400+ ch, Digital output, 590mmx 1160mmx 165mm. Flash memory. Theatre, studio. \$22 - 27,000.

Mini 3A/20 Memory lighting control system which delivers the optional features with every configuration, up to 864 channels, soft patchable to 960 dimmers, 20 controllers (sub masters) 400+ ch, Digital output, 590mmx 890mmx 165mm, Theatre, studio. \$20 - \$25,000.

Micron 3A/10 Memory lighting control system which delivers the optional features with every configuration, up to 864 channels, soft

patchable to 960 dimmers, 10 controllers (sub masters) 400+ ch, Digital output, size 420mmx 720mmx 110mm, Flash memory, Theatre, studio. \$13 - \$17,000.

Animator-72: Provides totally integrated control over all functions of 72 moving lights plus 512 channels of DMX devices such as dimmers, scrollers etc. 512 ch, Digital output, size 590mmx 1050mmx 170mm, Flash memory, \$36 - \$41,000.

Animator 48/512: Provides totally integrated control over all functions of 48 moving lights plus 512 channels of DMX devices such as dimmers, scrollers, etc 512 ch, Digital output, 590mmx 1050mmx 170mm, Flash memory, \$31 - \$35,000.

Animator 48/240: Provides totally integrated control over all functions of 48 moving lights plus 240 channels of DMX devices such as dimmers, scrollers, etc. 240 ch, Digital output, 590mm x 1050mm x 170mm. Flash memory. \$28 - \$32,000.

Animator 24/240: Provides totally integrated control over all functions of 24 moving lights plus 240 channels of DMX devices such as dimmers, scrollers, etc 240ch, Digital output, 430mm x 710mm x 130mm. Flash memory. \$20 - \$24,000.

Compact 24: Provides totally integrated control over all functions of 24 moving lights plus 210 channels of DMX devices such as dimmers, scrollers, etc. 210 ch. Digital output, 430mm x 710mm x 130mm. Flash memory. \$13,500 - \$17,000.

### Dynalite. Australian Made. Call (02) 564-1400.

Mini Chaser: Sound activated 3/4 channel x 600W chaser with simple or shadow chase. 4ch, 205mm x 250mmx 70mm. For Discos etc. \$357

F4 Flowbox: 24V chaser with 7 chase patterns & speed adjuster. 4ch, for Tubelight & Clilight. \$262

Studio 4: Controller/dimmer/chaser with flash and fade chase plus master & sound to light, 100W per channel. 4ch N/A, 200mmx 250mmx 100mm. Schools, small venues. \$961

Studio 12: 12 channel desk with 2 presets with masters, 4 channel chaser & separate control for flash & chase level. 12ch Analogue. 285mm x 355mm x 75mm. Schools, small venues. \$868

### Geni. Distributed by The Australian DJ Supply Co. (02) 564-2277.

TP2: Touch panel with 3 x 4 channel chasers, strobe control, dimming & audio input 12ch Analogue, 3RU tall, Nightclub. \$985 RRP

SR410C: Chaser with audio trigger, 5a/10a/channel with 4 x 240V sockets on back, comes with yoke for rigging. 4ch, 4RU. For Mobile DJ, bands, pub installs \$325 RRP.

### Jands. Manufacturer (Jands) & Distributor (ETC) (02) 516-3622.

ETC Microvision FX: Memory console, 200 memories, 512 dimmer softpatch, six submasters, disk drive, chaser, groupmaster wheel supplied complete with colour CRT, analogue input/output option. 125 ch, Digital, size 300 x 300 x 150. RAM (battery backed) memory. Theatre, studio, display. \$9995

ETC Expression: Memory console, 200 memories, 512 dimmer softpatch, 24 submasters, comprehensive FX, groupmaster wheel, 3.5" disk drive. 250 ch, Digital, 680mm x 400mm x 200mm, RAM (battery backed). Theatres, studios. \$40,000

Jands Stage 12: Control console, 2 presets & wide function for 24 channels, add/solo flash buttons for all channels & masters, chaser, unique grab faders for phantom 3rd

& 4th preset. 12/24 ch, Digital output, 434mm x 288mm x 80mm, RAM memory, for Schools, clubs, hire depts. \$996.

Jands Stage 24: Control console, 2 presets & wide function for 48 channels, add/solo flash buttons for all channels & masters, chaser, unique grab faders for phantom 3rd & 4th preset. 24/48 ch, Digital output, size: 705mm x 288mm x 80mm, RAM memory. Schools, clubs, hire depts. \$1412.

Event 24: Australia's leading consoles, 2 preset plus wide, easy user interface, EPROM memory & software upgrades, moving light friendly. 24/48 ch, Digital o/p, size: 690mm x 510mm x 110mm. RAM (battery backed) memory. \$5825.

Event 36: Control console, 2 preset plus wide, easy user interface, EPROM memory & software upgrades, moving light friendly. 36/72ch Digital o/p, 960mm x 510mm x 110mm. RAM (battery backed) memory. \$7495.

Event 48: Control console, 2 preset plus wide, easy user interface, EPROM memory & software upgrades, moving light friendly. 48/96ch, Digital, 960mm x 510mm x 110mm. RAM (battery backed) memory. \$9162.

Event 48 Plus: Control console, 2 preset plus wide, easy user interface, EPROM memory & software upgrades, moving light friendly. 48/96ch, Digital o/p, 1240 x 510 x 110. RAM (battery backed) memory. \$9995

Event 60 Plus: Control console, 2 preset plus wide, easy user interface, EPROM memory & software upgrades, moving light friendly. 60/120ch, Digital output, 1520mm x 510mm x 110mm. RAM (battery backed) memory. \$12,495

4Pak: 4 channel controller/dimmer flash buttons on all channels, chaser with audio speed control, total output 2400W. 4ch, Analogue. 290mm x 200mm x 125mm. \$746

ESPII 24: Control console, 2 preset with wide mode for 48 channels, 12 scene masters, chaser, crossfade & FX playback, options include analogue outputs, VDU & M card, 2 year warranty. 24/48 ch, Digital, 770mm x 610mm x 210mm RAM (battery backed) memory. Schools, clubs, theatre. \$4162

ESPII 48: Control console, 2 preset with wide mode for 96 channels, 12 scene masters, chaser, crossfade & FX playback, options include analogue outputs, VDU & M card, 2 year warranty. 48/96ch, digital output. Size: 1320mm x 610mm x 210mm. RAM (battery backed) memory. Schools, clubs, theatre. \$7500

### LSC Electronics. (03) 836-9111.

Focal: Modular control system offering 60 to 255 channels, 1000 scene memories, 100 sequences, crossfades & timed fades, softpatching, LCD readout, sized to customer requirements. 60 to 255ch, DMX512 analogue & output option, Static memory (battery backed). For TV studios, larger theatres. POA, variable models (modular).

Precept 12: Control board with 2 preset structure offering chase & scene storage facilities with user friendly operator programming. 12 ch, Analogue o/p, 485mm x 375mm x 70mm. Static (battery backed) memory. Suit Schools, small theatres, bands. \$1390

Precept 24: Control board with 2 preset structure offering chase & scene storage facilities with user friendly operator programming. 24ch, Analogue o/p, 770mm x 375mm x 70mm. Static (battery backed) memory, suit Nightclubs & scroller controller. \$2400

Precept + 36/72: Control board with 2 presets & wide function, 4 page memory, timed fades, sub masters, grab masters, full pre-view & edit facilities. 36/72ch, DMX512 o/p, 850mm x 645mm x 200mm. Static (battery backed) memory. Larger schools. \$5550

Precept + 48/96: Control board with 2 pre-

## Buyers guide

### LIGHTING CONTROLLERS.

All prices EXCLUDE SALES TAX.

sets & wide function, 4 page memory, timed fades, sub masters, grab masters, full preview & edit facilities. 48/96ch, DMX512 o/p. 1100mm x 645mm x 200mm. Static (battery backed) memory. Small to medium theatres \$6750

**Precept + 60/120:** Control board with 2 presets & wide function, 4 page memory, timed fades, sub masters, grab masters, full preview & edit facilities. 60/120. DMX512 o/p. 1350mm x 645mm x 200mm. Static (battery backed) memory. Suit Touring concerts \$8100

**Laser Chorus, Lighting Technologies, Light Processor, Lightwave Research, Mode Electronics.** All distributed by GUVT, (07) 358-5022, NZ: 9 638-9955.

**Laser Chorus: LR-VPC:** Viper helium neon laser controller, 32 programs, 3 user 64 step memories, beam enable, audio & analogue interface. 12ch, Analogue, 340mm x 482mm x 133mm. RAM memory. Viper/Laser Chorus \$4611

#### Lighting Technologies:

**DLS4000:** lighting controller, 4a per channel/240V, audio input, 20 sequence patterns, 8LED mimic, rate control. 4ch, size: 130mm x 350mm x 133mm. ROM. Nightclub, mobile. \$369

#### Light Processor:

**Q12:** Control board 2 submasters, analogue & DMX outputs, 120 scene memories, 12 level chase memories, multiple chase and scene mix, internal mic. 12ch, Both analogue and digital output. size 312mm x 483mm x 55mm. RAM memory. Conventional & moving light control. \$1723.

**Q24:** Control board: 2 submasters, analogue & DMX outputs, 240 scene memories, 24 level chase memories, multiple chase & scene mix. 24 ch. Both analogue and digital output, 312mm x 660mm x 65mm. RAM memory. Conventional & moving light control. \$3043

**Commander 2:** Rackmount, 4 zone x 4 channel, 8 switched effect outputs, dimming, crossfades, 16 patterns, 5 multizone patterns, programmable switched effects. 24ch, +10V output, 25mm x 483mm x 133mm. RAM memory. Nightclubs. \$2127

**434:** Rackmount, 3 zone x 4 channel, latch or flash each zone, external 4 channel pattern override for each zone, touch panel. 12ch, +10v output, 25mm x 483mm x 133mm. Nightclubs. \$1080

**System Sensor:** Rackmount, 12 channel switching, latch or flash, touch panel 12 ch +10V output. Size: 25mm x 483mm x 133mm. Nightclubs \$1063

**Program 8:** Rackmount switcher with master dimmer, 32 patterns, crossfades, audio input, touch panel. 8ch, +10V output, 25mm x 483mm x 133mm. RAM memory. Nightclubs. \$1307

**Program Sensor:** Rackmount controller, can be used in manual, program, scene or automatic modes, touch panel. 16 ch, +10V output, 25mm x 483mm x 133mm. RAM memory. Nightclubs. \$1250

**Program Scenefade:** Rackmount controller, 8 dimming & 8 switched outputs, 8 scene presets, fade or switch between scenes, manual or auto operation. 16 ch, +10V output, 25mm x 483mm x 133mm. RAM memory. Nightclubs. \$1307

#### Lightwave Research:

**LR-IBC-LCD:** Intellibeam/Trackspot controller addressing 24 individual fixtures via high resolution protocol, 891 scenes, 1024 presets accessible via analogue interface, LCD screen, SRAM card. Equiv 168+ ch. Digital protocol, size 269mm x 483mm x 179mm. Onboard RAM & ext SRAM card. Intellibeam/Trackspot only. \$7655

**LR-TSAC:** Trackspot special analogue controller, accesses 32 preset programs, 6 rate

& 4 audio modes, auto program, master intensity, LED display, fixture remote enable/disable & standby, no AC. Analogue o/p, size: 38mm x 483mm x 90mm. For Trackspot. \$666

**LR-TD12:** Programmable touch panel, 12-10V outputs, 120 matrix assignments, 10 chases of 127 steps each, real-time programming, midi compatible. 12 ch, Analogue o/p, 38mm x 483mm x 133mm. RAM memory. \$1599

**LR-EMC-LCD:** Emulator controller addressing 24 individual fixtures, 891 scenes, 1024 presets accessible via analogue interface, LCD screen, SRAM card. Digital output, 269mm x 438mm x 179mm. Onboard RAM & ext SRAM cards. For Emulators. \$7655

**DFC:** Dataflash Xenon flashlamp controller, 99 programs, intensity control, audio advance & modulate, analogue interface, comms port, power level select. 256ch Digital o/p, size: 380mm x 482mm x 133mm. RAM memory. Dataflash or Multiflash. \$2967

**DFC-Mini:** Dataflash mini controller, up to 93 programs, standby, rate, intensity, program, audio and flash controls. 12 ch, Digital, 60mm x 482mm x 89mm. ROM memory. Dataflash or Multiflash \$920

**CPC:** Colour pro controller, 891 scenes, page crossfade, music colour synthesis, master dim, editing functions, comms port, analogue interface. Equiv 48+ ch, Serial o/p. Size: 203mm x 482mm x 133mm. RAM memory. For Colour Pro. \$2920

#### Mode Electronics:

**UBSP:** 8 channel zero voltage switching of 240V AC, 4 channel latch flash facility. 8ch. 254mm x 356mm x 102mm. Nightclub. \$983

**SC1:** Single channel strobe controller, rate 1-15 per second, LED flash rate mon. \$212

**U44:XYZ:** 4 channel matrix controller, 8 program memory, matrix monitor display, program number display, audio input. 16ch, 254mm x 356mm x 102mm. ROM memory. Nightclub. \$2194

#### Pulsar. Universale Lighting & Audio. (075) 29-0688.

**Masterpiece 108:** 108ch, analogue & digital o/p, 355mm x 483mm x 150mm. Internal non-volatile memory with RAM card backup \$5800

**Masterpiece 48:** 48 analogue & digital o/p, 264mm x 483mm x 150mm. Internal non-volatile memory with RAM card backup. \$4300

#### ShowCAD. Distributed by Coemar De-Sisti Australia. (03) 467-8666.

Professional lighting control for IBM compatible PCs, infinite scene & sequence memory, unique rapid programming of automated fixtures, full modern support option 1024ch, Digital o/p, Hard disk memory \$5645

#### Strand Lighting. Distributed by Bytecraft, call (03) 587-2555.

**Mini Light Palette 90:** 24 overlapping individually programmable submasters, proportional patching to 1024 dimmers, 8 timed or manual playback, up to 999 FX, integral alpha-numeric keyboard, 3.5" disk drive. 576ch, Digital o/p, 1093mm x 651mm x 192mm. RAM (battery backup) memory. For Theatre, studio, \$40-50,000

**Light Palette 90:** 24/48 programmable submasters, proportional patching up to 1536 dimmers, dual 3.5" disk drive, separate electronics tower, optional full tracking backup & designer's console. 1536 ch, Digital o/p, 1093mm x 651mm x 192mm, RAM (battery backup) memory. Suits Theatre, studio. POA

**Gemini 2+:** Proportional patch to 384 dimmers, programmable FX, 24 simultaneous fades, 2 split crossfade playbacks, 8 overlapping submasters with inhibit, 80 group backup. 360ch, Digital o/p, 1020mm x 570mm x 250mm. RAM (battery backup) memory. Theatre, studio \$35-40,000

**Galaxy Nova:** Modular, theatre or TV version, controls up to 1536 dimmers, 10 or 20 submasters, programmable FX, fully integrated colour change & automation. 999 ch,

Digital o/p, Modular, RAM (battery backup) memory, Professional, theatre, studio. POA

**Lightboard M 96/24:** 4 proportional patches with 768 dimmers, up to 200 cue & FX memories, auto and manual playback, programmable FX, 3.5" disk divr, 24 submasters 96 ch, Digital o/p, 876mm x 269mm x 158mm. RAM (battery backup) Theatre, studio. \$13,000

**Lightboard M 96/48/24:** Features as per Lightboard M 96/24 with 48 faders & 24 submasters. 96 ch, Digital o/p, 876mm x 531mm x 196mm. RAM (battery backup). Theatre, studio. \$17-30,000

**Lightboard M 96/96/48:** Features as per Lightboard M 96/24 with 96 faders & 48 submasters. 96ch Digital o/p, 1486mm x 531mm x 196mm. RAM (battery backup) memory, Theatre, studio. \$17-30,000

**Lightboard M 144/144/24:** Features as per Lightboard M 96/24 with 144 faders & 48 submasters, up to 140 cue & FX memories 144ch, Digital o/p, 1690mm x 531mm x 196mm. RAM (battery backup) memory. Theatre, studio. \$17-30,000

**M24:** Compact memory system, up to 199 memories, fader wheel, blackout switch, manual or auto crossfades, blind plotting, monitor compatible, 72 channel/155 memories also available. 120ch, Digital o/p. 530mm 360mm x 190mm. RAM (battery backup) memory. Theatre, studio \$8-9,500

**M24 FX:** Compact stand alone 8 group control backup system, fader per group, chase, flash, sound to light FX, FX master. 120 ch, Digital o/p, 530mm x 360mm x 140mm. RAM (battery backup). Theatre, studio \$3000

**MX12:** 2 preset manual, 48 memories, flash button per channel, grandmaster, timed split crossfades, blackout switch, LCD display, programmable effects, printer & monitor compatible. 12ch, Digital o/p, 651mm x 285mm x 65mm. RAM (battery backup) memory. Schools, clubs, studios. \$2800

**MX24:** Features as per MX12 with 96 memories. 24ch, Digital o/p 912mm x 285mm x 65mm. RAM (battery backup) memory. Schools, clubs, studio. \$3800

**MX48:** Features as per MX12 with 192 memories. 48ch, Digital o/p, 822mm x 545mm x 137mm. RAM (battery backup) memory. Schools, clubs, studi. \$4800

**LX12:** 2 preset manual with flash button per channel, grandmaster, timed split crossfades & blackout switch, 12ch, Analogue o/p, 452mm x 285mm x 65mm. Suit Schools, clubs, studios. \$680

