

# Channels

Summer  
Holiday  
edition  
Light reading



The professional Sound and Lighting magazine

Number 10

15th December 1991 - 1st Feb 1992

## Dire Straits outdoors in Perth Jands 200,000w PA

**PERTH, West Australia.** Jands Production Services assembled the mother of all sound reinforcement systems for Dire Straits outdoor concert here. System Engineer Wyn Milson oversaw the setup of the system, which comprised (split per side of stage) 60 Turbosound TMS 3, 72 Clair Bros. Audio S4's, £4 J.P.S. sub-low cabinets (fitted with JBL VGC 2241 18" speakers) and 12 JBL long throw horns fitted with 2445 drivers. A further 4 TMS-3's were used as centrefill cabinets. Amplification came from 196 Jands 920 power amplifiers, providing 203,840 watts. The A.C. supply powering the amplifiers was J.P.S.' new power distribution system, based on 2 x 200 amps per phase distribution panels (1 per side of stage), feeding 8 x 40 amps per phase sub boards.

Over Winter, JPS invested heavily in redesign and custom building of power distribution, to meet a new Australian standard - continued on Page 8



## LATE NEWS

### E.V. parent company, Mark IV, settles with Soundcraft

A dispute regarding a console called 'Interface', shown for the first time at the Melbourne AES show, has been resolved. The legal statement reads: "Soundcraft, manufacturers of the 200 Delta, complained to Mark IV, who agreed to withdraw the Interface product from the market worldwide. The parties have now resolved their legal differences and will each continue to offer a range of competitive products."



'Interface' pictured at Melbourne AES show

## Sound Reinforcement Update Gloria Estefan

Turn to Page 9



### Mystery surrounds rushed sale of Strand LX Hire

After three months of speculation, Strand Hire has been offered for sale, on "an unconditional cash basis and not subject to finance." The letter announcing the sale set a timetable of just one month to complete the sale - which includes the holiday week of Christmas. This was all that was allowed for due diligence, searches, valuation, inspection, negotiation, finance facility implementation, preparation and execution of legal agreements, transfer of leases, phone services, power, insurances, exchange of contracts, and settlement. A party that received the letter from Strand (which included a five page confidentiality agreement that the party did not sign or complete) was not happy. "They clearly have already determined the outcome of this sale. It cannot proceed on a commercial basis in the little time allowed. That they sat on their hands for three months indicates this." A spokesman for Strand denied this. -JC

LD Chas Herington reveals all

## Dire Straits Lightshow

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- ..... and lot's MORE!

## Soundcraft Spirit MONITOR Console

Soundcraft has expanded the Spirit range to include an 8 send monitor console, available in 16 or 24 inputs. Significantly, Spirit Monitor features a linear fader for every input, unlike it's larger stablemate, the 12 send Delta Monitor. The 8 sends can be pre or post the linear fader, determined by internal links over sends 1-4 and 5-8 on each input.

Delta Monitor is available with up to 40 channels, and is configured for series foldback use only. It would appear Soundcraft have bestowed a little flexibility on Spirit Monitor, for while it is truly a versatile and effective foldback desk, it COULD also - at a pinch - be used for FOH. I know Peter Twartz at Jands will grit his

-continued on Page 15

**Why is Dire Straits world tour sponsored by Philips?** PR man George Sprague explains: "Last tour we linked Dire Straits with C.D.'s very successfully, this time it's Digital Compact Cassettes which will be the next big thing in consumer hi-fi. Because this is such a long tour, the DCC doesn't get released until the band is in the USA, when the timing is spot on".

**Yamaha are going for it with the YPDR 'burn your own' CD system,** having delivered at least 7 systems at presstime, with more imminent. Recipients are- Turramurra Music, PA People, Dex Audio, 4IP radio, Giant Studio's, Cloud Studio's, and the NSW Police - for archiving phone taps & evidence.

## Data Flash



Guns & Roses are on tour up in North World, using 153 Dataflash Illuminators, which are a high powered strobe head that is fully dimmable and individually addressable. They are yet another Lightwave Research product. The resultant effects possibilities are enhanced by options like coloured domes, narrow beam reflectors and dichroic filters. GUVT have them here, call Noel Bourme (Mel's brother?) on (07) 358-5022 for info.

New wireless microphone systems abound, two notable releases are the new Audio Technica ATW-1236 (the new version of the system mentioned in the Gloria Estefan review this issue) and the TOA WM range. TOA have a modular approach, with a half rack width preamp/receiver that accepts two channels, which can be either diversity or normal VHF.

The microphones come in TOA or Shure SM58 head, and also a lavalier version. The attraction of the system is you can build it up as you go. Price guide- (retail) Diversity receiver with one channel: \$833, Two channels \$1252, TOA head mic \$447, Shure head mic \$592, Lavalier \$304. Non diversity saves about \$200 1 channel, \$350 2 channels. (For more info call your nearest AWA sales office.)

Then we hop over to Audio Technica, which is also VHF with 6 legal frequencies. The receiver and handheld mic with A-T head retails at \$1995, and a lapel system is available also. (For more info call any Yamaha dealer, or Yamaha direct on 03 699 2388. Ask for Stephen Leonard.) *Toa WT-870 ▼*



# Channels

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**Advertising:** Dayle Schirripa, (02) 516-3622.  
**All other enquiries:** to the editor, Julius Grafton (02) 876-2612, fax (02) 876-5717. Produced on a Mac with Aldus Pagemaker and Freehand. Computer help: David Mulholland. Printed by Lionheart, Phone (02) 666-5162. Aldus Freehand diagrams by Josh Luo.  
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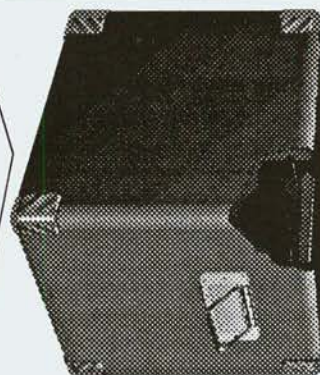
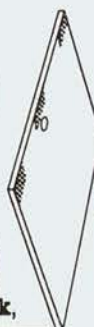
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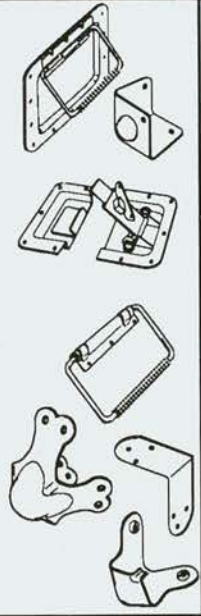
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## EQ, Time Alignment, dual 4 way Crossover-it's Digital, from TOA, & has a strange name

Toa have been an active player in the audio contracting field for some time, but they have just leapfrogged into high technology with a Digital Processing System known as Saori. This is one unit that does all, converting your analogue signal to digital, then equalising, crossing over, and time delaying. Then your signal is D/A outputted in full glorious ... analogue.

The advantage here is claimed to be real and tangible improvements in quality and a reduction in noise. This ought to be the case, truth is in listening. The digital domain is still occasionally plagued by rogue clock noise and little miscounts here and there. Whether our Saori is troubled by such gremlins remains to be seen.

Showco have a similar type of system that they custom build to drive their very prestige Prism System, so clearly they are unconcerned with the potential (or otherwise) for glitches. The comparison might be a little mismatched, but the idea is similar.