**LX24:** 2 preset manual with flash button per channel, grandmaster, timed split crossfades & blackout switch 24ch, Analogue o/p, 714mm x 285mm x 65mm. Suit Schools, clubs, studios. \$900

#### TAS. From Coemar De-Sisti Aust. (03) 467-8666.

**Mini Ultra Scan Controller:** Dedicated controller for Tas Mini Ultra Scan, will control up to 16 fixtures individually, instant access to all parameters of each fixture. 96 ch, dedicated o/p, 176mm x 440mm x 40mm. RAM memory. \$1600

#### Theatrelight: Distributed by Lightmoves Technologies. (02) 560-0000.

**TLEC 12/2:** Two preset manual console. 12ch Analogue, 425mm x 317mm x 40mm. \$435

**TLEC 24/2:** Two preset manual console. 24ch Analogue, 679mm x 317mm x 40mm. \$824

**Scenemaster II 12 Channel:** Manual, memory assisted console, 300 memories, scenes/sequences/chases, timed crossfades, remote trigger, RS 232 output. 12ch, DMX512 o/p, 482mm x 440mm x 40mm. CMOS (battery backup) memory. Schools, amateur \$1625

**Scenemaster II 12/24:** Manual/memory assisted, 300 memories, RS232 output, scenes/sequences/chases, timed crossfades, remote trigger. 24ch, DMX512, 482mm x 440mm x 40mm. CMOS (battery backup) memory. Schools, amateur. \$2225

**Scenemaster II 24:** Manual/memory assisted console, 300 memories, scenes/sequences/chases, timed crossfades, remote trigger,

RS232 output. 24ch. DMX512 o/p, 762mm x 440mm x 40mm. CMOS (battery backup). Schools, clubs, amateur theatre. \$2035

**Scenemaster II 24/48:** Manual/memory assisted console, 300 memories, scenes/sequences/chases, timed crossfades, remote trigger, RS232 output, 48ch, DMX512 o/p, 762mm x 440mm x 40mm. CMOS (battery backup) memory. Schools, clubs, amateur theatre, rental. \$2702

**Scenemaster II 36:** Manual/memory assisted, 500 memories, scenes/sequences/chases, timed crossfades, remote trigger, RS232 output. 36ch, DMX512 o/p, 969mm x 440mm x 40mm. CMOS (battery backup) memory. Schools, clubs. \$2650

**Scenemaster II 36/72:** Manual/memory assisted, 500 memories, scenes/sequences/chases, timed crossfades, remote trigger, RS232 output. 72 ch, DMX512 o/p, 969mm x 440mm x 40mm x CMOS (battery backup) memory. Schools, clubs, rental. \$3445

**Scenemaster II 48:** Manual/memory assisted, 500 memories, scenes/sequences/chases, timed crossfades, remote trigger, RS232 output. 48ch, DMX512 o/p, 1213mm x 440mm x 40mm. CMOS (battery backup) memory. Schools, clubs, \$3365

**Scenemaster II 48/96:** manual/memory assisted, 500 memories, scenes/sequences/chases, timed crossfades, remote trigger, RS232 output. 96ch, DMX512 o/p, 1213mm x 440mm x 40mm. CMOS (battery backup) memory. Schools, clubs, rental \$4125

**Scenemaster II 60/120:** Manual/memory assisted console, 500 memories, scenes/sequences/chases, timed crossfades, remote trigger, RS232 output. 120ch, DMX512, 1456mm x 440mm x 40mm. CMOS (battery backup) memory. Schools, rental \$4990

**Showmaster II 24:** Manual/memory assisted console, 300 memories, soft patch, VDU output, chases/sequences/scenes, timed crossfades, RS232 output. 24ch, DMX512 o/p, 880mm x 440mm x 40mm. CMOS & memory card, Schools, clubs, rental \$3275

**Showmaster II 24/48:** Manual/memory assisted, 300 memories, soft patch, VDU output, chases/sequences/scenes, timed crossfades, RS232 output. 48ch, DMX512 o/p, 880mm x 440mm x 40mm. CMOS & memory card. Schools, clubs \$4152

**Showmaster II 36:** Manual/memory assisted, 500 memories, soft patch, VDU output, chases/sequences/scenes, timed crossfades, RS232, memory card backup. 36ch, DMX512 o/p, 1134mm x 440mm x 40mm. CMOS & memory card. Schools, civic theatres, rental \$4190

**Showmaster II 48/96:** Manual/memory assisted, 500 memories, soft patch, VDU output, chases/sequences/scenes, timed crossfades, RS232, memory card backup 96ch, DMX512 o/p, 1378mm x 440mm x 40mm, CMOS & memory card. Suit Theatres, rental, production \$5940

**Showmaster II 60:** Manual/memory assisted, 500 memories, soft patch, VDU output, chases/sequences/scenes, timed crossfades, RS232, mem. card backup, 96ch, DMX512 1621mm x 440mm x 40mm, CMOS & mem. card. Theatres, rental, production \$6025

**Showmaster II 36/72:** Manual/memory assisted console, 500 memories, memory card backup, soft patch, VDU output, chases/sequences/scenes, timed crossfades, RS232 output 72 ch, DMX512, 1134mm x 440mm x 40mm, CMOS & memory card, Schools, civic theatres, rental \$5308

**Showmaster II 48:** Manual/memory assisted console, 500 memories, memory card backup, soft patch, VDU output, chases/sequences/scenes, timed crossfades, RS232 output. 48 ch, DMX512 o/p, 1378mm x 440mm x 40mm. CMOS & memory card. Civic theatres, rental, production \$5100

**Showmaster II 60/120:** Manual/memory assisted console, 500 memories, memory card backup, soft patch, VDU output, chases/sequences/scenes, timed crossfades, RS232 output. 120 ch, DMX512 o/p, 1621mm x 440mm x 40mm. CMOS & memory card. Theatres, rental, production. \$6990

## AIMS A MUST FOR TECH HEADS

Looking past the army of celebrity endorsers flown in for the four day tradeshow, serious and potential music technology enthusiasts have much to keep them occupied at AIMS '93. While the likes of John Entwistle, Frank Gambale and Dom Famularo will show off their mainstream conventional talents, less famous musical types will be unwrapping the very latest technology.

While Roland are most obvious, with extensive on-stand and Doctor Technology activities, smaller vendors like The MIDI People will attract large flocks of eager punters. Trigoz will debut a new range of drum triggers, Datasonics and Mindscape will display software.

Earlier this year Sydney retailer Nick Bava held a mini-expo on a Sunday afternoon in Parramatta, and attracted nearly 1,000 enthusiasts at \$5 each - such is the thirst for music technology information. BAVAS Music Scene have an exhibit at AIMS, as do rival Sydney hi-tech music retailers, Turramurra Music - who will feature Sony products amongst others.

Roland have front running in exposure stakes, with active displays via a group tagged 'The Technology Advantage' appearing in the AIMS LIVE THEATRE. These musical types will then rush to the Doctor Technology sessions, where they claim most musical technology mysteries can be solved! Doctor Technology sessions allow individuals time with the experts to get their

hands on the subject matter. Let me rephrase that - to get a grasp on the subject.

To try to capture everything that appeals at AIMS here is futile - other vendors will stage demonstrations on stand, and the opportunity to find answers and broaden your horizons are unlimited. AIMS '93 is a music technology mecca! Make the journey and learn!

### The MUSIC TECH Must-See List!

Australis: AKAI samplers, Peavey digital. # 98  
 Bavas Music Scene: Hands On Midi Seq. # 113  
 C.M.I.: Digitech harmonizers. # 41  
 Datasonics: software, music & recording. # 66  
 Electric Factory: Ensoniq & Alesis. # 62  
 Kawai: Keyboard and MIDI devices. # 29  
 Mindscape International: Software. #106  
 Mobex: Casio. # 28  
 Roland: On-stand demos. #23, # 60, # 70  
 Sound Devices: Hardware, software. # 104  
 Sound Warehouse: Samples, CD Roms. # 80  
 Studio FX: High Tech rental display. # 65  
 Studio 301: Home of the MIDI Suite. # €3  
 Syntec: Fostex recording technology. # 30  
 Tascam: Latest digital recorders. # 26  
 The MIDI People: Broad world of MIDI. # 84  
 Trigoz: Peizo based drum triggers. # 83  
 Turramurra Music: Hi-Tech retailer. # 15  
 Yamaha Music: Keyboards, technology. #3, #40

### AIMS '93 TIMES:

Trade Only:  
 Thurs. Sept. 9th: 10 - 6pm  
 Friday Sept. 10th: 10 - 4pm

Public and Trade:  
 Friday Sept. 9th: 4 - 9pm  
 Saturday Sept 10th: 10 - 9pm  
 Sunday Sept. 12th: 10 - 6pm

*\* If you've been asleep at the wheel all year, AIMS '93 is the tradeshow run by the well organised Australian Music Association, or AMA. Aside from the Music Tech highlights above, there are well over 100 exhibits in two halls - with lots of side events to appeal! The venue is the Sydney Exhibition Centre at Darling Harbour in Sydney. Public parking a-plenty is nearby, you can easily walk from the city, head West from Town Hall railway station.*

## CONNECTIONS AT AIMS '93

We will have a stand at AIMS '93 staffed at all times, and would appreciate your comments and suggestions for the magazines improvement. Editor Julius Grafton, along with Caroline and Sarah Grafton will be on hand at stand 101. This section of Connections is always in need of input from technology users and vendors, so if

you have the chance to drop by, please do so.

Perhaps you have considered writing a short story or End User product review of a device you currently use and are enthusiastic about? This is the kind of thing we are interested in.

Stand 101 is also the place to collect a free copy of the magazine, or subscribe for \$29.50!

## info freako

With Danny Dun

### READERS Q & A

#### SAMPLE LIBRARIES:

**I'm a regular reader of Connections, who's just started working as a DJ in a large Melbourne club. I've been grabbing samples recently on a Roland S700, and have been too shy to ask my workmates about sample libraries. Can you give me an idea what is available at what price - and how compatible the various libraries are. -"Shy DJ", South Yarra, Victoria.**

The neat thing about samplers is that there is so much out there in the way of sample libraries. These can basically be broken into two divisions. The first are manufacturer (and even model) specific. These libraries are commonly available on floppy disk and CD ROM, and are ready to go. With samplers becoming more sophisticated and having more memory capacity, floppy disk has become an inefficient way to store sound library data- you need heaps of them. CD ROM however will store the equivalent of 450 floppy disks, and a CD ROM also usually stores 'setup data', so they are machine specific. You can't use a Roland CD ROM on an AKAI, for instance. Price range \$400 - \$1500, \$700 median price.

Sound libraries also come in the form of audio CD's and records, but you need to sample them to use them. Price range \$50 - \$200. These are available from most high tech music stores and specialty record bars.

## info freako

Ask Danny Dun.

Your questions answered!

Just write to:

PO Box 439, Epping NSW 2121, or FAX to (02) 876-5715.

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

# MUSIC TECHNOLOGY SUPPLEMENT

## Bytes and Pieces ...

□ **KORG** have released a limited edition M1, fitted with Invision's Plus One board. This gives the big seller an extra 4 mb of hip samples - making a total of 8 megabytes. The M1 + 1 is \$2999 retail.

□ **KORG** also have reduced the price of ROM cards for the M1, single program cards are \$39, and selected PCM card sets \$79.

□ **QUICKSCORE DELUXE** makes music notation printouts easy - The Windows version (\$299) lets you play a note and see it in notation on screen. For DOS or Windows.

□ **KRONIC Oscillator** is the fanzine newsletter for clan analogue members - the gathering of fervent and heavily committed techno nerds. In fact they are a collective of like minded electronic sound experimentalists, based in Sydney

and Canberra. The Clan is spreading out, and invites membership for \$30 per year. Contact them c/o PO Box e384, St James 2000, or email rx@asstdc.oz.au.

□ **KORG** have also introduced a new affordable sound modules. Derived from the industry-standard 01/W Music Workstations, the 05/R is housed in a half rack space. However it has 6mb of PSC Samples, a fully programmable synth section, Korg's Comination Mode, twin stereo multi-effects units, a General MIDI section, and much more. The 05/R retails at \$1495.

□ **MIDI Interface** is the newsletter of Mainly Multitrac, the distribution outlet headed by Dick and Jason Begley in Victoria. It details all that is new from the firm, with some user tips for their products, and can be had by calling (03) 558-1155 or faxing (03) 558-1514.

## What is MIDI & how does it work?

part four

### THE BENEFITS OF MIDI

(continued)

#### (3) A Sequencer System

One of the most powerful uses of the MIDI language is to include a sequencer. Performing in unison, as we mentioned earlier, can provide some excellent sound possibilities, but still limits the performance to that of the master keyboard. A sequencer on the other hand, is capable of remembering several instrumental parts, making it possible to use a variety of sound sources. It then becomes a simple matter to construct an entire arrangement, or orchestration.

For example, a sequencer as the master can control a synth for melody, a piano for chords, another synth or bass, and a drum machine, all at the same time. The data for this 4 part performance being stored in the sequencer. Then, as the data is sent to all 4 instruments, the auto performance begins.

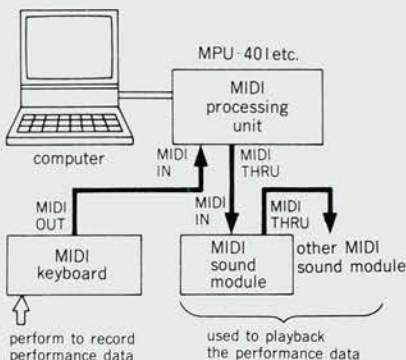
#### (4) Computer Music System

Computers did not seem to relate to music very well before MIDI. Certainly it was hard to understand any "conversation" between computers and musical instruments. Thanks to

MIDI it is now possible to build small boxes that can "interpret" the language of computers into MIDI, and vice versa. These boxes are called "interfaces".

All computers use what we call "software", which is information on computer disk that tells the computer how to behave. One piece of "software" may instruct the computer how to be a sequencer for example, while another could be "sound edit" software, teaching the computer to modify the sounds of a synthesizer. (continued next month)

FIG 2



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

### READERS Q & A

#### CAN I GET NEW NOISES?

In my daily chore as a sound engineer for cover bands in Sydney, I work with more and more digital program coming down the line. Now I'm keen to explore, and wonder about tone modules, sound modules and suchlike. How can I generate sound from these at the mixing console? Do they have an analogue trigger like, say, a noise gate key input does? Would a gated kick drum line signal from an auxiliary send out of my desk trigger a burst of tone from one of these, and could I dial up a new tone until I had something I liked? What I'm trying to do is eliminate the acoustic kick drum sound altogether.

-Jim Matheson, Cremorne NSW.

Replacing acoustic kit sounds with sound module or sampler sounds is quite a common occurrence in both the recording studio and live scene. Most sound modules do not have a trigger input. Some, like the Alesis D4 drum module, has a set of 12 trigger inputs which will take a mic input or some other form of trigger signal and convert it into a MIDI signal. With the DR4 you could then dial up one of its 500 on-board drum sounds!

There are also some specific trigger to MIDI converters such as the Akai ME35T which will take 8 triggers and convert them to a MIDI signal allowing you to set up and capture times, etc. The beauty of this box is that up to 2 of these can be remotely controlled by Akai S1000 and S3000 series of samplers, into which you could load any sound you like, to be triggered from the ME35T. You could replace your kick with a door slam if you like or a sound usually associated with obnoxious body odours! What ever you like. One point to note, you can pick up some older, second hand pieces of kit such as the Roland S220 sampler.

These can be found quite cheaply and have a mic/trigger input which will allow you to fire off a sample in a similar way. Watch out for the quick disks that this unit uses for sound storage though, these are hard to come by and are not cheap!

# M

# MUSIC TECHNOLOGY SUPPLEMENT

## READERS Q & A

**What is SMPTE Synchronisation, and why do I need it for my home studio? I want to buy a Digital 8 track ADAT or DA88 very soon, and don't want to be ignorant when I throw myself in front of a techno snob in a music store!**

*"Analogue Annie", Townsville.*

SMPTE stands for Society of Motion Picture and Television Engineers. The idea is to set some standards that equipment can adhere to, SMPTE code is used to directly synchronise various media such as analog and digital audio, video, and often film.

There has to be some kind of method by which you can sync things like a reel of audio tape to a video recorder.

Where magnetic tape is involved, a time code is stamped in exact locations onto the tape itself. This means that different parts of the tape have a separate address - just like houses in a street. Because it is stamped on the tape it can't slip as it could if timing

info was not being referenced to the tape position.

A SMPTE time code corresponds to a video or film frame. In Australia for Video work we generally operate at 25 frames per second (there are many 'frame rates' for various applications). In rough terms this means in every second, 25 video images are flashed on your screen. Because an address is stamped every 1/25 of a second it allows very accurate monitoring of tape position. These timecode addresses are displayed as 8 digits in the format, so 09:23:14:24 means you are 9 hours, 23 minutes 14 seconds and 24 frames into the event in question.

You didn't say what kind of home studio. If you need to work with film or video then you should be using SMPTE. If you have a MIDI based studio then you may wish to synchronise something like an Alesis ADAT, Tascam DA88 or Akai DR4. If both the sequencer and recorder have a SMPTE reader/generator, then synchronisation should be possible. If the sequencer only has a MIDI interface then

it may be possible to use MIDI timecode for synchronisation. Very basically MIDI time code is just SMPTE in a MIDI format. If the recorder will only work with SMPTE then you will need some form of MIDI/SMPTE converter. If you are only recording acoustic instruments and don't need to connect to any other time referenced gear, then perhaps you have no need for SMPTE sync!

## info freako

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

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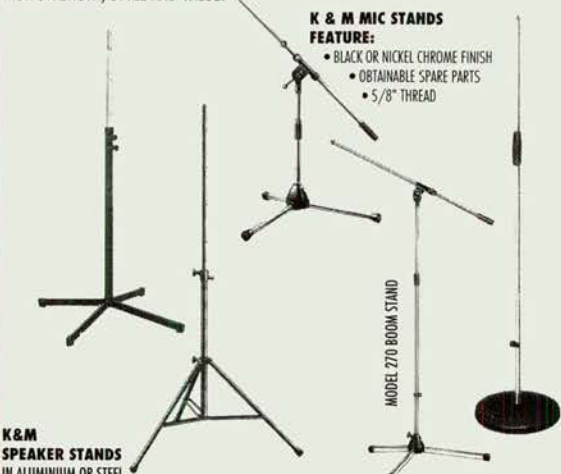


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## MIDI FILING

WHAT is it? Do YOU need It? Dave Macken & Bruce Waite tell you.

Sorting out what currently resides within the memory of your MIDI based equipment can often leave a complete room full of people testing their patience as they pace up and down waiting. This can happen with a computer full of sequences, a guitarist not being able to find the missing effects patch or simply an engineer who insists on recalling the same parameters that were in a patch he assures you worked last time.

There is a very cost effective solution to this problem. A variety of companies enable vast library creation and ensure easier "playback only sequencing" on 3.5" floppy disks with small units called MIDI filers. Within the later MIDI protocol there is the ability to use the IN and OUT ports to transmit what are known as "System Exclusive" messages which, as well as dealing with many music commands, cater for "non-music" instructions needed for tasks other than actually executing MIDI commands. The entire memory, or parts thereof, can usually be transferred from a MIDI based device onto disk in a matter of seconds, this may be replaced just as quickly with new data.

Let's now look at some common uses of MIDI filers within both the studio and live realm. Most of us don't have a studio complex of our own and are subsequently hiring time in other peoples premises, and precious time it is. Given that a lot of sessions actually span over a few days - often not in a row - and you are continually using the same MIDI devices; e.g. effects processors, sound modules etc, it is at most times painstakingly time consuming to re-create special reverbs or sounds from a previous session or earlier mix. To employ a MIDI filer as a data librarian throughout such a session will ensure that at this or any future point you are able to quite quickly reset all the compatible machines to behave exactly the way they did last time you were in this particular studio.

This also applies to taking the patches from one studio to a similar machine in another studio. Just as you are able to save a file from one machine and use it in another identical unit in studios you can certainly employ the same practice on the live circuit. One data filer could satisfy the needs of an entire band and crew. The front-of-house engineer may use the filer to reset effects processors hired

at an interstate location, he may also reload his own processors with the necessary data for one of many bands with which he works. The keyboard player may do the same or he/she may choose to carry a set of disks and a filer in the event that a power "freak-out" at a gig causes the memory to go hay-wire within their equipment. Basically anyone who uses a MIDI device on stage would be able to reload memory quickly, not only does this give you the safety of back-up capability, it also allows a unit that only holds a possible 16 patches to very rapidly have new patches down-loaded during a performance.

Considering that guitarists now choose to use MIDI pedalboards alongside their MIDI effects processors and pre-amps, disks for a data filer could be prepared that contain the same patches in many different progressions. This would enable the player to always maintain a situation where necessary effects set-



tings appear consecutively in the same order as the song list for the evenings performance. As this would apply to everyone with MIDI gear it would create the need for only a small contribution from each band member to hook into this music technology. It is also quite likely that an entire set of data for one band and engineer would easily fit onto one disk at a cost of around four dollars.

"So how does my data filer know which machine to load and save from?" you ask, "How do I know which file is which?" By use of an individual identification number that often relates to brand, model number or internal operating system, files are tagged so as ensure that they return to the same type of machine as from whence they came. Consequently if the user sends a brand "X" model "7" file to a brand "Y" device, the illegitimate device will simply ignore the incorrect ID and retain its current data. Sweet as !!



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# M

# MUSIC TECHNOLOGY SUPPLEMENT

As to knowing which file is which, manufacturers of these data filers have allowed the renaming of files once they are stored to disk. When initially storing a file it will usually be titled according to the manufacturer ID number and the next available file number, once stored, the user may then call the file "Song of doom" etc. Most people find this a lot easier to remember than ID and file numbers.

Over the last five years data filers have appeared which also perform the task of playing and recording sequences to disk. In this mode filers become non-editable sequence record and playback units.

If you already have a sequencer or computer you may think that these devices are superfluous however we'd much rather take a small single unit to a gig than have to rely on a computer on the road. Some filers require the sequence information to be loaded to disk in real-time whereas other brands allow songs to be bulk dumped using a format called MIDIFILE. There is no restriction on channels because all 16 MIDI channels will record and

play at once. This means that a songwriter/artist can write sequences at home or studio on an elaborate setup yet simply take only the data filer and necessary sound modules to a gig. Not only could your data filer be sending out sequence information during songs, it may also be re-configuring new sound patches at various points during the set. Great for duo's and solo artists!! Also worth mentioning here is that there is a ready supply of pre-made sequences, such as the MIDI MELODIES range, available for many of the "greatest hits" type performers. This means that by purchasing only a suitable data filer and sound modules, a performer can acquire a large library of popular backing tracks without ever having to record them at all.

Three of the currently popular data filers that we know of come from the major manufacturers ROLAND, ALESIS and YAMAHA. Roland make a model called the SB-55 Sound Brush which seems to be exclusively for the playing and recording of sequences. The SB-55 is a part of a series of products from



Roland aimed directly at the small space, 'easy to use' MIDI purchaser. To this end the Sound Brush has no apparent "Bulk Dump" data filing capability yet it does have extra functions in the music arena. This unit comes with a remote control which is great for gigs and it has Tempo variation and the ability to loop between two selected points in a sequence, which would be great for rehearsing specific sections of songs.

Alesis have a unit called the "DataDisk" which has been on the market for quite a

(over)

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# MUSIC TECHNOLOGY SUPPLEMENT

## MIDI Filers (cont)

while, however, there have been several software upgrades since the units inception. The "DataDisk" was originally intended for the storage of data libraries and this is where the unit performs best. Alesis have added the ability to record and playback sequences within this device but this must be done in realtime and allows no ability to bulk dumps songs for playback or alter the Tempo after recording. Whilst the Roland and Yamaha are small stand alone units, the Alesis DataDisk comes packaged as a one unit high, rack mount chassis and this has been proven to be a very reliable device.

The Yamaha MDF2 is black plastic and is housed as a table top style of unit. Yamaha have given this unit the ability to file data libraries, record sequences in real time, alter playback Tempo as well as using an MS-DOS disk format which allows songs recorded on programs such as CUBASE etc to be stored to disk at the computer and then immediately played in the MDF2. An added advantage of the Yamaha unit is that it can be

operated using batteries instead of AC power.

Using data filers is extremely simple to comprehend compared to other MIDI principles. We suggest that you could improve your MIDI efficiency greatly by incorporating a suitable filer into your setup. The choice of filer will depend on your individual requirements, however, once purchased it's one of those tools that becomes invaluable and you may wonder how you ever did without one.

### SPECIFICATIONS

#### SB-55 ROLAND SOUND BRUSH

DATA FORMAT: STANDARD MIDI FILE "0" or "1" (PLAYBACK)- STANDARD MIDI FILE "0" (RECORDING)  
 DISK STORAGE: 720 Kbytes, 99 SONG FILES OR APPROX 90,000 NOTES (applies to MF2-DD 3.5" micro floppy)  
 No OF TRACKS: 1 (format 0) 17 (format "1")  
 TIMEBASE: 96/120/192/240  
 TEMPO: 5bpm to 260bpm  
 ACCESSORIES: POWER SUPPLY, REMOTE CONTROL.

#### MDF2 YAMAHA MIDI DATA FILER

DATA FORMAT: STANDARD MIDI FILE "0" for SYS EX. DUMPS AND SEQUENCER FUNCTIONS (MS-DOS formatting)  
 DISK STORAGE: MDR=99 FILES with 600 Kbytes per file max/SEQ=99 SONGS with approx 80,000 notes (applies to MF2-DD 3.5" micro floppy)  
 No OF TRACKS: 1 (16 MIDI channels)  
 TIMEBASE: 96 int/24 ext sync  
 TEMPO: 30bpm-250bpm (PLAY) 120bpm (RECORD int)  
 ACCESSORIES: POWER SUPPLY (optional), MIDI LEAD, DISK.

#### ALESIS DATADISK

DATA FORMAT: REAL TIME SEQUENCE RECORDING ONLY  
 DISK STORAGE: 53 FILES MAX with 800Kbytes available  
 No OF TRACKS: 1(16 MIDI channels)  
 TIMEBASE: N/A  
 TEMPO: AS RECORDED or ext sync  
 ACCESSORIES: POWER SUPPLY

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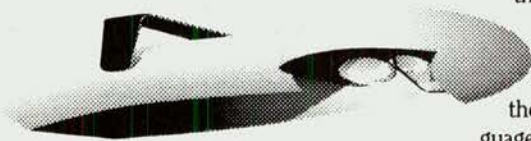
# CONVERGING TECHNOLOGY

Bruce Waite and Dave Macken attempt to predict your near future!



**F**or quite some time now modern audio, video and computer technology has been continually evolving leaving a trail of redundant operating and interfacing systems in its wake. Throughout this evolution, and often by trial and error, some common industry ideals have begun to appear.

It was a time when storing a meagre amount of data from a primitive computer involved patiently waiting while a peripheral device made holes in one or many cardboard strips which



then represented the memory banks. Even more tedious was the task of reloading this information by slowly feeding these cards into yet another device which would shine light through

these holes to be read by light sensors. Big time! If you were lucky it was possible to also load these cards into a different computer however it would usually need to be the same brand and model to even approach success.

Not only can you now store data quickly and efficiently in large amounts, this data may just as easily be transferred directly to a range of computer based products for instant appraisal. The basic requirement is that the equipment involved interfaces correctly, and the units are able to "talk" to each other so as to understand commands.

As industry began addressing the needs for common control languages it became increasingly apparent that there was a need for synchronous activity between various media. The motion picture industry had, for example, arrived at a fairly uniform international standard for describing accurate time points within a film by refer-

ring to the number of hours, minutes, seconds and frames which had elapsed. Whilst this system, known as SMPTE, is still not quite universal in its "timebase" it has become commonly accepted as the means of synchronising sound and picture.

Further to synchronising and controlling audio/visual events the concurrent development of electronic musical equipment led to the advent of a crude "industry specific" inter-control system. By using the PPQ (Pulse Per Quarter) system drum machines and sequencers could play in time with each other by listening to electronic pulses transmitted at intervals that represented sub-divisions of the tempo. Added to this small amounts of continuously variable information could be directed between compatible units under the guise of a control voltage (usually 0 to 10 volts), known simply as CV. This allowed musicians to become more creative with elec-





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tronics, it also allowed them to become more creative with their temper as nearly every command scenario would require individual patch leads thus creating a wiring nightmare.

Just as RS-232 became popular as a serial interface for computers it wasn't long before MIDI was cultivated by musical equipment manufacturers, to replace their earlier PPQ and CV inceptions. An agreed means of sharing many common control and address principles was found as well as a standard method of physical connectivity. Now it was possible to use one cable to transmit a large range of relative commands simultaneously on up to sixteen discreet channels.

With the 80's personal computer boom and the advent of software based MIDI and synchronisation control came the call for yet another converging of different technologies to cater for even wider reaching control and communication applications. Essentially, as consumers our desire for product choice and enhancement has forced these dissimilar technologies to become somewhat compatible. As much as our wants and needs have been satisfied to a point, what if you could gather together a multitude of electronic media and manage it from one central point-simultaneously and in real time? Would that be nice? Would ya' like that... hmmm? Thought so.

So now there's MediaLink for the professional audio industry. If the name seems to sum it up, you're right and here's another dictionary expanding techno term for you... "multimedia networking". Guaranteed to become the hype word of the 90's! Multimedia networking proposes to enable various complex data transmission arrangements to take place between many digital and analogue points of access - whilst allowing centralised control and monitoring of any or all events.

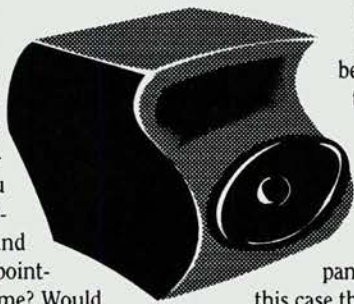
The Lone Wolf company of Redondo Beach California have developed a cost effective system using their own MediaLink high speed CMOS chip with design aspects based around internationally proposed protocol principles for "open systems interconnection". These principles have been proposed by the International Standards Organisation (ISO).

Further to the ISO principles, a Subcommittee of the "Audio Engineering Society Standards Committee" (AESSC) has been in action since the second half of 1992. Whilst Local Area Networking (LAN) already exists as a medium within computer networks, the sub-committee, known as SC-10, hopes to set further networking standards for the professional audio industry in particular.

So what do you need to make a MultiMedia Network come to life? First of all you would presumably need a number of people to talk to. Lone Wolf have already negotiated license deals with a number of major professional equipment manufacturers, though so far these seem to pri-

marily be American companies - all the big ones! This in itself indicates that manufacturers in at least one country are already converging on the newly released Lone Wolf products.

Various Virtual Software, supported by Lone Wolf's Visual Network Operating System (VNOS), performs many functions within the MediaLink multimedia system. Firstly it lets the user build the virtual environment in which they choose to work, this may be the different rooms in a recording complex for an obvious example. Also the software allows custom creation and assignment of virtual controllers. These controllers can be laid out in what would become a Virtual Control Surface, this hypothetical set of controls could consist of channels of a mixing console each with their own compressor even though the compressors may reside in a different room from the mixing console. The existence of the controls is "virtual" though they talk to "real" devices that are also in the network.

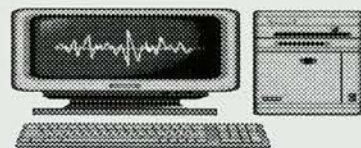


Console manufacturer Amek have for some time already been selling a proprietary Virtual Dynamics software/hardware system into their own products where the channels of the desk can be viewed on a screen and have gates, compressors and panners drawn in by the user. In this case the devices are "virtual" because they are simply "software reactions" which address a single controller in each "real" channel.

Coming to grips with the "virtuality" of a system such as Lone Wolf's should facilitate an easier understanding of the various hardware structures used to support the network. For a greater understanding of how MediaLink's network is constructed and managed, we've packaged some of our own data around this article and reproduced some of the manufacturers illustrations.

Should this invention enter the industry on a global basis similar to MIDI - and it's very likely - it is not beyond comprehension that in the near future we will be able to regularly see live and studio facilities controlled entirely from one computer. Already some larger touring bands have used Lone Wolf MediaLink to automate and monitor various quantities of equipment. The ability to transmit large numbers of digital audio channels through "Level 2" chips aided by Virtual Software and analog to digital "taps" means that there is no reason that mixing consoles as well as outboard processors could be done away with altogether in the future.

Technology is renowned for forging even newer technologies and as the Multimedia Networking ball gets rolling it will inevitably create newer and more broad based applications than the initial professional audio sphere that MediaLink currently deals with. Networking systems *DO* already exist for other specific fields; the communication company AT & T IS redeveloping it's "Hobbit" chip for multimedia uses; multimedia networking *HAS* got the potential to control complete in-house appliance envi-



## HOW IT WORKS

**Networking:** This involves using layers of protocol to manage large and complex priority Bus-ing of data. By placing suitable devices within a network, the designated controller can access their control functions as well as organise data transmission from one place to another in real time. By utilising these methods many functions may be performed at once over a single link thus enhancing the operation of a group of devices.

**Distribution:** Information is placed in "packets" and managed by the Network in a series of manoeuvres which enable strings of data to be sent to specific addresses with a guaranteed delivery time. Various interconnecting devices allow a "star" network to be built up to suit individual application requirements. Each network can consist of many sub networks.

**Interfacing:** Lone Wolf intend to supply factory fittable assemblies and chips to support on board MediaLink ports. These devices would presumably plug straight into the network. Devices without MediaLink ports would require the use of a "tap" to participate inside the network. These "taps" let the network communicate with many different existing interface standards.

**Control:** Mac and PC compatible software have already been developed to control the network features. The intention is that many devices will be able to respond to MediaLink in the future. Software known as VNOS allows the user to access virtual control panels representing any device in the network. Virtual Venue and Virtual Control Surface software packages relate to using the network to create a "Virtual Studio" for both operating and monitoring all equipment. "LanScape's" can also be used for interactive operation of equipment and pre-configuring set-ups.

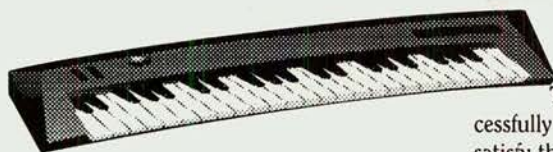
## Lone Wolf Hardware

**Medialink ML 2001A Chip:** Capable of communicating up to 24 channels of digital audio or any combination of MIDI, SMPTE, digital audio and video up to 20Mbits. This is the controller chip in the network and it employs what is referred to as "Level 2".

**MicroTap Module:** The MicroTap module is a circuit version of the MediaLink chip. This seems to be currently limited to 125Kbits of transmission and as such is referred to as "Level 1".

ronments: it hasn't happened at a consumer level yet....but it's all just around the corner.