Saori is a 5 rack unit tall device with an LCD screen, set of function keys, cursor control and



parameter/character wheel. Beneath this address unit are modules: an ADC module converts Analogue to Digital, and has a pair of conventional gain controls. A pair of third octave equaliser modules follow, each with a limiter stage and bypass switch. The two crossover modules allow 2, 3 or 4 way operation with limit, then there is a single timing module. Four D/A modules finish off the system, each has a pair of bar-graphs to show output level, and a pair of mute switches.

Importers AWA plan a series of dealer workshops, with a TOA personage on hand to demonstrate the system. We'll keep you posted.

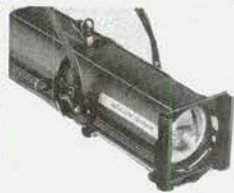
## Selecon Zoomspot 1200

Years ago when the Strand T Spot was king, Selecon Reid in New Zealand were regarded as a quirky little shop of horrors. Jeremy Collins made trip after trip to Australia, akin to beating his head against a brick wall, trying to get acceptance for the company's products. Time passed, Jeremy took control, the Reid part of the name was dropped, and today the company builds lanterns that are right up there with the best.

The latest offering is the Zoomspot 1200, which has been engineered for the serious theatre market, but is equally at home anywhere a zoom profile is needed. Three lens tray options allow Narrow (8° - 16°), Medium (16° - 32°) and Wide (22° - 40°) beamspreads. To change a lens is easy, the Selecon people insist.

A new shutter system makes for easier beam masking, with less potential for shutter snag. A rotatable Gobo holder allows up to 45° of gobo rotation. Customised extrusion makes yoke adjustment easy, the yoke can be moved to any position along the length of the lanterns, making balance adjustable when using scrollers.

**-Topstage are a Selecon outlet. 06 280-5710**



Fog Machines are the bane of humanity, every brand I've yet seen has suffered some kind of reliability problem over the passage of time. Given that qualification, Lightwave Research (of Intellabeam fame) have had good acceptance of their F-100, which is selling OK down under too. It is a high output machine, (comparable to a Jem ZR-20) has a timer and 0-10v analogue remote control. If used with "Atmospheres Lighting Enhancement Fluid" (sounds like a new designer drug to me) then reliability should be as good as you'll get. List price inc. tax is \$1750, from GUVT, Call Noel Bourne (07) 358-5022 for data.

**If a rumour doing the rounds proves correct, the Dept. of Communications is ready to expand the cellular phone network into 900 megahertz, which spells 'goodnight' to ultra expensive Sony and Sennhieser wireless mic systems, which would be moved to where? Outside the window of the receiver, possibly, where adding another crystal will not help. Expensive modifications to receivers could be required. Watch this space.**

# AUX 1

Following last issues report that Studiomaster was in strife, Hill - who manufacture amplifiers, mixers and other audio, have fallen on hard times. Most recently, the firm debuted a novel amplifier, named "Chameleon" which has some very expensive engineering twists, necessary to deliver very high claimed power output.

How about the A & R person, sitting in on a mix, who suggested; "I think it needs some more MIDI", and "I'd like some more bass on all frequencies". Yup, sure thing, how's that sound?

**Ian Basey is now Rosco Australia P/L, after the withdrawal of former Rosco distributors Strand Lighting from Australia. Ian has represented Rosco for Pix, then Jands, then Strand, now for himself.**

While we technical people adopt a superior attitude to musicians, thespians and performers alike, let us not overlook those on the fringe of our industry. Take Gerry Harrington for example. He promotes the Australian Centrefold Girl Tour, and his opening quote in a Good Weekend interview went: "Nifty (the roadie) hates me and thinks I'm a right prick, (I've got) a note from Tina telling me what a deadshit I was and that nobody loved me ... business is terrible ... they are trying to repossess the car ... Sydney doesn't want us back under any circumstances ... the cruise was a total disaster. The guy that hired us got the sack, everyone thinks I'm an arsehole."

**It's curtains for what was once Apel Audio, (then The Touring Plant, otherwise known as The Touring Shrub) which 10 years ago startled the biz by assembling a novel and expensive pair of P.A. systems based on Amek/TAC consoles, Court boxes, and Perreaux amps. Financed with guarantees given by various relatives of various people, the financiers are now in possession, with most recent operator John Busst attempting to negotiate a buyer.**

The Dark Coma club in Sydney is set to re-open, Kardomah no more, now to be known as the Tom Tom Club. Calum McLean is the licensee, manager and booker, the rent is said to be less than the \$3950 quoted back when previous tenant, Hauptmann Trading went into liquidation. Renovations have started.

**Daryl Hoy of Scion Audio is to be awarded the Channels Valiant Service to the Industry trophy for his record run - 7 years - as soundman to Kamahl. Curiously a previous soundman, after 10 years service, became a sound-woman! The cruellest cut of all? Is Daryl ready?**

Norman Korte is the new sales manager at Topstage Productions in Canberra. Topstage recently completed a "Bobby McGee's" installation in Canberra. This one made JBL South Pacific man, N. Z. based Mr Gumbie, happy.

**Peter Henskins and the Jands Service Dept have separated, Henskins has an advert running in the Sydney music press: "Sydney's Premier Sound Engineer is Back ...."**



**Sennhieser** of Wedemark Germany have laid off 100 personnel, leaving a workforce of 1,150. The company suffered a 10% reduction in turnover during 1990.

Remember **Hiwatt**? The guy who designed all those valve backline and PA amps in the '70's, Martin Clinch, has a new amplifier concept in the UK. It is a company called Chevin Research, and the amp is a mosfet 1200 watt creature that weighs 9kg. The Editor is aghast...

**Peavey** are getting seriously into MIDI, with the appointment of keyboard playing MIDI expert Martin Lister. "The MIDI market has never really been exploited", he was reported as saying while exhibiting at the MIDI Music Show in London. Peavey want to reposition public perception that they are a backline amp manufacturer, preferring the 'high tech, advancing company' look. First step is to burn all those shiny nylon psuedo satin 'Peavey' tour jackets ....

**Yamaha** have revealed the PM4000 SR console, which is said to have improved channel metering over the PM 3000, with the addition of a six-segment LED meter on each channel. It comes in 32, 40 or 48 inputs, with 12 aux. sends & 8 stereo channels in a smaller frame than before.

**Neumann** had a hidden branch to it's family tree, according to New York's Gotham Technology group. "Allied planes lay siege to Berlin, forcing Georg Neumann and his company to flee, setting up shop inside the Eastern Block, behind the Iron Curtain." Apparently Gotham traced the firm, which for 50 years has supplied "high quality condenser microphones to the Soviet Bloc". Even more surprising, the Gotham boys claim MC Microphones still make the M7 capsule, which made the original U47 so good.

**Selecon** have started to crack the big one, the Euro market ... with Dutch distributor Jansen Jansen schlepping over 100 lanterns into the local production of Les Miserables. The Auckland company has recently appointed M&M Lighting as U.K. distributors. Strand beware!

**Allen & Heath**, (AHB) they who make mixing consoles, have been gobbled up by Harman UK, the holding company of Soundcraft. Harman also hold JBL and DOD Electronics. The question of Allen & Heath competing with Soundcraft was dismissed, a spokesman for Harman said "General Motors have lines that compete with each other, and sometimes in two different areas, and there is nothing wrong with that". AHB will now be back on the tradeshow circuit, after avoiding same for some time due to money shortages.

**AKG** have taken 30% of Amek, who also own Total Audio Concepts - (TAC). Confused? AKG are on the takeover trail .... they control DBX, Orban, Turbosound, BSS & Quedsted. Does this mean AWA will now distribute these lines, or will Frank Hinton take on AKG? Will the year 2000 see just two conglomerates controlling the world audio market? Will they decide Maron Farming is more lucrative? Will there be an audio industry in the year 2000? Stay tuned, dear reader .....