Just think, this new wave of networks may, one day, themselves have to converge to a point of multi-multimedia networking networks. Try getting your head around that!



**Protocol Converters:** Combined with the MicroTap controllers these complete a "tap" so that it becomes a fully furnished protocol interface.

**Hubs:** These units cater for the distribution and merging of data. You'll need one or more of these to interconnect devices and ensure that the network is "fault tolerant".

**Bridge:** A custom head to head protocol converter.

## Lone Wolf Hardware Connections Options

**Fibre optic cable** (This is the optimum choice for this medium, but a reliable, roadworthy Fibre Optic CONNECTOR hasn't been developed JUST yet), PA-422, Midi, RS-232, DMX, Radio frequency (RF), Twisted pair, Isolated twisted pair (RS-485), Coaxial cable, AC carrier signal.

## LONE WOLF ML 2001A "CONTROL CHIP" PERFORMANCE ASPECTS

- \* Compatible with many Buses as well as Intel and Motorola.
- \* Simple programming requirements,
- \* Simultaneous transmission of multi-media data on one cable (Audio, Video, SMPTE, MIDI, SCSI, RS-232, PA-422).
- \* Single 5 volt power supply.
- \* Network wide real-time synchronization for SMPTE and other time codes.
- \* Up to 24 channels of real time digital audio can be transmitted to any number of stations.

## LONEWOLF "MICROTAP INTEGRATED CONTROLLER" PERFORMANCE ASPECTS

- \* Variable transmission rate (110 baud to 2Mb)
- \* 8 channels of analog to digital conversion.
- \* Up to 30 digital I/O lines.
- \* Onboard RAM, EEROM and ROM.
- \* Input/Output compare.
- \* Synchronous serial communications.
- \* Supports 68HCII capabilities.

## BANDWIDTH

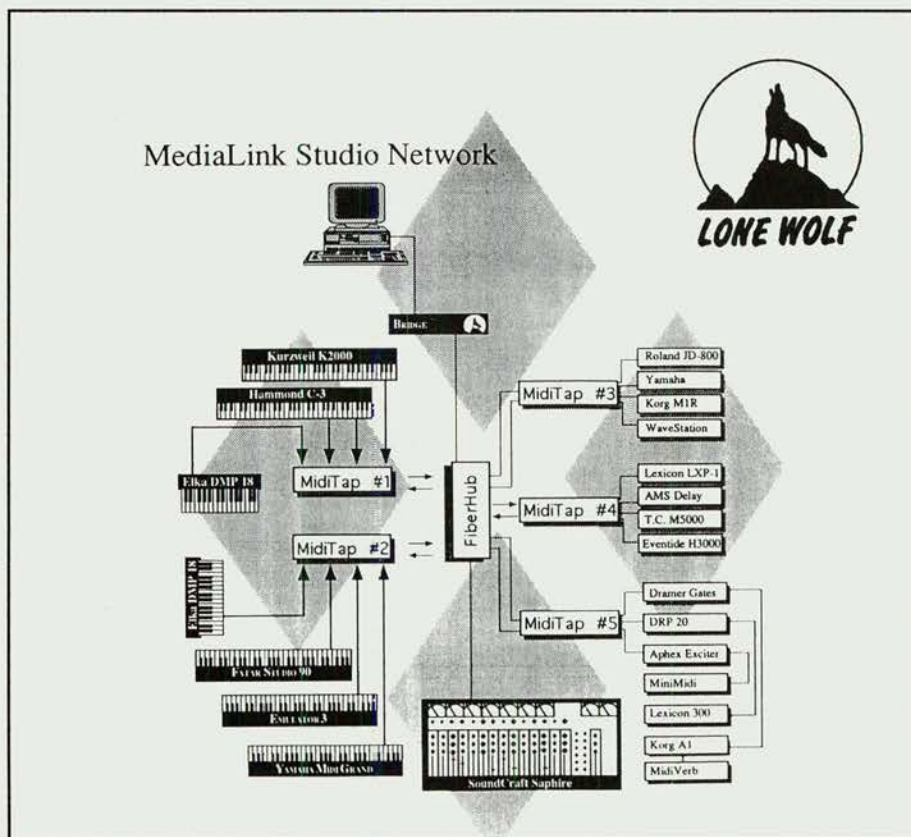
What is the *bandwidth* of a digital network? Put simply the bandwidth is how much data the system is capable of handling, expressed as thousands or millions of bits of information per second. For instance MediaLink's ML 2001A control chip has a data rate of 20,000,000 bits (20 megabit) per second. Potentially, a bandwidth of this size would easily accommodate enough digital information for five video channels as well

as five stereo audio channels.

To transfer such amounts of data successfully it is important that the carrier will satisfy the bandwidth required by the network. To this end, Fibre Optic cabling is increasingly used and recommended in the transfer of digital data as it's bandwidth usually exceeds that of

most industry applications. ♦

Bruce & Dave operate a project studio called: (for some reason) BLIND LEMON PIE. Call them on (02) 457-8304.



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# AUDIO ON SHOW

*The A.E.S. is, of course, the Audio Engineering Society - whose local chapter stage a trade show every two years. Concluding on August 26th in Melbourne, we had Bruce Waite on the scene to report on the State Of Play in Australian Audio Trading-1993*

**W**ell it's full of boots and all technology, that's a fact! New units straight from the factory, old products that have been modified and refined, existing technology

that's doing **just fine thanks**, and quite a bit of "stuff" (especially software based) that wasn't fully functional due to pre-release versions being displayed in order to "catch your eye".

There were things that went round really fast, things that stayed still and looked really boring (even if they were very useful), automation was prevalent and to this end, the device that won my award for being the most fun to watch was Sony's 360 disc automated compact disc loader.

This particular unit holds two vertical stacks of 180 CD's each and at the bottom of the chassis resides two laser mechanisms which enable the user to audition one CD whilst the other is playing the current selection. Disc access is enabled using a mechanism that looks something like an elevator which goes and "gets" the disc and takes them to the "lobby" at the bottom for immediate use. Whilst this mightn't have been the most important invention at the show it sure wasn't as boring as some of the people I met.

As with previous industry shows that I've been able to attend (Not just AES), I found that product presentation and manufacturer support is on the increase in both quality and quantity. Many local and overseas representatives were on hand to answer, first hand, questions about the design and marketing of both small and large scale products. In each instance these people were friendly, full of usable information and eager to satisfy.

**HARD DISK EDITING** It was impossible to walk more than 60 feet down any aisle without tripping over another offering in the hard-disk editing and recording stakes. Lot's of different ideals here! If it didn't do one thing, it would do another and vice-versa! I must be honest, of those disk based systems I managed to "get onto" I found that instead of asking what they did, mostly I only needed to find out what the particular product used as a title for already familiar functions.

Digital editing and pasting equipment all needs to perform basically the same functions otherwise it won't do it's specified job and consequently I found that for me what it really came down to in most instances was how easy it was to get around each system, how many tracks can be played simultaneously and whether you could or couldn't redraw wave forms etc.

One very important thing to find out if you are considering purchasing such a system is just how long it takes to re-commit recordings to disk and hence how many functions within each system require this re-committal process.

This did vary considerably between manufacturers and I feel it is a key point in deciding just how efficient a digital system can or can't be. The 486 IBM based "Sadie", offered by Audio and Recording of Sydney, was very sensibly laid out with full access from essentially one ever present "picture on the TV" and a price that probably wouldn't even get you a decent second hand car.

Here again, though, the most recent software version needed to be on display alongside the existing version 1.73 because the version 2.0 still isn't fully finished.

**EXPORTING.** Exporting was discussed with many show participants and the general "vibe" seemed to be that this activity was on the increase. I was, however, disappointed to hear that competing exporters (and potential exporters) seem to be dragging their feet when it comes to "holding hands" and ganging up on foreign markets. Come on guy's, other countries do it to us; lets get them back!

While on the subject of disappointment, I found it hard to take when a small number of personnel around the place found it necessary to attempt to "trash" competitors and their products in order to explain to me how well their own products perform. To those few people I say: "Get real guy's, I'll form my own opinion of your competitors, just stick to subject!!" ...Anyway you may be the agent for that "piece of shit" next year and then you'll expect me to believe that it's the best thing. Hmhmhm?

**MIXING CONSOLES.** There were some really good offerings in the mixing console area with everything from the tiny Soundcraft and Mackie consoles right up to the "rip your arms off lifting them" concert and studio consoles with high impression ratios. The Midas XL3, the DDA range, AMEK, Soundcrafts, SSL, Otari and Sony were amongst the new generation of consoles wired up and ready to investigate.

There were desks with on board VCA routing control, desks with automation and recall software and desks that offered standard control with optional MIDI implementation. It will be impossible as I write this to go into technical detail about large numbers of products as the show finished at 4:00 pm today and this text must be ready by tomorrow. It's 4:00 am right now. Instead I will attempt to give an overview of what I saw, what took my fancy and what it made me feel. Okay? Good!

**DAT EDITOR.** One of the less enormous products that was very innovative was the portable, suitcase style DAT editing system at the Sony stand. Giving the option of single and double speed DAT to DAT transfer was the first groovy feature on this pre-release display model. Looking much like a fold open laptop computer this unit also offers

## AES AWARDS

**Encouragement Award** - For Engineering-For Theoretical and Practical Development in conjunction with Curtin University - To **Anthony Kitson**.

**Engineering Ingenuity Award** - To **Alcatel** Components, for the new IDC range.

**Permanent Audio Installation Award**  
For Melbourne Cricket Ground - To **Murray Neilson**

For Parliament House - To **Elecoustics**

**Production Award**

For Broadcast - None Given

Live Sound - Theatre - To **John Scandrett** - System Sound for continuous contribution.

Live Sound - Concert - To **Ern Rose** For Seekers Jubilee Tour of Australia and New Zealand 1993

**Recording Award**

For 'Strictly Ballroom' - To **Bruce Brown** of Alberts

For Tommy Emmanuel 'Determination' - To **Robyn Payne**

For 'Gorandeerk' Natural Recordings- To **Peter Mumme**

**Innovation Award** - For **SigTech** - To Cambridge Signal Technologies Inc.

**Service To Industry Award** - For Acoustic Design - To **Graham Thirkel**

**Lifetime Achievement Award** - For 41 years of service - To Vice President of AES **Neville Tiele**.

**Outstanding Service Award**

**Michael Falk** - Treasurer to the AES Committee

**Brian Horman** - Ex-Chairman of AES Committee from 1984 till 1992. An original foundation member since 1974.

*Presented By Peter Blackmore  
AES Chairman.*



## AUDIO ON SHOW

"tape scrubbing" facilities using a Jog wheel much like previous systems except that the sound to be previewed no longer needs to be placed in a RAM for this task, rather it is garnered directly from the resident tapes themselves. While not available for purchase right now, I was assured it would be within months and this would be of much assistance, for instance, in enabling performers who use DAT backing tapes on tour to re-compile tapes on the spot for differing the running order of their show.

**CREATIVE INDEED.** Chris Dodds from Creative Audio was keen to show me his companies new Concert Comm (I think that's how it's referred to) which is possibly the most useable and expandible multi-way talkback system I've seen to date. Onboard facilities include merging of program sound into the system with the choice of auto-ducking when speaking, many choices of giving priority to certain incoming lines, directors (etc) may monitor all stations at the same time as specified stations can continue to communicate individually with each other and the list goes on.

Chris also showed me two new devices which allow RAM storage of paging messages that can then be sent to various zones within a system. The more intelligent of these two units looks almost the same as a single space multi-effects processor and features choice of sampling bandwidth, 256 event routines which may be "sub-nested" within each other and these event routines can not only play out the required sample messages they can also deliver contact closure commands as well as waiting for the same before continuing routines. These units are Australian made (On ya fellas), they are very professionally packaged and considering that I've managed to think of five different uses in about 12 seconds I'm sure that these could become installation contractors friend.

**AMPLIFIERS.** Also Australian made are the range of Ampower amplifiers being manufactured under the watchful eye of Les Goding. A pioneer of importing Perreaux amplifiers, Les is now chasing an export market for his range of conventional rack

mount power amps as well as selling under an OEM deal where his amps are stamped with the GUVT badge. Also available were line voltage amps with zone switching and inbuilt mixers and

Jands released the SR 1500 - small brother to the SR 3000, and Australian Monitor were there too. Geoff Crane at the Yamaha stand also showed me an in-house style rack mount mixer amp from the Audio Technica range with a set of Mic channels and a set of program channels with basic user control available on the front panel and further preset controls that could be tuned and then hidden behind a flip down door. This seemed to make sense for installations because it only leaves "wally controls" accessible to the uninitiated user.

**AMX CONTROL.** Also of interest to installers could be the AMX modular control system which allows various remote control of complex arrays of both domestic and commercial equipment. Offered for sale by AV Technology Pty Ltd this system can, as an example, learn the commands from an infra-red VCR remote controller and then duplicate them from within the system at the same time as operating slide projectors, light switches, MIDI equipment and more. Human input to the system can be garnered in many ways including touch screens and lecterns with custom made on-board control panels. (*Not unlike a Crestron System.* -Ed) Kevin from AV Technology tells me that this system is currently being employed to co-ordinate electronic events for the entire Australian Pavilion at the Expo in Korea.

**DIGITAL 8 TRACK.** Mr. Findlay at the Syntec stand was surrounded with technology including the newly acquired range of DBX processors and Gotham high quality cabling. Tannoy studio monitors also played a part in the Syntec display and after remarking that I'd seen their drivers successfully used in foldback enclosures in past years he was quick to point out that Tannoy will soon be offering an improved entrant in the high power public address market.

Fostex is also a catalogue item for this company and it was good to be able to look at the upcoming

RD-8 ADAT digital multi-track. "Look" is all we could do though because the display model was simply a chassis with no internal components. Another pre-release "teaser" to add to list of semi-finished products on show. Personally I don't know if I like companies doing this, however, having no desire to study in detail the in's and out's of marketing electronic equipment I'll just remain content to take what I get.

On the subject of ADAT recorders, the Electric Factory had a healthy compliment of the Alesis ADAT's on display in conjunction with the BRC remote control/synchroniser and the newly released rack mountable meter bridges and sample rate converters. Micheal Allen was keen to reiterate the manufacturers commitment to a world-wide listing of owners and their studio facilities known as the "Worldwide ADAT User Network" (I wonder why they called it that!) Alesis are also keen to allow third party manufacturers such as TimeLine into this digital web to facilitate further hardware developments within this range. This display stand also had the best multi-listener headphone setup I've seen for trade display whereby a grid set about seven or eight feet above the display floor was fitted with retractable, pull-down headsets thus allowing a large number of visitors to the stand to receive a no tangies demo while not annoying anyone on other stands. Maybe there is an opening for this approach in studios themselves to stop headphones from continually being reefed apart by people standing on the cable while walking around, it's definitely worth a second thought.

**BORING?** Plugs and sockets were also well represented along with many brands of cabling and accessories. It's so easy to pass over products like this when evaluating the state of the hardware industry yet no amount of fancy-pants equipment will be of any use unless it is interconnected using good cable and connectors. Cabel Labels Pty Ltd of Melbourne helped here by supporting an entire display stand using only a complete range of, you guessed it, cable labels. Their products allow a complete approach to labelling everything from



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#### Author's Background:

Artist Concert Tours - Sydney - Head Technician  
Jands Concert Productions - Sydney - Head Technician  
Jands Electronics - Sydney - Senior Site Foreman



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## AUDIO ON SHOW

one cable through to an entire installation. Not only do they offer IBM software for printing labels in a very legible manner they also have another package which acts as a cable database. Nifty!

Alcatel were also doing very well in the connector stakes. Their very friendly staff were keen to show me their latest innovation, solderless cannon plugs. I must own up here to being a complete sceptic the first time I saw these being hawked at the counter of a music shop in Sydney by one of the sales reps from this company. "Sure" I said, it might work now but how will it be in six months after being plugged and unplugged repeatedly. Well it's about six months since I said that and not only is the cable still working but Alcatel have been given an engineering award for their trouble. Congratulations are indeed in order.

The secret, they tell me, is that the pin connection inside the plug forms a gas-tight connection thus ensuring that no oxidation can occur. Not only this, the preparation of a cable requires the user to merely strip away the outside jacket of the cable, fold back the shield, place the other conductors (unstripped) in the desired pin 2 and 3 configuration and then whammo, screw the shell together. For those who need to terminate large numbers of cables quickly there is also a benchtop tool for ramming the shell together by simply pulling a lever. But wait..... that's not all, because within the plastic internal assembly there are a set of patented "jaws" which, believe me, secure the

cable in a fashion which makes it virtually impossible to pull the cable away from the plug once it is assembled. This feature also assists the solderless connection by guaranteeing that any cable strain is arrested before it can reach through the plug to the pin connections. Add to all this the fact that they are an Australian manufacturer and you've got yourself another homegrown success story.

**AND THE REST!** AWA were displaying their new range of AKG Blue Line microphones which are reputed to be an improvement on their already successful microphone products. This stand also sported a harddisk multi-track recorder housed in a schooldesk sized stand alone pedestal also from AKG. AWA also distribute the Denon range of professional equipment and included in this is the very recently shipped DN1200F CD changer which, when complemented by the DN1200C controller, can access a library of 200 CDs. The controller can apparently support seven CD changers on a proprietary bus which would allow a library of well over 1000 discs to be played. The possible uses of these systems reach over a large area. Imagine the avid home listener having their whole CD collection ready at all times or a hotel could perhaps use this system with the program facilities in the controller to establish different playlists to suit current clientele using their function rooms. Add to this the fact that it is now possible to record one off CDs with up to 99 tracks each and the scenario becomes a total system which could support a

library of over 130,000 pre-recorded messages. Whew!!

I couldn't leave the show without dropping in for an informal off-the-cuff rave with Duncan (guess my weight) Fry from ARX systems. Never short of an idea, Duncan has sort of got a new range of ARX rack mount processors by re-styling prior models to offer a much better front panel layout aided by new colours that are much easier on the eye and much easier to read. Some critics were ready to point out a little too quickly that they thought this was a bit of a cheap stunt. I strongly disagree with these comments. No one seems to mind when companies supply software upgrades to enhance existing products, do they? Corporations all over the world pay huge sums of money to industrial designers so that their products enjoy aesthetic appeal as well as good internal design. Being able to easily identify the legends and text on the front panel of a device is of the utmost importance, after all what good is well designed parameter control if you can't find the dial in a hurry?

Walking around the show I began to wonder about the virtues of large and small exhibiting areas. Time and again I've attended retail and wholesale trade shows only to find that I've forgotten to go to the big stands until last. As time went by at the AES show I found myself doing it again, sticking my head around the corner and looking into the better presented small booths I felt compelled to enter and stay awhile. "So what's with the big

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## ABOUT THE SHOW

- The AES will be 20 years old in 1994.
- The number of exhibitors this year totalled 63 - an increase of 24% over the last convention's 48 in 1991.
- Professional visitors this year approximated 1200 high quality clientele, on top of the thousands of fringe visitors. Do you wonder if you rank in the 1200 - or in 'the thousands'? Attendance was up 34% over 1991.
- Consensus had the World Congress Centre as an excellent venue with more than adequate facilities, this was reflected by the increase in both exhibitors and visitors over the last convention at Moonee Valley.
- The Victorian Rock Foundation Ltd (VRF) as official co-ordinators for this years convention deserve high praise for efficiency and amiable attitude. Hats off to Rob Walker and team.



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## AUDIO ON SHOW

stand phobia?" I asked myself for what seemed like the hundredth time. Suddenly it dawned on me that what was occurring was not a fear of the larger displays but rather I was involuntarily using the generous amounts of space they provide to create short cuts between the busy aisles. Jands seemed to one of the few, if not the only large display I could identify that had managed to circumnavigate this problem by laying out their display in an introspective manner whereby you had to walk into the middle and view products laid out around the edge of their allocated floor space.

I have no idea if this was deliberate but the whole concept did leave me pondering the pro's and con's of how much you could induce attendee's to stay within your display once they had entered.

Surrounding the show were a host of displays and lectures covering many topics and these generated a wealth of information presented in the form of "papers" which served to disseminate the facts in print after the event. Kits containing these papers were available and for the thirty dollars or so that was required to purchase these, one could get a lot more useful information than you could garner from a lot of publications costing a hundred dollars or more.

**SPEAKER COMPARISON.** The editor insisted that I make time to attend the "blindfold" AB speaker comparison test which was set up to supposedly

blow the brand oriented myths in your mind about which speakers *really* sound better than others. The idea was that one set of six small speakers and one set of six large speakers were repetitively fed

*"I detected large volume differences between various test sets and the whole exercise was carried out using a stereo signal summed in mono through only one cabinet at a time. I considered this to very dubious to start with as one of the key points of a sound system is how well it "images" the sound field."*

with identical snippets of a range of music styles. This was done with the products hidden behind a large porous curtain. Participants were supplied with a set of pre-printed sheets displaying segmented bars which represented various frequencies and another set of these which corresponded to an array of virtues attributable to the quality of a speaker system. All equipment involved was to be referenced to a common point and we were to plot our critical appraisal on the sheets provided. After the completion of the test we were told that speaker "A" was from company "X" and so on.

Well I sat through the entire exercise plotting my figures in the semi-darkness atmosphere while wondering what it all came down to. I had no firm idea as to what amplifier was driving which speaker, I detected large volume differences between various test sets and the whole exercise was carried out using a stereo signal summed in mono through only one cabinet at a time. I considered this to very dubious to start with as one of the key points of a sound system is how well it "images" the sound

field. Added to this I had no means at all of establishing how much of the available power in each test amplifier was actually being used and in reality I couldn't help seeing the exercise as a system comparison rather than a cabinet comparison.

The JBL speakers used are from the "Array" series and this in itself left me puzzled as to whether I was listening to single cabinets which were designed to work in a "coupled only" realm. I'm not going to reveal which cabinets I favoured, however, when the lid came off the secrecy and the components were identified I found that I'd rated the order of quality in the same sequence I would have done if I'd simply been told what the brands were and asked to give an opinion without listening at all. The printed evaluation sheets also asked the listener to evaluate sketchy factors such as "sharpness", "fullness" and "noise"!

Now I've done sound for a long time now and unless I've missed something along the way I'm damned if I know how these ambiguous titles can be used to discern the quality difference between a set of scientifically designed, application specific speaker cabinets. I went through with it and instead of blowing myths in my mind about whose equipment really sounds better, the "blindfold test" effectively served to only reinforce my opinion of the already established pecking order perceived by the market.

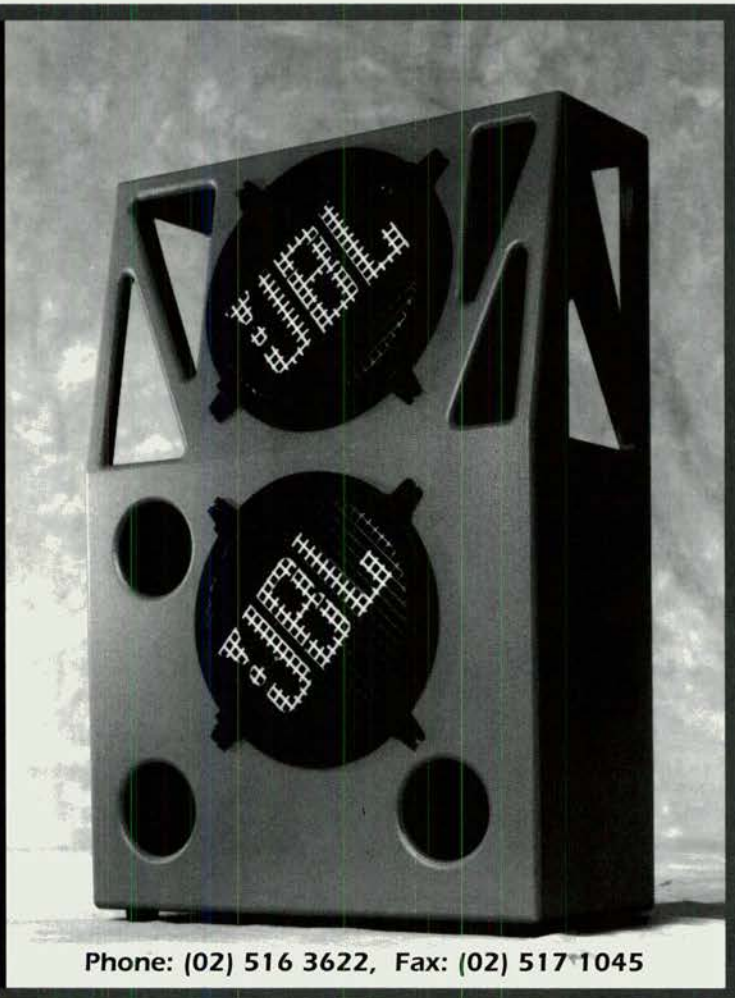
Aside from this I enjoyed the AES show and I would be unhappy if seminars such as this ever disappeared.



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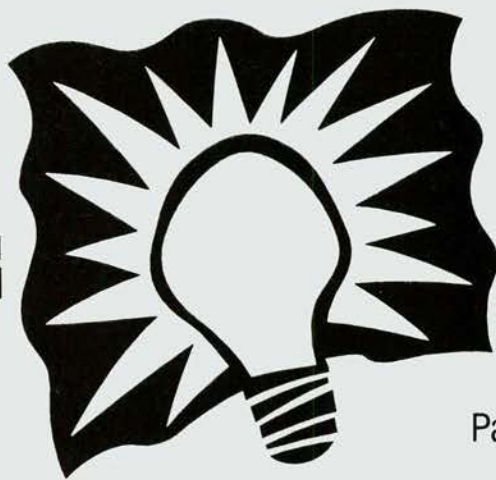


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# The Idiot's Basic LIGHTING Course

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Part One.

*The Idiot's guide to basic stage lighting was created when Sarah Grafton, daughter of the Publishers, did work experience in Sydney Opera House last year. Peter 'Mother' Marshall was kind enough to give her a run through the lighting dept where she learnt some basics. She then went home and confused her mother, who said: 'Why don't we commission The Idiot to write something girls like Sarah could use to further themselves in a career in lighting'. The publisher dutifully called, and we started The Process.*

*At Connections, the way they treat us industry types is that they try to bullshit us that writers don't get paid. We know that real writers, who work for such edifying publications as 'Rolling Stone', get paid upwards of \$1000 a page. That's why there has been a very, very long lead time on this article.*

*Why? Because I'm NOT getting paid for it! (They did make some favourable arrangements with my firm regarding future advertising, though, and I'm off the road during the Winter of Non, Nil and Void. No tours on, so I write!)*

## LIGHTS- SIMPLIFIED

Hang 'em up, plug 'em in and point 'em. Settle back and have a long drink and a self congratulatory smoke. The gig is done, right? Wrong. Lets go to the basics first. This applies equally if you light the amateur theatrical stage, fashion show, or rock band. DO NOT think different technology applies, it is all the same.

## ELECTRICITY

Goes without saying. Every light needs juice. Understand that some lights have 240v lamps, some 120v and some use very low voltage lamps. I'm going to also explain how many of which kind you can run on one power circuit without blowing the fuse, this will save you considerable time and embarrassment.

If the light is a traditional spotlight, meaning it has a lens, then chances are it uses a 240v Tungsten Halogen lamp. The same spotlight, used in the USA would use a 120v lamp. Where it all becomes a touch tricky is the Par 64 Par Can - which uses a 120v lamp here in Australia.

## 120V - & THE PAR CAN

Par 64's are the workhorse of the lighting trade. Watt for Watt and Punch for Buc< they cannot be beaten. You CAN get a 240v lamp for a Par 64, but it doesn't have the exceptional 4000 hour life of the 120v version, nor does it produce anywhere near as much light.

Because the 120v lamp is used commr. only, the can has a different mains plug, usually one with two round live pins- at first glance it looks like a normal 3 pin mains plug. You need to connect two Par 64 cans together via a series splitter for them to work. A series splitter runs

the two lamp filaments in series, see diagram.

A myth: One Par can alone, plugged into a series splitter will explode into 1001 molten fragments, and shower you with glass. Wrong, it just wont work until another Par can is plugged into the series splitter to make the circuit complete.

Another myth: Both par lamps fail together. Wrong and right. If one lamp fails, both stop working. But only till you replace the one failed lamp, because then the circuit is complete and the other will work again. You need a multimeter or circuit checker to establish which has failed, or use trial and error.



2 x 120v Par 64's work together on one 240v circuit. Common, daily practice!

<The SPLITTER isn't a double adaptor, it's a Series Splitter. Some call it a 'twofer'.

When the Par 64 first appeared, people used them together with the two cans linked with internal series splitting inside. Very quickly thereafter it became the practice to run the unique round pin extension leads out to the

cans in the rig and do the splitting back at the dimmer rack. That's why it looks so god-awful there sometimes, because there is a lot of cable running there.

You CAN split up at the Par Can to save some cable runs - meaning run one extension from the other side of the rig over to the matching par can, then Y split them there. Some do this with small rigs, most people get all the round earth leads back to dimmer world and make as neat a job of it as they can.

## PAR DEMOGRAPHICS

On Par, ha ha? The lamp choice extends to things like 32v Aircraft Landing Lights, and some exotic varieties that have considerably less lamp life, in exchange for more light output. These are not really what you want for average, cost effective use. Watch out for them, they come variously stamped as: VNNSP, FFN, FFP, FFR or FFS.

The lamps you'll use are typically denoted NSP (for Narrow Spot) and MFL (for Medium Flood). The WFL is a Wide Flood, trouble is it's too wide and you waste light illuminating the inside of the par can, so you get less luminous intensity on stage.

## PICK A PAR

Look at the front lens, if it's clear and flat the lamp is a VNNSP, or Very Narrow Spot, which burns for 800 hours against 4000 for your preferred NSP. The NSP has a frosted front, while the MFL has a kind of striation pattern, the lens is bending light to make a wider beam. The WFL looks similar to the MFL, so read the back to make sure of what you've got.

## THE LIGHT

Turn it on, the beam is fixed, and oval shaped. The good thing is you can orient the beam to suit the stage, you may have seen lighting guys (girls were never this dumb) reaching into the back of the thing and rotating the lamp while it is on. This is a good way to get a shock and fall off the ladder like I did once, whereupon I broke my arm and a drum kit. Turn the thing OFF before reaching inside!

The NSP Narrow Spot produces a beam spread of 16° x 24° which is very useful. Consider your average 650w profile may produce 20° or 30° spread, this gives you some idea.

MFL Medium Flood has 24° to 44° spread, more like the median spread you get from a Fresnel spot which is set to about half maximum. WFL (Wide) you forget about, please!

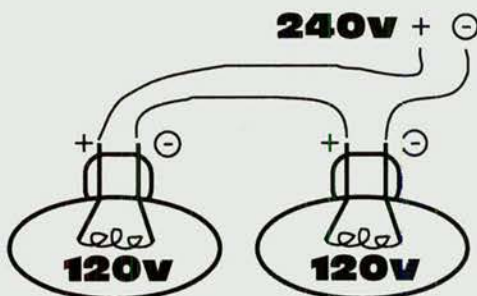
## THE MAINS DRAW

Because you have 2 x 1000w Par 64 lamps on together, you draw 2000 watts, which happens to be 8 amps of power. Between the splitter and the Par Can, you have a 120v, 1000w load. This also happens to be 8 amps, because if you halve

the voltage, you double the amperage.

Ever wondered why the wiring in your car is so heavy? Look in the fuse box, you've got 10 - 15 circuits fused at a minimum of 10 amps each, with a few 20 amps. A lot of amperage for a 12v system, right?

You use one 10 amp round live pin extension



lead per Par Can - understand this lead is carrying 8 amps, so it is working fairly hard and will get warm.

## MELTDOWN?

If you coil a working extension lead, it will get hot and melt together like a radiator coil. Never try to tidy your setup by coiling mains

leads. Look at the setup for a big gig - they loosely run the cables in an extended figure eight, with room for air to get around the insulation.

## COST - EATING OUT!

Cost effective Par 64 are, but of course this still means you cough twice when the local lighting store adds on the 20% tax and you pay the equivalent to a very big night out for two, just to replace a lamp. But consider the very big night out for two type price is divided by 4000 hours lamp life (or more if lucky), and you'll see what I mean. Because in lighting land, this IS cost effective. Try the hourly running cost of a 2000w Fresnel -at lamp replacement time this lamps cost equates to a big WEEKEND away for two!

NEXT TIME: More Lights, of course!

**Warning:** Do NOT wire anything yourself ever. You can die if electrocuted. Ladders can be dangerous. Always disconnect anything from the mains before touching it. Do not adjust lighting fixtures that are turned on, the wiring inside may choose that moment to go live to earth, entrapping your grubby hand around the metal part you are grasping. You could then die. Do not handle lighting or electrical apparatus if sweating. Lights are hot, you could get burnt. Always disconnect fixtures before replacing lamps. Test all circuits to ensure you have earth. If in Queensland, ensure all apparatus tested and tagged to comply with local regulations. Stay at home, it's safer!

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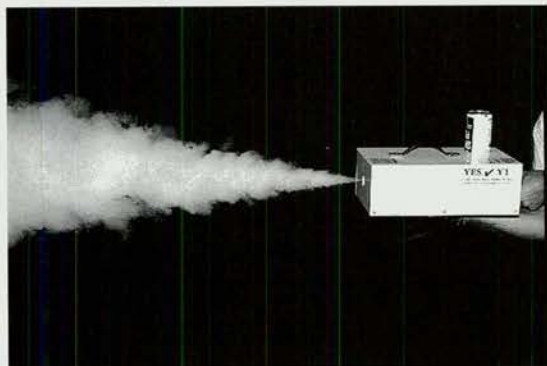
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# Buyers Guide

The monthly list of equipment, hardware and software that YOU use. All available brands are detailed with features and prices. KEEP your copies of Connections!

## Already Profiled:

JUNE/JULY:	Live Mixing Consoles	Profile spotlights
AUGUST:	Studio Mixing Consoles	Moving Lights
SEPTEMBER: (Page 44)	Microphones	Lighting Control

## Coming up:

OCTOBER:	<b>Sound:</b> Amplifiers	<b>Lighting:</b> Dimmers	<b>Deadline:</b> SEPT. 15
NOVEMBER:	Speakers	Fresnel spots	OCT. 15
DECEMBER/JANUARY:	Recorders, OB Production Mixers Powered Mixers	Follow spots Fog Machines Studio Luminaires	NOV. 15 NOV. 15 NOV. 15

**Next Year:** Music Technology products, software, instruments, Colour medium, rigging, cables, audio effectors, processors, keyboards, effects lighting, scrollers, wireless microphones etc etc.

**ARE YOU** a manufacturers/distributor NOT on our current promotion list? (IE: If you don't get regular marketing faxes from us, CALL!) Register your interest in the above to enable us to send you a form for the relevant category. Forms sent 60 days prior to publication to keep prices as current as possible and avoid amendments.