*All new 14" neodymium low frequency transducer & new h/f driver*

## JBL unveil new Array Series

**NEW YORK-** JBL have announced the first of a new range called "Array Series", which are described as "the ultimate in performance for both touring and fixed installations". JBL has been the preferred supplier of components for the world's leading concert sound companies, most of whom build their own 'proprietary' speaker cabinets.

JBL haven't had a universally accepted top-end loudspeaker system range that caters to these companies, who need controlled dispersion arrayable cabinets with bulletproof flying facilities.

Array series is the range that tomorrow's concert production company will hopefully buy off the shelf, particularly now that the JBL ES52000 Digital Controller is available. The first Array Series model is the 4892, loaded with an all



new 14" neodymium woofer, and a neodymium 1.5" (exit dia.) high frequency compression driver on a new 45° bi-radial horn.

A new type of rigging hardware - Secure Array Flying Ergonomics (S.A.F.E. to you) allows any desired coverage to be achieved quickly. A complete line of hardware is available. The cabinet itself is trapezoidal, and nicely finished as our picture shows.

The ES52000 processor handles crossover, limiting and time alignment in a digital format, and offers factory programmed system control for the Array Series

(and other JBL lines) with the offer that: *it will control sound without changing it's tonal quality at any volume level.* This is the big benefit, JBL are dead against the concept of a 'processed system', and insist (rightly) that the ES 52000 is not a 'processor', rather a Digital Controller.

## Publication Directory

*This is where we reveal specialist publications from around the world, and attempt to rate them. Our ratings are very much rule of thumb, decide for yourself!*

### Studio Sound & Broadcast Engineering News

Glossy 100 page monthly from the UK, high technical values, good broadbased audio content for studio and live sound operators alike.

Strictly qualified distribution - prepare a letter, outlining your industry base, job title, purchasing authority, company size and your area of responsibility (Production, Maintenance, Performer etc) and mail to: Studio Sound, Spotlight Publications Ltd, 8th floor, Ludgate House, 245 Blackfrairs Rd, London SE1 9YA. We rate this magazine \*\*\*\* out of a possible 5 stars.

### Music & Sound Retailer

If you import or distribute equipment, this is for you. Glossy, tabloid and 60 - 100 pages per month. Send money, sorry no free list, sorry no backstage pass - cost is \$28 US, mail to: Music & Sound Retailer, 25 Willowdale Ave, Port Washington, NY 11050. We rate this magazine \*\*\* out of a possible 5, not because it is in any way deficient, rather it's appeal to Channels readers might be a little fringe. It's sort of like an adult version of Sonics.

## Afterburner



Another product shown at the recent Melbourne (and also the New York) AES shows and worthy of mention is the ARX Afterburner, a single or dual channel compressor limiter that is different. In dual channel mode, a feature called "Enhance" lets you punch in some 50Hz and 10kHz boost post effect, for a more upfront sound. This must be why they call it an Afterburner maybe?

Even better is the "Alternate" mode which splits the two channels into high and low frequency mono mode compressor limiter, with the split happening at 250Hz. This eliminates the perception of 'pumping' and sucking that you can hear on bass heavy material limited across a whole bandwidth.

The ARX people have featured nice wide LED metering for both output level and gain reduction on each channel, and the device has differential balanced inputs and outputs on both XLR and jacks, and of course a sidechain insert point. A stereo link allows the Afterburner to be used as a stereo system limiter with both channels tracking as a stereo pair.

Price is around \$1000, handy application notes are available too. Call ARX on (03) 555 7859.

Eat to the Street Beat, get down go underground, Thrash and Fish Music expert, some time lighting operator and resident research scientist at Jands, David Timmins, reports the Annandale Hotel has acquired a lightrig. It seems the venue waited the obligatory two years for council permission, and then renovated, creating a larger raised stage, drum riser and rear stage access. 15 cans are hung, BYO shifter because tri-nuts don't exist, nor do gels. The venue is now much better than it was.

\* Dumb Ass venue management look out. Do you work in Venues that are managed by pea brained cretins? You know the type, they produce a rider that details the 10 (or 20) commandments in terse prose, like: "No gaff to be left ANYWHERE" when there are no spotbars and an eight foot ceiling! Then there is the turkey junior manager with a Tandy noisemeter jabbing the sound engineer in the back, just when the mix starts to sound good, because the oh-so-trendy decor features glass bricks and a concrete roof, with no attention to acoustics whatsoever.

Let's GANG UP, and use this new column, Venue Watch to bring these appalling over-sights into public view. Phone or Fax your Venue-Watch item to Channels, where it will be verified and paraded for all to see. Equally, you may like to share information regarding handy hints at certain venues, like the previously undiscovered goods lift that Frank Calvi swears he found at Cronulla Leagues Club.

Maybe you have just worked a new-ish venue for the first time, in which case let us know how it ranks. Did your truck get booked while you were unloading? Does the stage lift operate without warning while you have your legs over the side? Did your right leg get amputated because of this? (Your editor almost lost both legs in this manner at Canberra Theatre oncel) So remember, Channels is information in, information out. If you don't tell us, we don't know!

Call us! ☎ Phone (02) 876-2612  
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## GLOSSARY

### Biz talk



**J** Jack - A common term for 6.5mm phone plug connector. "Jack Plug."

**Jands** - the company established in 1967 by Bruce Jackson and Philip Story, who couldn't think of a name for it, so it became J and S. It still is today, & will be tomorrow!

**Joule** - unit of energy, also used to express the power of a strobe. (There are not many 'J's!)

**Junction Box** - a box that provides cable terminations at jacks or connections such as the XL-type microphone connections at the end of a multi-conductor microphone cable.

**J600** - Australia's most popular amplifier.

# Sapphyre studio console



Multitrack recording is a moveable feast in the '90's, with Digital recorders that link together making today's 8 track into tomorrow's 32 track studio. This can create great angst for Marmaduke, who has every reason to spend his inheritance on a 16 track facility, but fears his expansion path may be a tortuous one when it comes to the mixing console. This is because the design of studio consoles has tended to follow the idea that for every track, you need a bus - and that a 24:16 console is useless for 24 track recording.

Soundcraft recognise this, as evidenced by the Spirit Studio console, and have adopted a similar approach with the new Sapphyre console, a top-end, in-line design that allows you to work from each input channel direct to a track, along with 8 buses for simultaneous subgrouping. The logic attached to this is that you buy a large enough Sapphyre frame for your expansion possibilities, then when you do add an extra 8 tracks the console remains bricked into your studio. No need to throw baby out with the bathwater!

Facilities found on the input/output module include a noisegate, which has a side-chain input, bandpass filter, threshold and release

control. This is versatile gate!

Sapphyre has Soundcraft's padless mic amp, extensive EQ, 6 aux. sends, a linear fader for 'Channel' and then beneath, another for 'Monitor'. Along the way are extensive assignment facilities which let you bounce tracks, send a subgroup out, and flexibly route without extra inputs, outputs, or repatching. Each channel has 4 mute groups, and a LED ramp on the meterbridge.

The five frame options are 20, 28, 36, 44 and 56 modules - with or without patchbay. All standard configurations feature three dual stereo input channels which are suited for effects returns. Optionally available is a dual line input module, suitable for direct input of electronic instruments, which often hang out in control rooms.

Sapphyre is really rather ingenious, offering the shortest path between Tracklaying, Mixdown and Bouncing I've yet seen in an upmarket console. Allied to its user friendliness is the styling, which to these eyes is the vision splendid. Peter Twartz at Jands has all the information, including a handy Quick Reference Guide that illustrates the in's and out's - literally. Call him on (02) 516-3622.

## Sydney Theatre projects announced

Sydney's Theatre shuffle has become a race, with two new projects mooted. Last issue we reported the planned expansion of Her Majesty's and the myopia of Sydney Council who just couldn't give a stuff about the Capitol Theatre. Now the guy that everyone canned for demolishing the Regent Theatre - Leon Fink - has announced plans for a \$3 million lyric theatre opposite the cinema stretch in Sydney's George Street. More significantly a 2,000 seat lyric theatre is proposed for Darling Harbour's Goldsborough Mort woolstore site.

Fink has had plans approved for a 650 seat theatre, with a stage suitable for handling performances like Circus Oz and Max Gillies. Fink was the creator of Kinsela's, a small nightclub/theatre concept that was very popular but unprofitable through the '80's.

At 650 seats the new theatre is on the site of an almost completed mega nightclub, and is comparable in size to the Footbridge theatre, which is heavily booked with shows like Grease & Jerry's Girls. The smart money has it that this time Leon will make a buck. A second stage of his project includes a tavern type performance area for one man shows and comedy. Ironically the site is opposite Fink's old Regent, held by Bevelon Investments.

The Darling Harbour proposal would open in '93, designed by architect Frank Smith, it would be suitable for the shows that Sydney currently is missing, like Phantom and Miss Saigon. Denis Irvine is the theatre consultant. The site is owned by Tichfield Ltd, who's MD is Dr. Rolf Godesar. The Theatre would be close in size to London's Royal.

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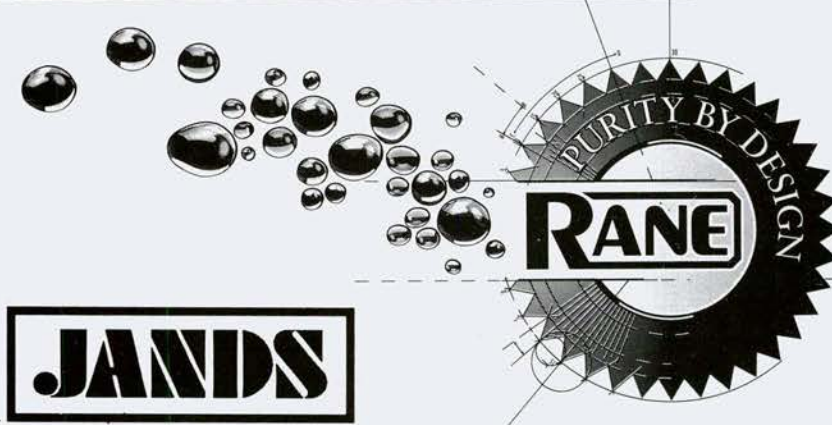
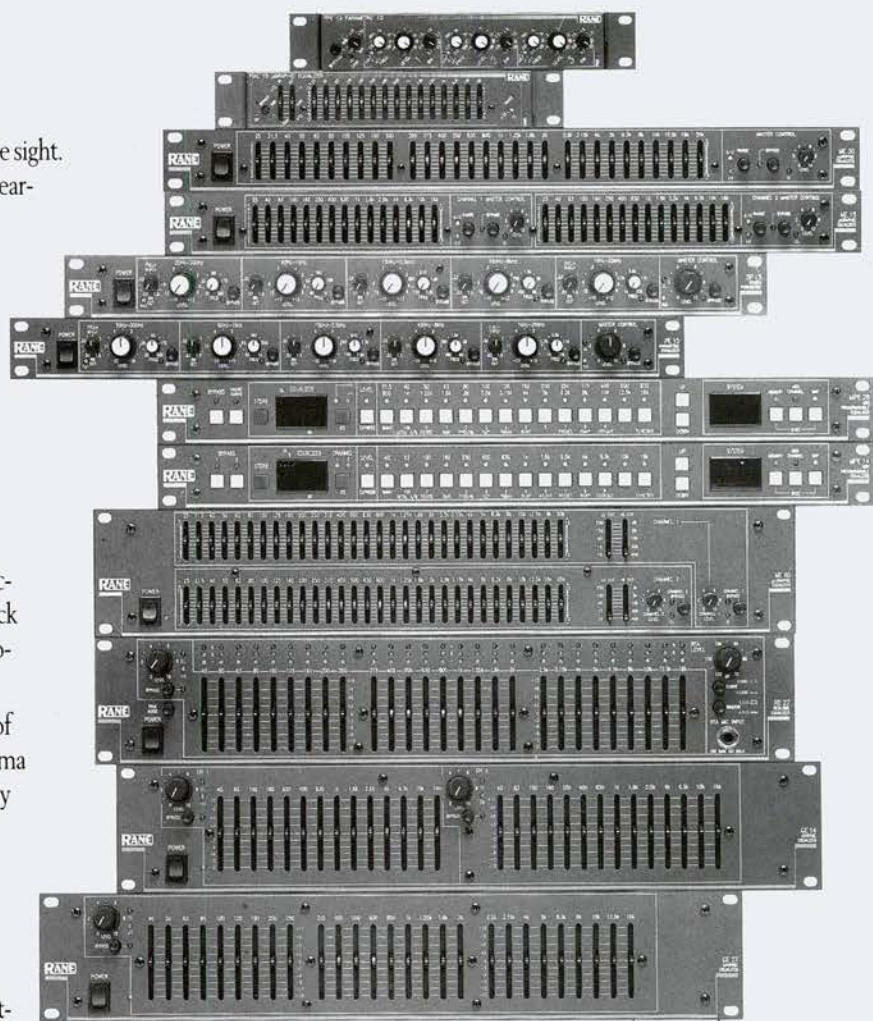
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## Consultant fires back

\* Last issue in the FORUM column, Acoustic Consultants were given a bit of a flogging by certain contractors. They can defend themselves, these letters move the debate to another plain:

IN THE BEGINNING THERE WAS CHAOS-

"In a single stroke the Almighty made the heavens, the stars, the earth, the oceans ....."

He did not have to call up a Consultant on his mobile, he did not have to sober up the Contractor, nor did he have to panic about Suppliers having the clouds and oceans in their warehouse on time.

Better still, He did not have to explain to His client why the fully imported mountains were now going to cost twice as much and the securing bolts were metric rather than the specified Whitworth.

He did not have to go 'on site' and discover that the installation contractors had wired the forests out of phase .... "don't worry mate, the punters are all deaf anyway!"

After it was all done - on time and on budget, He took a day off. On the 7th hole, He pondered: "I've created this wonderful place AND set an example of how big jobs can be done quickly, efficiently and economically. It occurs to me that mankind will never learn anything if things are so simple."

Selecting a number two wedge, the idea flashed to Him, and with a small adjustment to the Cosmos, he directed that: 'all individuals who work with their hands shall be sceptical towards those who work with theory and concepts'.

So in 1991, throughout all industries, the challenge to understand this lesson is still with us. Co-operation is the ONLY pre-requisite for a happy project.

**Richard Priddle, Consultant in Acoustics.**

## Another consultant strikes

Dear Sir,

Further to your article, (Channels #9) "Phantom - The Sound" (and being consultants!) we have these thoughts.

A "viscous combing effect" results when the sound from one of two sound sources arrive at the listener delayed relative to each other. This can occur when a voice is picked up by two microphones which are separated, or when two loudspeakers are spaced apart, one delayed with respect to the other ... or a combination of the above. This effect is most obvious when the two units are within a metre of each other, both from an amplitude and a delay point of view.