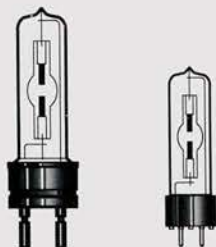
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# MUNCHY

ytes . . . .

Over the last few weeks, Bytcraft has achieved Practical Completion for a number of major projects. I thought we would tell you about them.

As mentioned over recent months, engineer Mike Bauer has been in Hong Kong, along with various other Bytcraft staff from time to time, commissioning the Bytcraft *State* stage movement control system at the Hong Kong Cultural Centre. This system, which controls 32 hydraulic lines, was handed over to the Centre during a recent visit by Stephen Found. *State* provides the Centre with a world standard flying capability which meets the most demanding requirements of modern performing theatre with safety and virtually unlimited artistic flexibility.

Incidentally, Stephen described Hong Kong temperatures of 36 degrees C and 99 percent humidity as "walking through water" but still insists that it's a great place to visit.

Meanwhile, on the local front, Bytcraft has also handed over the lighting control system for the ANZ bank's world headquarters in Melbourne. As previously reported, this installation covers some 30 floors controlling more than 25,000 fluorescent lights and not a single light switch. This advanced control system ensures optimum lighting conditions throughout the building, adapting to variables such as tenancy, ambient light and time of day. Specialist push button panels at strategic locations provide a range of user selectable options.

Bytcraft's hire department is already gearing up for the bump in on 20th September for the Melbourne season of Five Guys which opens at the Athenaeum on 9th October. Bytcraft is providing lighting and control equipment including 32 Strand ColourCall scrollers plus Cantatas, Lekos and special effects including smoke etc.

In March this year, the Canberra Theatre took delivery of their new Gemini 2+ lighting control desk. The report in the April issue of Connections mentioned that this gave Alex Sciberras, Head Electrician for the Theatre, more memory than he could poke a stick at. Well, in addition to the Gemini, Alex has got even more to play with as Bytcraft's Service Manager, Joe Krnjak, has just finished upgrading the desk in his main theatre to a Galaxy 3.

Moving away from lighting and back to stage movement. Have you seen the new Nissan? Launched in Melbourne recently, the new Nissan was flown into the State Theatre at the Victorian Arts Centre, not by 747 or even a helicopter but by the VAC's *State* flying control system, designed and manufactured by Bytcraft.

An extravaganza featuring Kiri te Kanawa was punctuated as the new vehicle was flown in to the amazement of the audience. Using six battens, in two groups of three with weight distribution on pulleys, the advanced "Group" control facilities of the *State* system were used to provide a dramatic yet smooth entrance to centre stage.

**BYTCRAFT** are the sole Australasian distributors for Strand Lighting products and manufacture lighting control and stage movement control systems. Call them : 03 587 2555.

# PETER KEMP: LX

## LAMPS AND LAMP LIFE

There are many factors that govern lamp life at a particular voltage. With incandescent lamps, these are designed for a rated voltage, in studio lamps this is usually quoted as a single lamp voltage, because any deviation from this voltage will result in a change of colour temperature of 3200K, in theatre lamps this is not such a consideration, therefore a lamp voltage range is usually given (eg : 220-230V).

In halogen lamps a chemical process takes place, that only functions within a certain temperature limit, a halogen lamp needs a particular voltage.

Since the filament of an incandescent lamp at room temperature has a considerably lower electrical resistance that at its operating temperature (depending on the type, between 2800 and 3300 K), a high initial current impulse will flow when starting the lamp. In lamps with high luminous efficacy, this starting current impulse can reach 10 to 20 times the value of the lamp current. However, it decreases quickly, depending on the lamp type. The rated lamp current is reached after 0.2 - 0.8 seconds. In lamps with a thin filament wire (mains voltage lamps with low input power), the rated current is reached quicker than in lamps with a thick filament wire (low-voltage with high input power).

Under-voltage will decrease the filament temperature and therefore the rate of evaporation. To give you an example 5% under voltage will result in 200% life expectancy, however the reduced evaporation of tungsten which has long reaching effect, sometimes resulting in filament collapses.

Over voltage will increase the filament temperature and therefore cause a higher rate of evaporation. To give you an example 5% over voltage results in 50% life expectancy.

In general terms it is not possible to quote minimum or maximum voltages for halogen lamps as it is governed by temperature.

Years ago I was lucky enough to get hold of a stage/studio lamp characteristics calculator put out by General Electric. This is an extremely useful tool and gives you an approximate guide to the effect that voltage variation has on incandescent lamps.

For example :

Actual voltage	Lamp voltage	% rated life	% watts	% light	% K change in col. temp
200	240	1000	76	54	-200
210	240	600	83	65	-140
220	240	300	88	75	-100
230	240	180	94	87	-50
240	240	100	100	100	0
250	240	58	108	116	58
260	240	35	113	130	100
270	240	20	122	150	155
280	240	13	129	170	200
22	24	320	87	73	-105
23	24	180	94	87	-50
24	24	100	100	100	0
25	24	62	107	115	50
26	24	37	112	129	105

Obviously if you are working with low voltage lamps, say 12v/24a, an increase or decrease of 1 voltage is quite dramatic on lamp life and the other characteristics, as it is proportionally a high change. A point to remember, the life rating of a lamp is actually the average life obtained by testing many lamps over a long period of production.

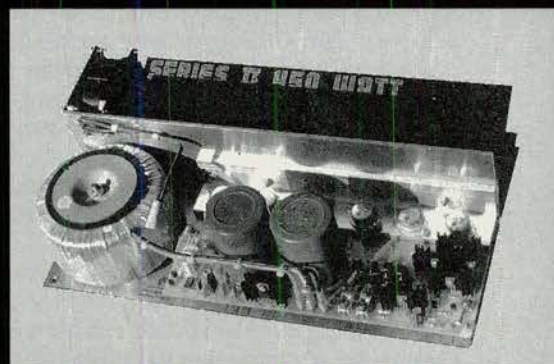
\*Peter is boss at Coemar DeSisti Aust. Call (03) 467-8666.



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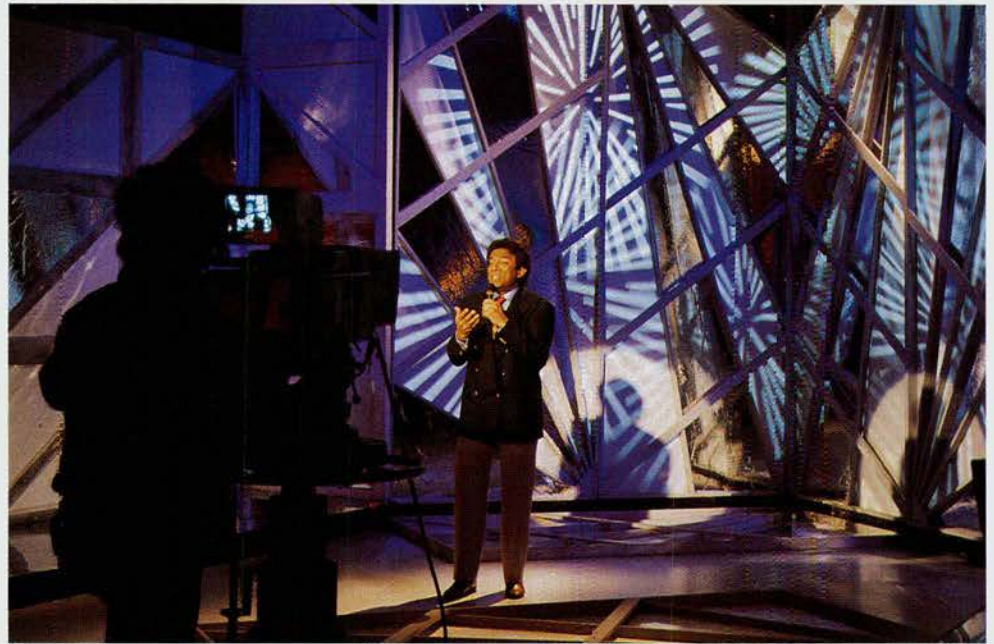
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# 9



*Catriona Forcer is a closet TV addict, so when we sent her to the Sydney Studio's of Channel 9, she was in her element!*

Only I could pick the day to visit the Ray Martin Show when the guests included Jeffrey Archer, Bronwyn Bishop and Kamahl. Well, Kamahl seems nice enough but the other two.....actually it just occurred to me that if you wrote Martin Ray it could almost be a type of light. (*Stick to reviews - not comedy, Cat! -Ed*)

Lighting director that day was Barry Crocker (no not HIM, but his son) who also works on A Current Affair, The News and even Ernie & Denise. Barry's day starts at 7am when he hurriedly has to design the set for the day's show which usually features three different live bands. Times that by five and that's a lot of looks that he has to come up with each week.

"The set is already designed and I pick my colours hoping they will match the song," said Barry. "Most of the time they don't! We get a general idea from our 'music meeting' where I hear the songs. Staging then set it all up and we rig it."

The interview with Barry was constantly interrupted by the floor manager and director who were trying to rehearse the first act - Doug Parkinson. For some reason he had decided at the last moment to sing 'Hip To Be Square' instead of the planned song thus throwing all lighting plans out of the window.

"He's looking a bit lonely down here, Barry," the voice over the intercom kept saying. Barry said the most common problem working on these type of shows is that the work soon becomes stale and boring.

"You keep having to come up with the same things all the time," he said. "You want to change but the talent sometimes doesn't change. It's very hard to keep coming up with something new. (*Barry, can you bring up 414, 'he 1K?*) We don't have the time to bring in new equipment and try it out because basically it's crash television. It's get it in there and do it as fast as you can. You have about two rehearsals at the most and hopefully you've got something in that. It's really frustrating because you know you can do better if you had the time. (*Barry, is the segment happening in the downstairs area?*)"

In television you need a lot more light than on stage. You have to make the person look good whereas at a live show you can basically just put a followspot on them or light

them from the side, it doesn't really matter because people see a visual thing that's happening all the time. But when you actually have to be captivated, looking at a screen, it has to be pleasing to the eye. If someone's got a great big nose shadow across their face you notice it. (*Can you bring up 159?*) It's a totally different sort of lighting all together."

Barry admits he came to be in his job through 'a lovely thing called nepotism' whilst working for his father. Throughout the show Barry sits up in his control room running the show through a Strand Galaxy board.

"We have a whole pile of memories and each memory (*Take that one out and bring up 459*) that I can bring up on the board here means like no.1 memory is one position where Ray will sit down in front of the audience to talk to them. So that's lit for that area then we go to another area etc. You record all those memories and have them all on a disc and we can recall them at any time. It's a bit like a tour desk. (*Can you bring up 358*) We have an operator downstairs on the floor using a Jands desk to run the Goldenscans. (*Watch camera 4*) I tell him what I want and he usually adds to it. During the show I'm talking to five people (*Any comedians in this?*)"

The Ray Martin set stays in Studio 2 all week until Friday when the whole studio is ripped out so that a drama can be put in as well as The Sports Show, Business Sunday & The Sunday programme. Next door in Studio 1 The Today Show and A Current Affair are constantly being pulled in and out.

"Once we had Ray Burgess on (*We need to lose the 151 on the audience*) and we totally lost him in the smoke," laughed Barry. "He was just gone for the whole song, there were people running in waving large cards trying to disperse the smoke. The funniest thing I ever saw was when we had Gary Glitter on and it was just hysterical. We had these old smoke machines that were oil and we had stage hands pulling open the big doors for him to come flying in to open the show. As soon as they opened out, he came running in, slipped on the oil and went flying towards and into the camera. He got up with a massive whole in his stocking and did the song with his hair all over the place. I was doing followspot and I couldn't stop laughing."

Lighting assistant Dale Martin (no relation this time)

took me for a tour around the studio.

"We're running a bit behind, we're just jumping into the 90's," he said. "In Melbourne they have Vari\*lites and things mainly because of Hey Hey It's Saturday. They have sort of an unlimited budget whereas we're very limited here but that's life. The versatility of the Goldenscans with the variety of music that we get is helpful and we get the most out of the light. Unfortunately we can't control smoke very well in this studio because of the air conditioning which causes it to disappear straight up and out of the building. We're using a ZR20 at the moment but we're trying a Smoke Processor from Lightmoves which is a nice machine. We tried a cracker the other week which was very nice and works fantastic in here because it doesn't follow heat. I found that the smoke that came out of it didn't become air particles but added to them."

Before Channel 9 added the Goldenscans to Studio 2, there were only the usual 5Ks and 10Ks with colours on them to use as well as a couple of CCTs with gobos in them.

The six Goldenscans are hired from Lotts of Watts who Dale describes as a reliable company. A variety of moving lights were tried including the Miniscan which didn't give out enough power for the cameras. Dale believes a Superscan would be the best mirror type of moving light for them because of its power in fact you can actually see red quite clearly on the camera with a Superscan, something which is hard to see even in the Goldenscans.

"Obviously if we had a load of money and I had a choice, I would go for Vari\*lites," Dale told me. "Or a company with lots of different types of moving lights so you could chop and change around. Maybe someone like ATS or TCP. We're always looking to upgrade and for something different just to give the music another look. Having the Goldenscans in here all the time you tend to repeat yourself too much. I found I was getting bored and running out of ideas. Today I'm doing followspots with Cris Moore, Husain Alicajic is running the Goldenscans and Loraine Stacey is doing the floor but we change around every day."

One job Loraine has to do is check that the Minties which are thrown into the audience by the warm-up comedian don't land in any of the lights. Apparently several small fires have nearly been started this way! Occasionally Dale has taken over as lighting director especially when Barry sometimes sings on the show (!). Dale worked on the touring scene for about eight years working with companies like Showcorp and Jands but mainly for himself. It was whilst working with a band called The Deltones he met the people at Channel 9 and was offered freelance work with them. Now Dale is employed full time by the company.

"It's good because I get to do a lot of bands and as I wasn't trained in television but touring I've seen a lot of different designs," he said. "I don't get to see so many shows now as there is a lot of overtime here but every opportunity I get I go to see shows. Being in here I've learnt a lot about colour temperatures, different types of lights and the best way to use them. Normally we use 1K fresnels, 2K fresnels, 5Ks which are switchable to 2.5 and a couple of 10Ks but they are all tungsten. When we do outside stuff we use HMI lamps which are all daylight in colour temperature."

The rigging in Studio 2 is quite easy as the lights are on 62 batons which can be easily lowered to the floor. Over what is termed as the homebase area there is gridding but those lights tend to stay static throughout the week. The only disadvantage to the batons is that you can't get inbetween them to hang a light. The Strand 20amp dimmers are placed in a separate environmentally controlled room.

Most artists that appear on the show are very cooperative

with the lighting guys, the only thing they may get touchy about is the smoke. Unfortunately a lot of smoke has to be punched in so the cameras can pick up the light beams, again the camera does not see as much as the eye.

Dale Martin holds the record for being responsible for the longest amount of blackout live on air - 23 seconds.

"There was one time I had all the upstage memories up and we were adjusting a few memories. I put memory 6, which is Ray's main memory, in the board and was adjusting all the lights up in the pre-set section of the board when Barry called up through the headsets 'record that as a memory and lose it'. I went bang on the record button not realising I had recorded over Ray's main memory production number and then put the whole lot onto disc so Ray's main memory wasn't existant at all. So when we went to bring up lights on homebase after a production number there wasn't anything there! We had to get the backup disc and load that back into the desk. Another time we had the comedian Mike Williams coming on a fluorescent shorts and we were going to balckout the studio so they would glow. At the time I was very unfamiliar with the Galaxy desk as I'd only been here a couple of months. I flicked the blackout switch down not realising it doesn't return itself to on again, the other side blackout switch does but this one didn't. I flicked it down and instead of letting it go so the lamp snapped back to full intensity, I bought the master faders down and then let go of the blackout switch thinking it had returned itself. When the cue came I slowly faded them back up but nothing happened. The director was screaming 'lights up' and I was sitting there trying to realise what I had done. It's the scariest thing that has ever happened to me in here but there's nothing you can do, it's live to air and it's gone all around Australia."

Dale Martin (left) with Barry Crocker



Dale with un-used relics

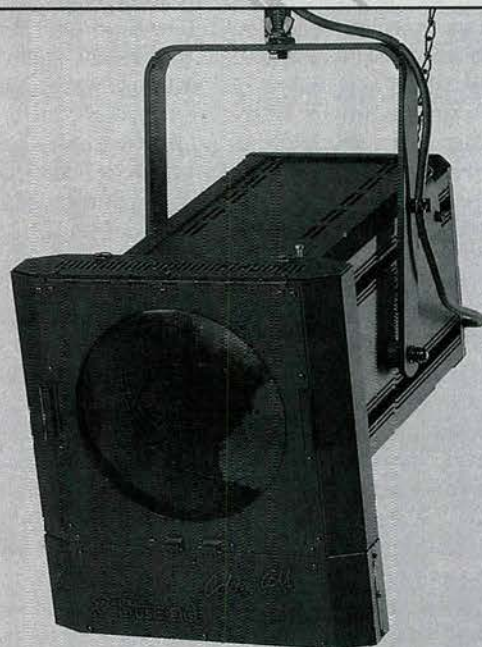


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## Radio Waves

(To be read with any commercial FM station playing in the background)

Help - save us - just what is happening to Radio these days? Are we stuck in a time warp or what? Turn it on and you'll hear Cream played more than in the 60's. Hands up everyone who is as sick of the Classic Hits and Memories format as I am. Of course, I can't see you, but I'm willing to bet there's a whole heap of you out there. So why is every mainstream radio station playing this shit? Because the 90's have been hijacked by the baby boomers, that glut of births that followed WW2, who are all now in their late 30's or early 40's and desperately trying to regain their lost youth. All the programmers, the people who decide what the stations will play, are baby boomers themselves, and they're obsessed with playing stuff that makes them feel young again.