The effects differ according to the amount of delay and are roughly (depending on level differences and program type) as follows:

- 2 - 6 msec small numbers of wide cancellations giving those 'viscous combing effects'.
- 12-20 msec high numbers of narrow cancellations which are mostly inoffensive except for a

'fattening' effect.

25 msec-> discrete echos.

The effect of having two loudspeaker systems reproducing the same material, (the leaked sound from each other's mic), is to create an added delay. This will alleviate the combing problem for a significant section of the audience, however there will still be seats that are fed a variety of sound fields from 'coherent sound' through 'viscous comb filters' to 'fattish sound'. Indeed at seats which are equally distant from the A & B loudspeakers, the few milliseconds time difference still exists, and these horrible sounding comb filters still occur.

Perhaps a cheaper, simpler and more effective solution is to delay the signal from one of the mics by 15 milliseconds or so (particularly as each main character has their own digital delay under MIDI control) and use only one loudspeaker system. The result is a delay of each voice at 12 and 18 msec, worst case.

This would give the same desired effect with the added advantage that the sound would be the same for ALL seats in the house.

**Glen Leembruggen and David Connor, Eleoustics Pty Ltd, Consulting Engineers in Electro Acoustics.**

PS - We totally agree with your comments about the need for power amplifiers with very high music ratings, irrespective of steady state ratings. (Channels issue 9, page 18.)

## Time for a change?

Dear Julius,

Aaaagh! I've just read your article on amplifiers. More bleating about Aussie Monitor! For Christ's sake let go of the company. Put it all behind you and get on with your life. Leave the company to <libellous reference deleted> and the boys - look to the future. Not a Channels edition goes by without some not very thinly disguised allusion to AM. Shit, it's been three years. It's time to make a new life for yourself as an industry guru. So, please, let's have no more of this.

OK, now that's off my chest, thanks for the article on my book, (issue 8) and the photo. I knew it would be a good idea to wear my L.A. Law suit that day. The book has been selling incredibly well all around the world - I've got things underway to do French, Spanish, German and maybe Japanese versions. I'll no doubt end up the most well known pauper in the industry.

I'm hard at work on the follow-up, "Old Dunk's Tales from the Road - an Old Fart remembers", I'll send you some extracts if you'd like. Do you plan on having a "sealed section" for the more tasteless parts?

All the best,  
Duncan Fry.

\* Aussie Who? And yes, many Channels readers have expressed a burning desire to read extracts from your much threatened and potentially libellous new book. Our Attorneys, Sue Grabbit & Runn are ready to vet the first installment. Over to you, Pauper/Old Fart.

## Yamaha DTR-2 defence

Congratulations on another fine edition of Channels (Number 9) ; I would like to clarify some points concerning the Yamaha DTR2 DAT recorder mentioned in the Sony PCM 2300 review.

Firstly, the Professional User price of DTR2 was \$2412 (including 30% sales tax) when introduced in April this year. The present Pro User price is \$2332.39 inc. tax, and \$1794.14 ex tax.

Briefly the DTR2's main benefits are its compact size (2 rack unit), its very fast spooling (200 times play speed) and its great sound due to high quality D/A converters.

As you point out, the DTR2 is slow to start up, even when in pause. This, of course, limits its use in applications requiring a lot of tight cueing, however for straight studio mastering and playback this is not of great concern.

On the plus side, by dropping the tape off the heads in stop and pause modes, the DTR2 greatly reduces head and tape wear. It is worthy of note by your readers that some DAT tape on the market is more abrasive than others - further information may be gained from your friendly Professional Audio specialist!

**Geoff Crane, Yamaha Professional Digital Products.**

*\*I'm glad you highlighted the pro-user price on the DAT2 is somewhat less than retail, which I understand was \$3195 in August. I always err on the side of caution when quoting prices, and quote raw retail, or the highest published price. Sony quote a fast forward, rewind time of 60 seconds, which is around 150 times play speed. The sandpaper like qualities of some DAT tapes ought to be examined, hopefully there exists somewhere in the world a comprehensive review or magazine test that may highlight inferior tape brands. If anyone knows more about this, drop us a line.*

## Midi Gate reply

Dear Channels,

Re. your story (Ch. 9) about the new LA Audio Midi Gate & Midi mute. For your information, we have recently appointed a distributor for the LA Audio line in Australia. They are:

Audio Oz Pty Ltd,  
137 Moray street,  
South Melbourne 3205.  
Ph. 03 696 5690, fax 03 696 5691.  
Contact: John Baron.

You mentioned that the display may be a problem when having to show the function of all sixteen noise gates. In fact, each channel also has a tri-colour led which indicates whether the gate is open or closed. The major advantage the Midi Gate has over the Valley People model is that it has 16 channels in it for not much more money!

**-Robert Males, LA Distribution, London.**

## WRITE TO CHANNELS-

Express your opinions, vent your spleen - it's open season! PO Box 439, Epping NSW 2121, or Fax: (02) 876-5715.

## AC/DC Stage Roof collapses

The 150th date in AC/DC's world tour, an outdoor concert at Athletic Park in Wellington, was delayed for one day after the roof collapsed, injuring 5 crew. According to New Zealand media reports, a wind gust probably caused the collapse, which occurred after the roof had been flown with the full lightrig beneath it. A number of Vari\*Lite's were damaged to the extent they will probably require attention in the United States, and much of the rest of the rig suffered damage.

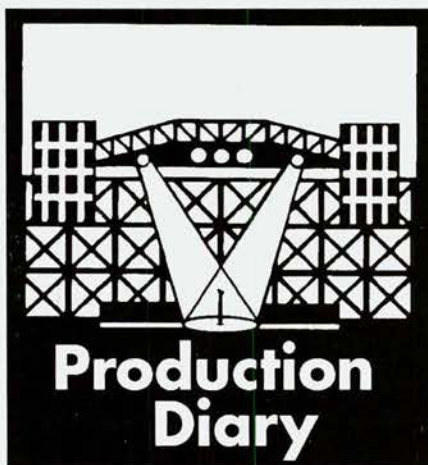
Because the rig was cabled, the roof made it's way to the stage floor with some warning, the resultant injuries were due to crew diving for cover rather than being crushed under the roof itself. None of the injuries were serious enough to warrant hospitalisation. One crew member was on the grid at the time, and 'rode' the roof to the floor.

Witnesses said scaffolding supporting the stage roof collapsed in one corner. Two cranes were used to re-secure the roof, and the concert went on a day late before 30,000 people.

**Troy Balance**, who are either the 2nd or 3rd largest S.R. Company in the land, are flat out as we go to press. The cigarette company Superband, featuring BB King, used a full Meyer Concert System at the National Tennis Centre, then there were the Australian Music Awards at the World Congress Centre. The award live sound (not the televised mix) was mixed on Yamaha PM 3000 consoles through Meyer and Deltamax cabinets. Club dates included Cathy Dennis and Wonder Stuff, then 3 outdoor stages were equipped for the Lygon Street Italian Festival, which is a fun gig. As you read this Daryl Braithwaite and John Farnham both have Troy systems out through January, 'two of australia's leading artists' according to Troy, and we can't argue with that.

System Sound handled the Jose Carreras tour recently, which went Adelaide, Melbourne, Sydney and Brisbane Entertainment centres with a Meyer SR system flown in a centre array. Some shows were in the round, with the system comprising a main cluster of MSL-10's (the great big Meyer box) and four other clusters of up to 4 MSL-3's and 4 UPA's, with UM-1's for downfill. The design was by System's John Scandrett, with Nick Reich engineering on a PM 3000. The system was monitored using an IBM 486 running MLSSA software, which provided spectrum analysis to a very fine resolution.