Where does this leave listeners under 35? Out in the cold, from the look of it.

OK - I admit it - I'm a baby boomer. I'm part of the post war bulge (*anyone who's met you can see that, Dunk. -Ed*). But I'm not as obsessed with the 60's and 70's as radio programmers would like to believe - in fact I'm sick to bloody death of it all.

A Melbourne FM station ran a phone in last year to find out why the arse had dropped out of their ratings, and then we had to put up with them endlessly spouting this bilge: "Thank you for helping us rebuild this radio station. Now it's up to us. You told us you wanted to hear more classic hits...." and so on. What utter nonsense. When nearly every radio station is playing the same mix of classic hits, hits and memories, or whatever they want to call it, I simply can't believe that people would ring them up and tell them to play more of the same old shit.

I mean, it's not as if they played different tracks - it's always the same ones. If I hear the opening chords to 'Start Me Up' again I'll go heave. Triple J wins by default. Sure, it's a little bit 'Dr Martens and a Government grant please', but at least it plays music that is more relevant than endless '20 Top Partystoppers for Old Grogans' that the commercial stations play. I'd never have heard The Cruel Sea, the Sisters of Mercy, or Nirvana if we hadn't switched the factory radios over to Triple J, and sometimes

we even switch to PBS (when we're desperate!)

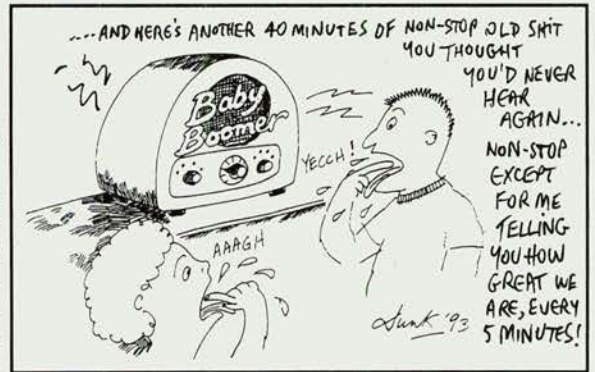
Of course, the major (Mushroom excepted) record companies (my favourite bloodsuckers) love all this classic hits format because it's safe. Money for nothing, or at least minimal royalties. Nobody has to make any difficult decisions about what new bands to sign up and release, they just keep churning out the stuff that innovative people back in the sixties and seventies had the foresight to release. Remaster some back catalogue stuff for CDs? Sure, spend whatever's necessary; it's a guaranteed moneyspinner. Sign up a new band? Sorry - too risky.

Is this really what todays 18/20 year olds really want to listen to? I remember all of these songs from when they were first released. They were good then because they were new, and they were sung by people of the same age group as me. Now they are boring old farts. I never wanted to listen to old farts when I was growing up in the sixties, and I can't believe that young people in the nineties want to either.

So what are all these Classic Hits? Well, a lot of them were absolute drivel when they were recorded, and are still drivel now. Pop music by its very nature is ephemeral. It's meant to be listened to, enjoyed for a while, got sick of, and then replaced by something new. It's not meant to be endlessly regurgitated as if it were some kind of Bulimic Rock.

For me, there are very few truly classic rock songs. My list wouldn't include any Elton John (Classic middle-of-the-road) or Moody Blues (Classic bland) or any 70's disco stuff (especially Born to be Alive - obviously written by someone for whom English is way down their list of languages). All that stuff is for Saturday night comedy shows to take this piss out of! My list would be something like - Jailhouse Rock, La Grange, Smoke on the Water, Black Dog, and Sharp Dressed Man.

When I've heard all them, I'd like to hear something new. Something good. People are writing them, bands are recording them, but nobody in radio is game to play them. If I was a



young spurter today I'd feel really cheated by what I hear on mainstream commercial radio. And I'm sure they do. For instance, one station has the Top 30 at 7 - the top 30 most requested songs of that day at 7 pm. Do they ring up and request all the old crap the station's been playing all day? Pigs arse! They request loud, angry, brash, raucous music - music created by young people for young people, not stuff that their parents used to bop to in their flares and beads.

But does this obvious listener antipathy affect the programming? No way. In fact, things are getting worse. Melbourne (and I presume other states, from what my spies tell me,) is currently wallowing in a glut of Classic Rock nostalgia that would surely turn the strongest stomach. 30 years in 30 days from one station, heavily promo'd by pseudo huskily voiced girls they must have recruited from a 0055 Dial-a-Fat dirty phone call service. PS. Memo to the production engineers - ease up on the Aural Exciter a bit - it givth the girlth a tewible lithp.

30 years! Holy hot camel shit, Batman, that's a long time ago. What would have happened in the 60's if radio had only played Classic Hits from the 30's and 40's? Sound crazy to you? Of course it is, but the time analogy is the same. Bands like the Beatles, Rolling Stones, Who etc would have all given up in disgust and probably ended up working for the public service or selling insurance. Is this the future for today's young bands? It certainly is while commercial radio stations continue their necrophilious orgy of only playing songs that are at least ten years old. Talented young musicians are entitled to ask "What the FOX going on?" (A Melbourne pun!)

\*At Connections office we've also taken the extreme step of tuning into JJJ, Commercial FM is just SO STALE. Dunk speaks for many. -Ed



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### Chapter 3: Directivity and Angular Coverage of Loudspeakers (continued)

#### Directional Characteristics of Combined Radiators (continued)

Dissimilar horns can be splayed with a resulting angle the sum of the two coverage angles in the plane of the splay. Splaying may be done in the vertical plane with similar results. Figure 3-12 presents an example of horn splaying in the horizontal plane.

Horns may be stacked in a vertical array to improve pattern control at low frequencies. The JBL flat-front Bi-Radials, because of their relatively small vertical mouth dimension, exhibit a broadening of their vertical pattern control below about 2 kHz. When used in vertical stacks of three or four units, the effective vertical mouth dimension is much larger than that of a single horn. The result, as shown in Figure 3-13, is tighter pattern control down to about 500 Hz. In such vertical in-line arrays, the resulting horizontal pattern is the same as for a single horn. Additional details of stacking are given in Technical Note Volume 1, Number 7.

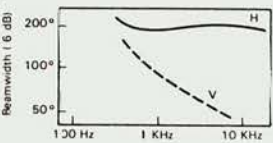
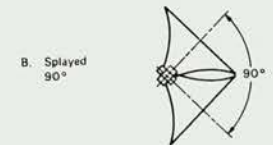
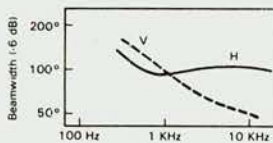
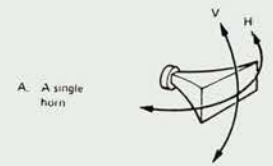


FIGURE 3-12. Horn splaying for Wider Coverage

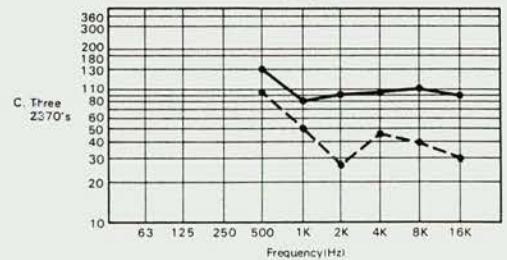
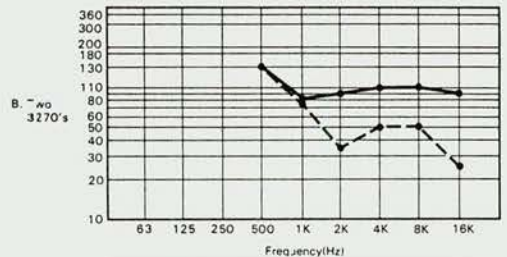
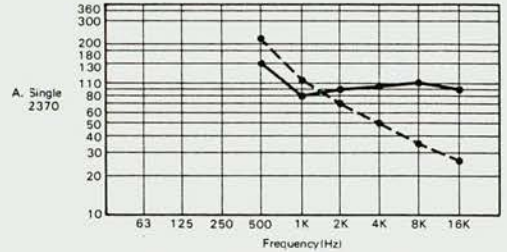


FIGURE 3-13 Stacking Horns for Higher Directivity at Low Frequencies (Solid Line, Horizontal -6 dB Beamwidth, Dashed Line, Vertical -6 dB Beamwidth)

### Chapter 4: An Outdoor Sound Reinforcement System

#### Introduction

Our study of sound reinforcement systems begins with an analysis of a simple outdoor system. The outdoor environment is relatively free of reflecting surfaces, and we will make the simplifying assumption that free field conditions exist. A basic reinforcement system is shown in Figure 4-1A. The essential acoustical elements are the talker, microphone, loudspeaker and listener. The electrical diagram of the system is shown at B. The dotted line indicates the acoustical feedback path which exists around the electrical system.

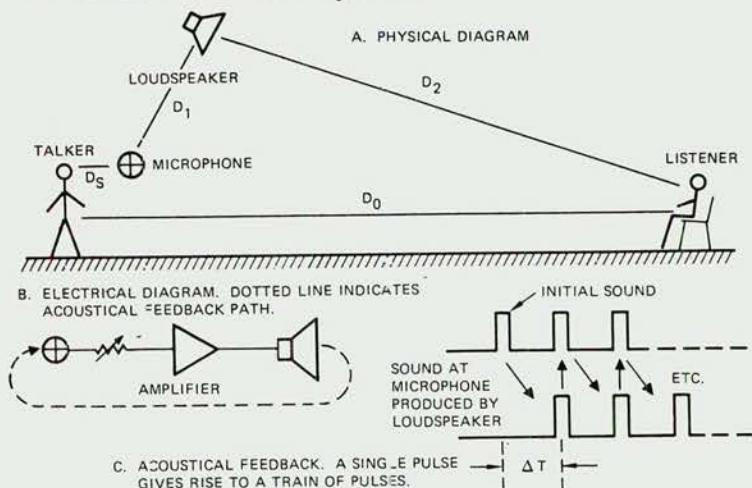


FIGURE 4-1 A Simple Outdoor Reinforcement System (Continues)

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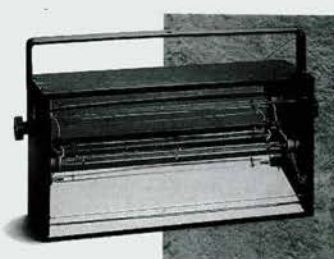
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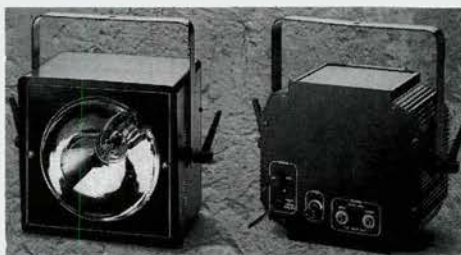
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# Power Factor Correction

By Richard Cadena

Very often the technical specifications of lighting products include some notation about power factor correction. Even if there is no mention of power factor correction, it does play an important part in how some lighting instruments perform. Unless you have studied AC circuits or electrical power distribution, you have probably wondered what the power factor is and why it needs to be corrected. To understand how this impacts a lighting instrument, you must first have a basic understanding of alternating current and AC circuits.

In common household electricity, the voltage is constantly alternating between positive voltage and negative voltage sinusoidally at a rate of sixty times per second. That means that if you were to look at a plot of voltage on the vertical axis and the time on the horizontal axis, then it would look like a sine wave. The intent of this article is not to provide a course on AC circuits. So if I have lost you already, then you should go to the library and check out a book on simple AC circuits. Once you grasp the concept of alternating current, then you can begin to understand how it works with different types of loads.

In a purely resistive load, the voltage and the current are in phase with one another. When the voltage rises, the current in the circuit rises right along with it. When it falls, so does the current. An example of a resistive load is an incandescent lamp. In a capacitive load, the current leads the voltage. In other words, as the current begins to rise towards its positive peak, the voltage lags behind but soon follows. The amount of lag depends on the amount of capacitance; the greater the capacitance, the greater the lag. An example of a capacitive load is a strobe circuit with a large capacitor or a starter for a fluorescent lamp. In an inductive load, just the opposite is true; the voltage leads the current. An example of an inductive load is a discharge lamp circuit consisting of a ballast, a starter, and a discharge lamp.

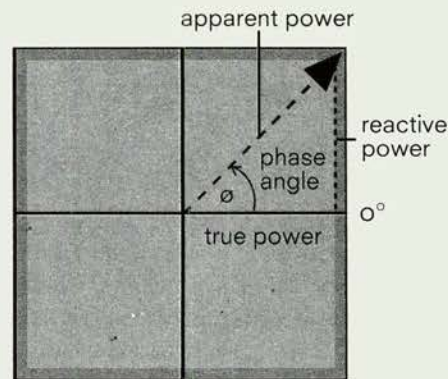
In the real world, there are no purely resistive loads. Every real world load has some component of capacitance or inductance, however large or small. Transformers, ballasts,

chokes, motors and similar type components introduce considerable amounts of inductance in a circuit. Capacitance can be introduced by the layout of PC boards, long wire leads, or capacitive components. The combination of the resistance and capacitive reactance (or inductive reactance) is called the impedance. The impedance completely describes the characteristics of an electrical load.

When an electrical load has an inductive component, it draws more current than its purely resistive counterpart. The reason for this is clear if you understand the vector drawing of an inductive load as shown above. In essence, the inductive component of the load stores energy, which requires an initial surge of current to "feed" it. This energy is not used up, but is later "returned" to the source unused. The so called "apparent" power, or the amount of power the load seems to be using, is different than the true power. The true power is that which is actually being consumed by the load. The power factor is the product of the two, or;

**Power Factor = True Power / by Apparent Power**

The problem with highly inductive loads is that they draw more current than they need. That means that the entire electrical distribution system must be upgraded to deliver the higher demand for power. Everything from the power plant to the electrical outlet has to be able to handle this increase in current. The electrical generator, the power lines, the electrical substation, the distribution transformers, the electrical panel, the circuit breakers, the house wiring and the electrical outlets all have to be upgraded at a considerable cost. This is the reason the electric utility companies sometimes itemize your electric bill with two distinct components; electrical usage and demand. What that means is that if you have a highly inductive load, then you require larger amounts of current even though you are not using it all. In essence, you are "borrowing" it for a short while and then returning it. But the utility company still has to be able to supply it on demand, which means they have to spend a whole lot more money on copper and other resources. That's also the reason



you see banks of capacitors on electric distribution poles and in factories that consume large amounts of electrical power. If you are unfamiliar with power line capacitors, they look like rectangular metal boxes with glass insulators sticking out of the top. These banks of capacitors serve to counteract the effects of an inductive load and bring the current back in line with the voltage. Remember, a capacitive load causes the current to lead the voltage while an inductive load does just the opposite. The combination of the two cancel each other out. It's a clever way for the electrical utilities to save money on copper and other resources.

So what does this mean to those of us in the lighting business? It means that any time we are dealing with inductive loads, such as most moving light systems, we should be aware of the current requirements and the power factor. The smaller the power factor, the less efficiently the electrical system is being utilized. That translates to lost dollars to the end user. Instead of spending his money on light, he is wasting it on bigger electrical panels, more circuit breakers, more wiring, and more labor to install it all. The solution is to make sure you are using instruments that have been power factor corrected. Power factor correction is a simple matter of installing a power capacitor capable of handling enough power. Not all lighting manufacturers build in power factor correction because of price competition and the added cost. There's a great deal to know about power factor correction, and I encourage you to read as much as you can about it. As lighting designers, lighting installers and lighting professionals, we need to make a conscious effort to conserve resources. Not only is it good for the customer, but it's good for the environment, and that is no small consideration.

*Richard Cadena is a major sales engineer at Lightwave Research, AKA High End Systems, the Austin, Texas based makers of Intellabeam and Trackspot. This article was re-printed after first appearing in the Summer '93 issue of 'Show Technology' magazine.*

# How YOUR loudspeakers conspire to confuse you. (And your Audience!)

By David Connor\*

**H**ave you ever noticed when you take your favourite speaker boxes, stack them in some multiple, fly them or use them outdoors, that they don't sound at all like you would expect? Our discussion this month and next is about getting music systems to work in *any* venue and is called Spectral Balance, Clarity and the Time Domain.

## Catching up.

Last issue, we talked about some of the differences between speech and music systems and re-affirmed motherhood in saying that spectral balance (both listening-position amplitude *and* the power response) are really important if the music system is to sound good.

By power response, we mean the frequency response of the overall radiated power and not the power handling. The total sound pressure summed at all points in space is the acoustic power. The amplitude response of the sound pressure at the listening point is usually called the frequency response.

In the **June** issue, we gave you a flow chart of the way to design a sound system for any venue. The first box called "define user requirements" differentiated between speech and music and gave three main requirements for music. These were **spectral** and **coverage** integrity, maximum SPL and clarity (direct to reverberant ratio).

Maximum SPL is basically about driver power handling, cone and diaphragm excursions and amplifier grunt. Spectral and coverage integrity relates to the tonal balance *everywhere* in the room. Clarity is about the energy difference between the early and late sounds that reach a listener.

## Types of sound fields and the time domain

A loudspeaker system produces 4 types of sound fields which reach a listener. They are direct sound, early reflections, late reflections and reverberant sound. Tonal balance and clarity are affected by all of them.