**In Brisbane Laser Light & Sound Productions have bought much of the Brisbane Sound On Stage Hire & Production stock, making them the biggest Light & Sound Hire company north of the border they say. Brisbane sure does have some serious Hire outlets now, what with A.C.P., Brisbane Concert Sound and East Coast Lighting all slogging it out. Laser produce a brochure that outlines their services, they offer just about anything to anyone, and can be contacted on (07) 846-3500.**



*Audex Concert Sound in Perth have been busy, with a rollcall of artists touring W.A., including Deborah Conway, Toni Child, Angels, Aust. Doors, the cigarette company Superband, Edgar Winter, Hard On's, Wonderstuff etc. Then there was Grace Knight on a barge, John Williamson and the York Rock Festivale - which was 90k from Perth, with Black Sorrows, Hoodoo Gurus, Paul Kelly, Weddings etc. This was achieved with 32 x Turbo TMS-3's and subs. Luncthime concerts with Daryl Braithwaite and Hothouse Flowers were live to air for 96FM. Best of all was the contract to supply a PA in a city building relaying sounds of the Perth railway station down onto city shoppers. This could be the ultimate in Rail cutbacks maybe? Leave the trains in the sheds, just make the noises? Audex have some new hardware too, with a TAC Bullet 28/8/2 and DDA Arena 44/16 console, with various Drawmer gates and compressors. Audex have TMS-3, Meyer and JBL systems, and certainly figure in the top 5 S.R. Companies. But who's number 3? To contact Audex, call Keith Crammond on (09) 328-3188.*

## Dire Straits outdoors from Page 1.

dard, AS 3000, which applies to our industry. All cables are double insulated, Earth Leakage breakers used, and according to Wyn, "I can hear a greater power headroom due to the sheer amount of copper". J.P.S. have upgraded all their 110v transformers as well. The potential mains draw of the P.A. in Perth was 320 amps per leg, which adds up just shy of 1,000 amps total.

Setup for the Perth show started at 3pm on Friday 22nd November, the TMS-3's were flown on the insides of the towers to allow array and vertical coverage for the centre area. All cabinets were up, amp racks and electronics in position by 10pm. The crew then returned the next morning at 7am, with the system ready at midday for the Saturday show.

The crew comprised Wyn Milson (System Engineer), and Bob Daniel, Steve Couper, Michael Waters and John Vasey.

The same system was used again by Dire Straits on Tuesday December 10th at Bruce Stadium in Canberra.

Jands Production Services are cruising through the Summer season with all sorts of events everywhere, including fashion shows, trade exhibitions and dance parties. Virtually every international tour that works Australia has a Jands presence, here are some examples:

**PAUL SIMON** added Vari\*Lite VLA and VL2b with Artisan and the new Mini Artisan controllers to the production they shipped in.

**GLORIA ESTEFAN** (reviewed elsewhere this issue) added 50 Vari\*Lite VL2b's to the collection shipped in (and painted white to match the set). ATS and PA People handled LX and SR respectively.

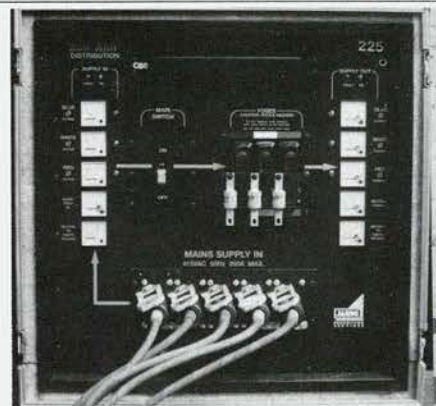
**CLIFF RICHARD** likewise ran with 32 VL2b and 20VLA, Colin Baldwin's Showcorp and Mick Previtera's Australian Concert Productions handled LX and SR respectively.

AC/DC finished off their World Tour (see review of the SR system last issue); as well as SR, Jands LX schlepped the seedies 164 Par 64, 16 x 6 Lite DWE, 8 HTI 400 spots, 4 oil crackers, 4 smoke processors, 632ft of truss, 60 chain motors and plenty of Vari\*Lite's. The Patrick Woodroffe designed lighting system was addressed via a Celco Gold 90 channel console, driving 4 x 48 way dimmer racks. It looked great, by the way!

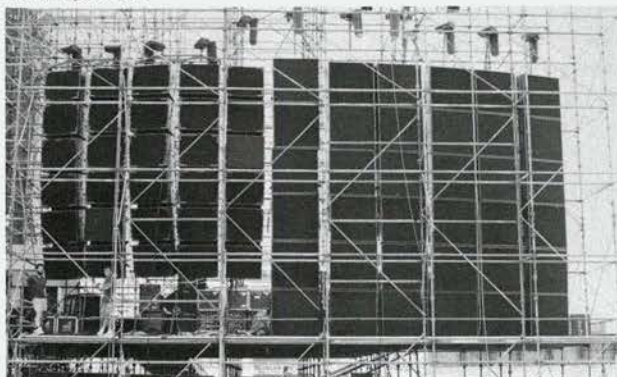
**ROXETTE** picked up virtually all LX and SR from Jands, SR- 48 x S4 Series II with the TC Electronics/Clair Bros drive rack, 1 x PM 3000/40 and PM 2000/24 FOH consoles, Ramsa 40/16 monitor desk with the Clair Bros. foldack incl. AM12 wedges. LX- 204 Par 64, 7 2K5 fresnels, 28 egg strobes, 2 oil crackers, AVO QM500 90 ch drive. 16 VL2b and 15 VLA Vari\*Lite's.

\*J.P.S. have added a Soundcraft Venue 40/8 FOH console with meter bridge and scene muting.

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## Production Spotlight

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# Gloria's visual Tour De Force

*Gloria Estefan toured Australia for the Paul Dainty Organisation in late 1991. The tour was notable as the first outing for The P.A. Peoples' new Turbo system, and the use of two Gamble EX 56 mixing consoles, provided by Maryland Sound Industries. We start our story in 1990....*

Picture the scene, an overcast Miami day, a private Jet taxis in front of several thousand silent and tearful people, many bearing flowers. A wheelchair is lowered to the tarmac, Gloria Estefan is wheeled pale and wearing sunglasses to a microphone, where grimacing, she shakily raises herself from the chair and thanks her fans for welcoming her home.



This followed an accident where a semi rammed her tour coach, and after doctors told her she would never walk again. That tour ended prematurely, and as if to make up for lost time, the Into The Light tour is now entering its 2nd year, the star having made a literal miraculous recovery, so complete that no dance step or energy is spared in a show that runs for two hours.

The lady is sensitive about her accident, not wanting anyone to think she is in any way impaired, a situation that created a slight problem for Monitor Engineer Craig Melvin. "I needed to fit Gloria with a wireless earpiece because she often is out of range of the monitors" he explained. "She insisted NO BELTPACK receiver, lest someone think it had something to do with the state of her back". This ruled out a conventional UHF solution, leading Craig to use a conventional FM transmitter, with a tiny Toshiba receiver that the star wears "In her bra", according to Craig. Two moulded skin colour ear pieces have been custom tuned by Craig, and give Gloria anything needed in terms of foldback.

Indeed this is a novel solution to an age old problem, best explained by House Sound Engi-

neer, Mark Dowdle. "I wanted to keep spill to a minimum, with 112 channels, of which 79 are lines from the stage." Mark was using the same pair of Gamble EX 56 channel consoles from the rest of the tour, the FOH and Foldback system coming from Maryland Sound who handled the sound for the rest of the world tour. Gamble is, of course, Jim Gamble, a revered console designer who operates from a remote Lake Tahoe lab.