The loudspeakers interact with each other and the room like this:

1. add and subtract with each other
2. bounce off walls and seating etc., and combine at the sitting position
3. contribute to the reverberant field

The **audience** have these events happening to them:

1. hear the sound arriving from the performer

2. hear the sound arriving from the various loudspeaker elements
3. hear the sound arriving from the early and late reflections
4. hear the sound arriving from the reverberant field

The **direct sound** is that which reaches a listener directly from the speaker without having bounced off any surface (*or going to jail and getting \$200!*).

**Early reflections** are those which arrive less than about 40 ms (milliseconds) or so after the direct sound. **Late reflections** arrive after 40 ms or so and merge into the reverberant field. The **reverberant field** is the one that takes the time to decay away. When someone near you at a venue claps their hands you will hear all these fields.

The following figure shows the energy time curve measured with a concert rig at a major Australian concert venue. The four fields are easily identified.

## Direct field

We talked at length in the **April** issue about the direct field frequency response and highlighted the degradation caused by phase cancellations resulting when loudspeakers are located acoustically near each other. "*Acoustically near*" means between a quarter and a wavelength or two at a given frequency). You usually can't put two standard boxes side by

side to increase the coverage *without* corrupting the direct field. Phase cancellations at low frequencies are the *main reason* why large variations in the low frequency energy occur in moderate to large rooms. With speakers that are spaced apart by 3 or 4 meters, the high frequencies add as a power sum (3 dB of additional SPL per doubling of number of speakers), while the low frequencies

become a large interference pattern (6 dB peaks of additional SPL per doubling of speakers along with nulls).

There are two main things to consider in getting good direct field tonal balance. Firstly, you have to avoid these phase cancellations and secondly, ensure that the speaker system provides even coverage (consistent over the listening area. Radiation patterns (or beamwidths) are defined as the angle where the response is -6 dB relative to on-axis, and if this angle at 400 Hz is different to the angle at 2 kHz, then sure as your heart now beats, you will hear a difference in sound to that on-axis of the speaker.

Ideally, the coverage pattern of a system must be constant with frequency, and also compensate for the difference in the distance to listeners at the front and rear of a venue. We do not yet have such an ideal speaker.

So, you can see that as far as the direct field is concerned, there is no such thing as a

*Last issue, we talked about some of the differences between speech and music systems - and re-affirmed motherhood!*

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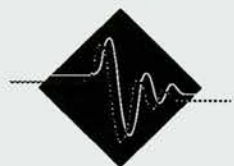
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Next month is the info on the early, late and reverberant fields and the way in which they affect the universe - and the music!

\*The Acoustician is a continuing series by Dave Connor from Elecoustics, a Sydney based firm of specialist acoustic engineers.

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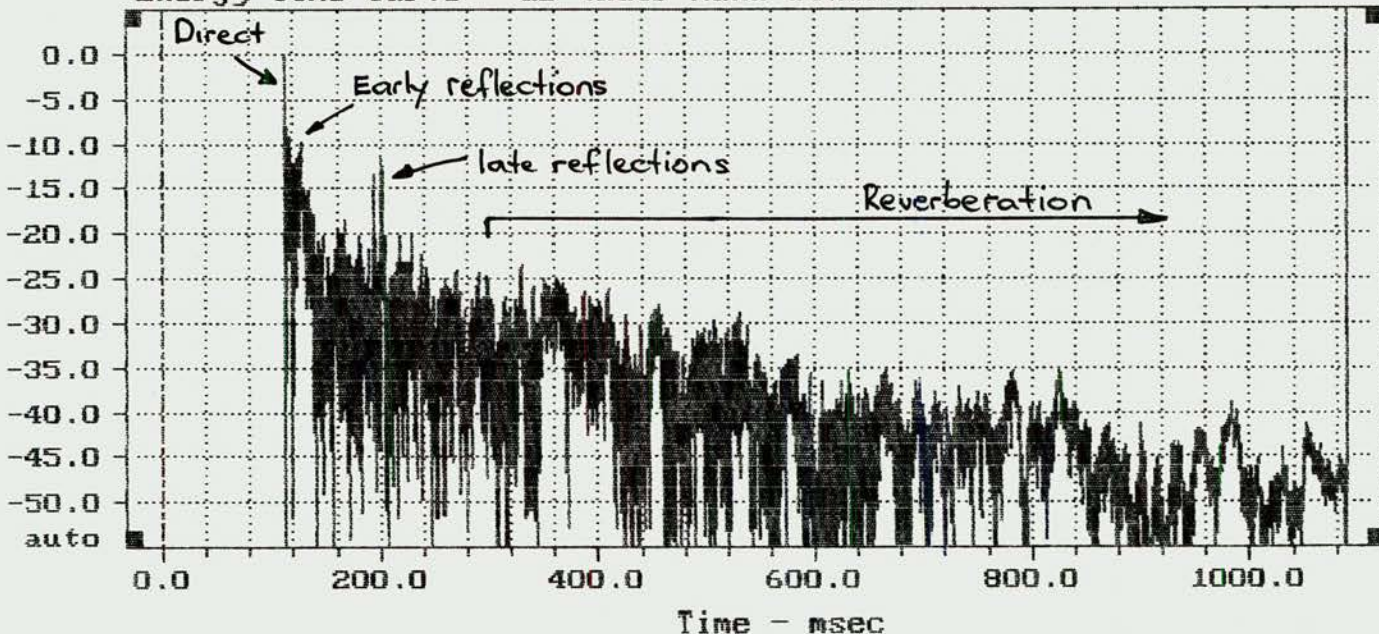
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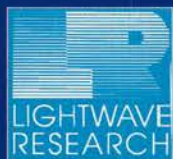
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# Fun! ?

**WHAT** will become of this essential page in Connections? Here we are, with The Punter no longer sending us his complex crosswords because he insisted we start awarding prizes for the neatest completed and most correct entry each month.

Of course he has no knowledge of supplier politics, and so is unaware that to offer ANY kind of prize on these pages is fraught with danger. Poor old Punter, we will try to get him a job working for, or nearby, a major distribution firm someday!

◆ THEN we delve into the library to pull out the latest steaming hot 'Little Sharkey' adventure, only to find - gasp - there are NO MORE on file! Yup, the one below, despite the fact it says quite clearly "TO BE CONTINUED", is the LAST we have here. Now we have put a message through to Little Sharkey HQ at Enrec Studios in Kurri Kurri, where Ed Matzenik manages to cut some tracks in between penning the life and times of the actually real Little Sharkey who lives in Tamworth - but WHAT will HAPPEN NEXT??? Will Sharkey return??

◆ Fortunately (or otherwise, depending on your disposition), Doctor Light (AKA Mike Tanner) has failed to forward his illuminating column for this issue, so the space at left is now gleefully turned over to our resident funster who has a special treat for you all!

## DRUMMER JOKES!

Collected lovingly by The EDITOR.

1. At a MENSA Banquet, at the head of the table are two guys with IQ's over 200. They're wearing tuxedos and glasses that are as thick as the bottom of lemonade bottles. One says to the other: "I know, why don't we have a conversation about the relationship between metaphysics and sensuality - and the impact of that relationship, with regards to the dominant moral ideology of the 19th century on the Reichian concept of the repressed orgasm as a national psychological disorder of the German nation state?"

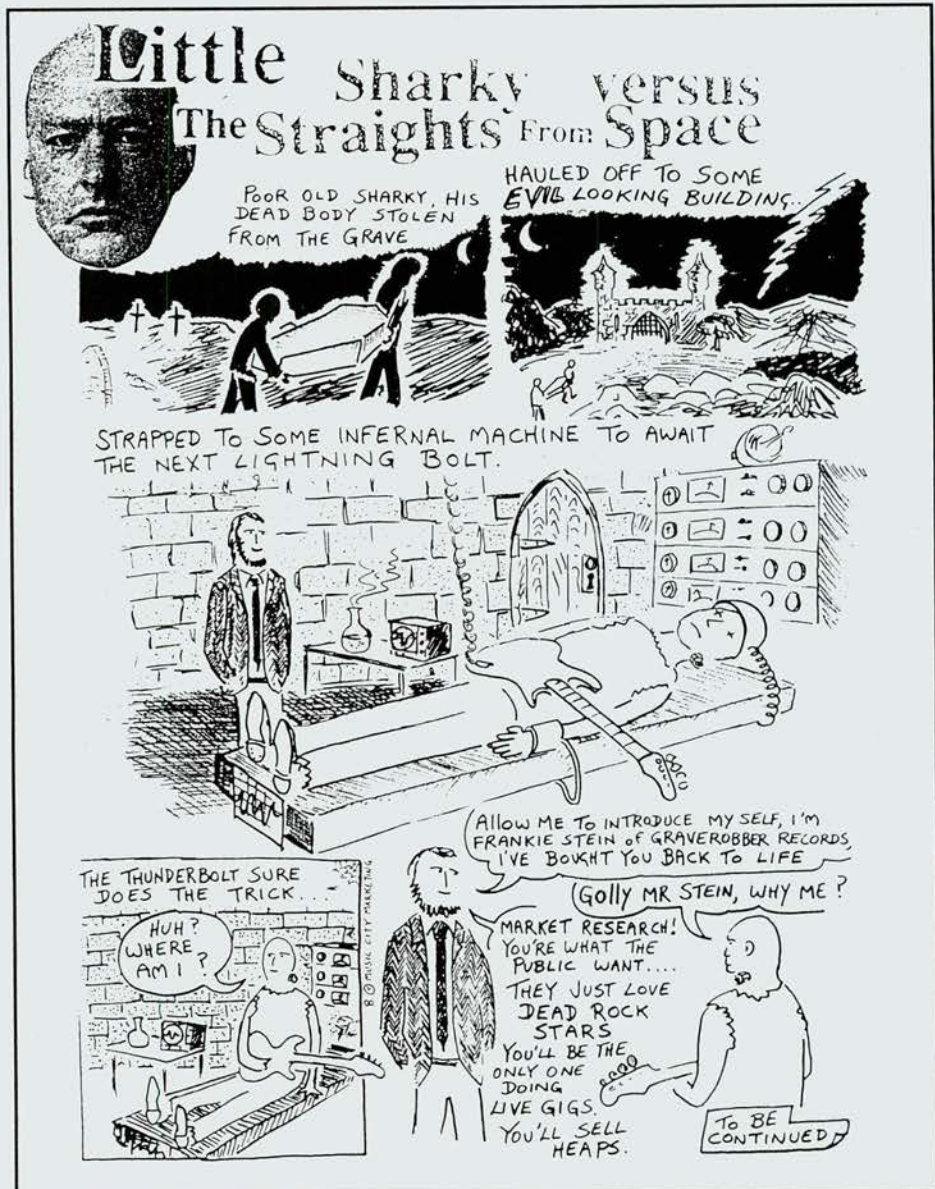
"Super", says his mate, but to make it interesting, why dcn't we do it in Swahili?"

Further down the table are two guys, sitting in front of a card that says "IQ of 130+". "Fancy a chat about nuclear physics?" says one. "Sure", says his mate, but to make it interesting, let's conduct the conversation in middle French!"

At the very end of the table behind a place card that declares: "IQ of MINUS 20" are two guys. They stare into space for a while. Finally one turns to the other and asks: "What sticks do you use?"

2. Q: Why did the old drummer get excited when he completed a 10 piece jigsaw puzzle in 3 months? A: Because on the box it said "3 - 5 years!"

3. What's the difference between a dead drummer in the middle of the road and a dead chicken in the middle of the road? A: Skid marks before the Chicken! Get it? Yuk Yuk!



# PEOPLE



Miss Australia 1992, Rebecca Simic. A happy Eleco wireless microphone customer, pictured at an Audio Telex dealer function.



Allan Graham (left) & Alan Bramley (right) from LSC. Pictured in Singapore at the Pro Audio & Lighting show



Mark Carpenter, Technical Director, NSW University School of Theatre Studies.



It's Graham Goble, from the Old Man River Band, recently awarded by APRA



Roger Wilson, head of Jands N. Z., recently subject to a staff buyout.



Sue Hickson (GUVT) & Arthur (ATS), who assisted High End Systems in Singapore.



Mark Dryden (left), Ian Whiterman (middle) & Andrew Rushen (right) from Penn Fabrication Aust. P/L. A big effort in Singapore



Gary Anderson, new starter at Southbank Trading.



Lightmoves Sydney recently hosted an open day, where customers and curious poured over Celco, Teatro, Abstract, LeMaitre and other goodies on show. Kieran Usher (above) gives 'hands on' Celco demo.



John Gunton, Dynalite boss, old pal of The Editor!



Patrick & Lynn Cahill, from Theatrecrafts, Perth. Also in Singapore for the tradeshow.



Bruno Dedora (left) embraces Peter Kemp (right), of Coemar De Sisti, Aust.



John Berrett (Aust Ballet, left), Keith Yates, and Lightmoves boss Jonathan Ciddor (right).

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# GREAT Mistakes

## My Big Nite of Terror at the Footie!

We all know the pure joy of doing shows for drunken footballers. By comparison footballers are tame: it's the 40,000 euphoric fans that have been 'premier-ship starved' for 32 years that create heart palpitations and high blood pressure.

Once upon a time there was (is) a DJ called Dave. Dave had been providing faultless entertainment to this particular club for eight years. Pleased with Dave's services, the officials at the club asked Dave to provide an entertainment package for their possible party (if they were to be in the grand final). Can do. Having known Dave for some time he called me at home one evening, explaining that he needed some gear for a party. Well, the party was to be for around 20,000 people (they thought) outside on an oval.

Two weeks later the team has kicked and handpassed its way into the Grand Final. OK we're on. We load in Friday evening, for the 2,000 people, sit down breakfast. Start 5:00 a.m., Show 6:00 a.m. 5:45 a.m. no power! The club's facilities are somewhat overloaded with urns, grills, etc., etc. Thankyou Lord for providing the world with Aggrecko generators. After hauling the big orange power pack into place, we're happy. We leave the chefs in a panic and continue.

DJ Dave and I oversee the band's engineer and make relative adjustments. Apart from the rain etc. the morning goes quite well. 20 or so reporters and photographers are crowding our current PM and creating general havoc. After they leave (approx. 8:30 a.m.) our current fearless leader lets what's left of his hair down and prances around the mud based dance floor with one of the saucy singers. Unfortunately his minders didn't see the lone photographer tucked behind the FX rack. SNAP. Front page.

Breakfast is over; it's 11:00a.m. and the rest of the crew are arriving. We move the double Martin to the main mobile stage in the centre of the oval and add another triple to fatten the whole thing up. 100 odd cans, varilites, smoke, follow spots etc.

In the breakfast 'tent' (approx. 20,000 sq. ft.) two HUGE T.V. screens are portraying the heroic spartans in full flight. The odd 136 db. roar signifies goal scolding activities.

It's 4:00 p.m. and judging by the roaring from the

'tent', tonight is going to be different. By 5:00 p.m. they've won. Oh Shit, 3000 'tent' people are emerging as gladiators instead of punters.

17 Crew members make short work of the dance floor and we prepare for the onslaught! Sound check and we have about 20% of the crowd rocking to Yeah, Yeah, one two. The footballs flying around are only second to the amount of beer cans being hurled in pure ecstasy (Melbourne is funny like that).

The sheet says the show starts at 8:00 p.m. Ha Ha! The show starts at sound check. By 6:30 we have about 20,000 kidneys starting to absorb and distribute the golden liquid that has been consumed during the day. By 8:00 p.m., 400,000 little pink toes are tapping. You can't move. FOH position is being protected by two inadequate security people that are more accustomed to sitting outside a bank than a FOH scaffold tower with 'pushy joyous throngs'.

About 9:30 p.m. I make an executive decision and calmly phone the police hot line on behalf of the world that's not drunk. By 10:00 p.m. we have 10 police, 15 security people (if that's what you call them) and about 10 instant security people (crew shirts to friendly rough necks).

The team comes on at 10:30 p.m., after strict instructions to security of all sorts, that only team members and officials were to be permitted on stage. This was promptly ignored. Well this is "the invasion of the stage snatchers", usual story: mum, dad, sons, cousins, girlfriends, dogs, cats and pet llamas. That poor stage; full credit to the staging company for the extra welds on the axles, otherwise 20 tonnes of human DNA and electronics would have meshed together in an almighty drop.

FOH position is being invaded from all angles (the roof seemed popular), desperate calls over the talkback for security. 10 Crew have been relegated to "punter rescue squad". The crush produced several varieties of carrot wine.

By 11:30 p.m. things are wild but O.K. The energy is being danced away slowly. The club, being highly experienced in these matters, have consulted with the police patrol and it's been decided to stop the show at Midnight.

-Stewart Guthrie, Sound Power Systems.

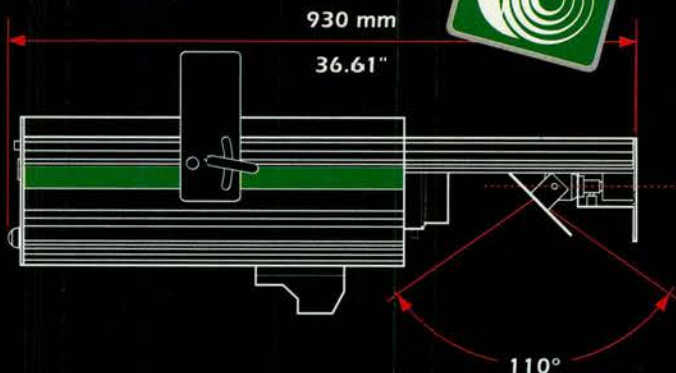
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