The EX consoles feature 8 auxiliary sends plus a stereo send, four band parametric EQ, eight mute groups and eight audio subgroups. An extensive matrix output section, and a pin matrix complete the picture. Gamble hates VCA's, subsequently the board has none. "I mix from the inputs anyway", says Mark. A solid, conservative looking console, the EX has a full bargraph meter for every input, and the unusual arrangement of 'upside down' Carostat pots. Yep, the centre decent position is at 6 o'clock, looking right at you. "Once you get used to it, it is actually better", according to Mark.

Setup day for the first of four Sydney concerts actually started the evening before, with a rigging call to position the 80 odd chain motors - in fact, this show has about 32 tonnes in the air, which in Brisbane was approaching the structural limit of the Entertainment Centre! To simplify setup, the entire stage was shipped to Australia, along with the set, two giant video screens, PA & Monitor risers, and a fair part of the lighting rig. The stage and risers are on wheels, allowing the lighting trusses and overhead machinery to be assembled at floor level, while the set and backline are built on the stage which has been wheeled right to the end of the



*The PA People's Ken Dodds adjusts the TMS-3 array for vertical dispersion. The boxes were flown 3 high x 8 wide.*

at floored area of the auditorium.

In terms of staging, this show is very elaborate, with a flown dancefloor or rails that moves



*FOH Engineer, Mark Dowdle*

out over the heads of the crowd, as well as a pair of walkways that raise and lower. Add on a very effective light rig, and you have a lot of metal up above.

Locally The P.A. People debuted their new Turbo system, comprising 60 TMS-3's and 16 TSW-124 sub woofers. These were flown three deep x eight wide, in two clusters of 24, with 6 each side atop the subwoofers on the floor. Four chain motors each side carry the load, with a fifth acting as strain relief for the looming.

Down on the floor were just four amp racks per side, showing some design cunning by P.A. People's Chris Dodds. The master rack on each side contained 1 x AM 1600 and 3 x AM 2200 tri-amps, with a motor control panel at the top. A 3 x 40 amp power feed (via a 3 x 40a AMP connector) and a multipinned FOH feed then daisy

chain to the three other racks, which each contain 4 x AM 2200 tri-amps and 1 x AM 1600, which powers a pair of subwoofers. Each AM 2200 tri-amp powers a pair of TMS-3's. The entire FOH amplification required just 55 amps per leg! The small amp rack footprint was just as well, the stage being on wheels prevented the usual practice of locating things thereunder.

Another nice feature of PA People's system is the rigging, which is all neat and tidy, down to the four rigging cases, which each have a pair of speaker loom trays. The entire Estefan audio system packed into 1 x 40' pan,

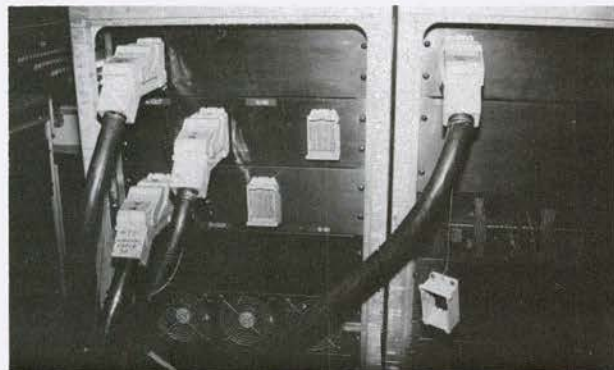
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# Gloria Estefan

(Continued from previous page)

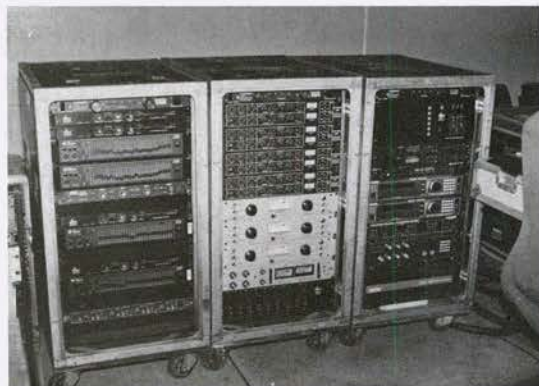
which was but one of nine semi's (Artic's, for our American readers) that toured the show.

Down on the floor the setup continued apace, Production Manager Harold Jones looked very un-flustered, as did Australian Production Manager Mike Emerson. Floor rigger Suzanne Seidel ran rings around her team of loaders, who retired in a lather of sweat at lunchtime, after all 35



**Multicores from the stage terminate behind FX rack, then continue direct to a pair of Gamble EX-56 consoles.**

loaders pushed the stage into final position. Lighting Director Ian Peacock started his focus at 1.30pm, and suggested due to 'politics' that I contact the actual lighting designer (Stig Edgren) in Los Angeles if I wanted to talk about the rig. In fairness Ian did loan me a lighting plot. Locally A.T.S. provided dimmer racks and their new L.S.D. 'lamps in truss' system which has two bars of 6 travelling in each truss section, which have wheels. ATS lighting chief Garry "Squirt" Brokenshire had just purchased the trussing in the USA, and it sure went together quickly. Paul Kent from Vari\*Lite Australia was on



**FOH Effects racks. Note the 3 Summit Audio Tube Levelling Amplifiers, inserted onto brass channels.**



**Craig Melville, Monitor Engineer, with highly customised listening wedge. Calling Craig?**

hand, the show used 50 VL-2B's.

At the foldback riser, Engineer Craig Melvin

and rigger Mark Bradley were waiting for power. "Come ON" they yelled at a tech "WE NEED POWER!" The reason for the rush was sitting atop the EQ rack .... a Garibaldi Espresso Machine, which without power was lifeless and mute. Lunchtime was over, these guys wanted cappuccinos. NOW! This was obviously the comedy station of the tour, a credit card machine sat on one of the two Ramsa 40-18 monitor consoles. "They ask for more foldback, I ask for their AMEX card!" said Craig. P.A. People supplied a 'Big Pig', which is what the septs call a stepdown

transformer from 240 to 120 volts, used to drive all the backline and the imported FOH and Monitor system. And the espresso machine!

Given this was the first excursion for P.A. People's new system, I asked Mark Dowdle if he was apprehensive before arriving in Australia. "Well, Craig & I are 'hands on', we're not afraid to dig into something to fix it, so no. I toured here with the Star Capital rig (with David Lee Roth) and didn't like it, but this system is just fine". P.A. People

system engineer Ken Dodds had the system all fired up by 1pm, ready for line checks. The stage had been miked and wired in the morning, a major advantage of having the stage wheeled out of the way while the lighting is rigged.

The video for this tour was simply stunning, two huge screens either side of the stage relayed the action from three cameramen, directed by Kathleen Ferris. Split screens and step-printing effects were all projected by four overlapping GE Talaria 1300w projectors each side. These projectors carry a retail price of more than \$200,000 each here in Aus.

The execution of the show was as near to perfect as I've seen, the sound crystal clear with every little percussion nuance audible. Lighting, staging and virtuoso musicianship alike were all 100%.

As Australia's possibly most cynical reviewer Bruce Elder put it, "Perhaps what was most remarkable about this show was that you could have hated the music and still loved the performance. This was as much a visual feast as it was a musical tour de force."

*Julius Grafton*

In Your Ear foldback systems - the new thing. See Page 17.

## Opinion

### International Touring Systems: more of the same, or something new?

"The more things change, the more they stay the same" - one of your editor's cliches that might apply to the touring sound business in 1992. The P.A. People's new Turbo system was in previous life Australian Concert Production's Turbo system, which first saw life at Expo '88.

Back then Star Capital had slowly crept into existence, funded by a public share float in the heady days of the mid '80's. Samuelsons had bought Jands Concert Productions, and Troy Balance were assembling a Meyer concert system. Star Capital collapsed into the arms of its creditors, with A1 Audio buying the gear. Samuelsons sold Jands back to Jands. A1 followed the same path as Star Capital, (although not to the point of collapse) proving that owning the gear meant nothing if you didn't have the human resources!

Former A1 Audio director Lindsay Hall made the famous observation that "Internationals are easy", then the company was booted off the Hothouse Flowers tour. They tried to use Pub Roadies where seasoned professionals are the order of the day. Meanwhile, A.C.P. was too far away, based in Brisbane.

So then The P.A. People bought A.C.P.'s Turbo boxes, A.C.P. bought half of A1's, (after choosing not to exercise an option on the other 24) while Jands Production Services upgraded and consolidated.

It's an interesting observation that of the six large tours this season, only one is using local FOH and Monitor consoles, let alone Monitor speakers. The rest have flown in what they are using in the Northern Hemisphere.

So given the new order represents the old order re-arranged, where does The PA People boss Chris Dodds see himself? "It's simple, we've got a system that stands up to international standard. We'll rent that system to anyone on an equal basis. If a promoter wants lighting, we've got a 250 can system. If Jands, ATS or Showcorp do the lights, that's fine by me too. Where else in the world is it compulsory for a PA company to do lights too?"

Dodds feels he has the human resources, and certainly has the right system. Now it's a question of maintaining the right attitude.

### What are your views?

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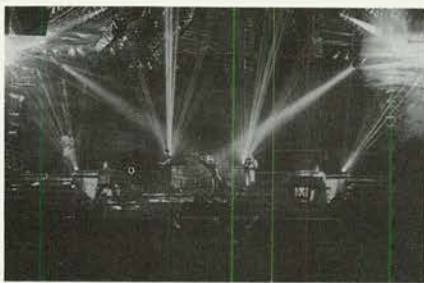
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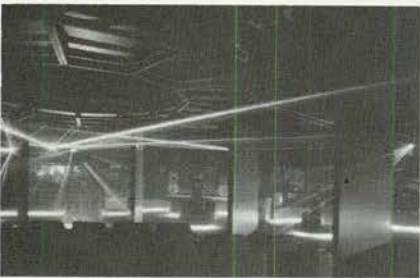
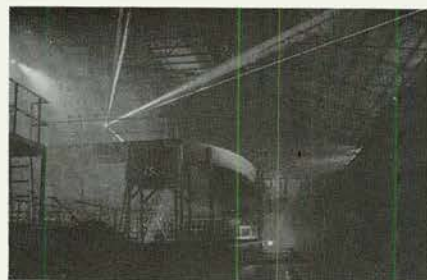
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teeth upon reading this!

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Other input channel features include switches for: phase reverse, 100Hz rollout, and Line input, Mic, line and insert connections, rotary controls for sends 1 - 8, On/Off switch with LED,

PFL switch with LED, peak input LED, and the linear fader, which has about 70mm travel. The output section has 8 outputs, these each have a DIM switch, which is a good way to pinpoint stray feedback, and operate a pad across their respective output.

The 8 outputs (sends) each have an XLR, and an insert jack, which is the preferred way to hookup external 3rd octave equalisers. If out-board equalisers are inserted across the send outputs, the output PFL will allow you to listen to the post-equalised send, which is infinitely preferable. Furthermore, each output has a talkback switch, an adjustable highpass filter, and a Sub send and ON-OFF switch with LED.

The SUB send from each output feeds a 9th output, called MASTER, which is designed to run the monitor engineers wedge.

The Master output also has an XLR, and an insert jack, and in effect you may 'mix' any of the 8 'sub' outputs into the Master mix, which also appears at the headphone output of the desk. Any PFL channel or output selected will also appear at the Master output. A large PFL LED alerts the operator to this. Talkback can be selective to any output, or all outputs. A Master DIM switch is located at the talkback stage, for real panic situations. As with all other Soundcraft consoles, the power supply is external.

Spirit Monitor 16: \$7495; 24: \$10995 inc tax.

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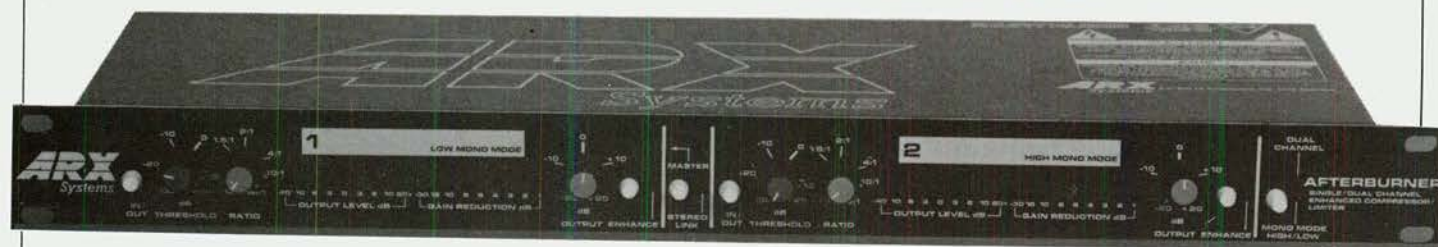
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# Troy Balance

*The Melbourne sound company that caters to garage bands and mega-stars alike. We take a look inside...*

The family Trojkovic have truly made their mark on the Australian Music Industry, between them controlling a string of music shops, an M.I. importer, and in the case of Peter Troy, the Troy Balance Corporation.

Troy Balance are the largest sound reinforcement company south of the border, and Peter Troy laughs at the fallacious name applied to the firm by some in the industry - "Farnham Sound"! Troy Balance have this most prestigious Australian artist of recent years, John Farnham, on their books, and aim to keep him there. "Just jealousy" he says.

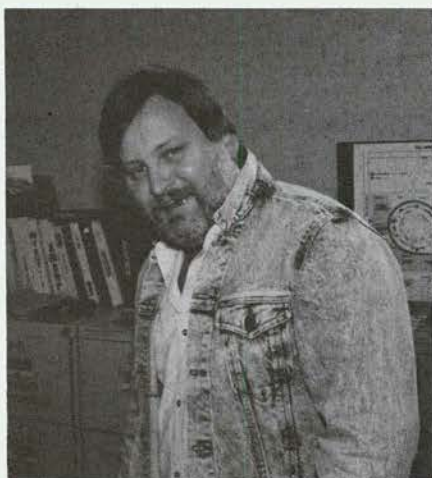
"We upgraded to arena sized systems 5 or 6 years ago, when it looked like one of our customers would break into arena sized shows", Peter told us. "We had 5 customers touring the pubs and clubs nationally, and we were sure one of them would break through, and John Farnham did".

Troy were ready, with over 50 Meyer MSL-3's, associated subwoofers, and a large number of E.V. Deltamax DML-1152's. The company can easily handle any venue in the South Pacific, with Yamaha PM 3000 consoles, and all the associated rigging, flying and outboard gear any world class production company must possess.

This sort of work is hotly competitive, Peter told us the return today wasn't much greater than 5 years ago, while of course continual investment is required to keep up with the rest. Troy Balance isn't just into large scale concert production work, the firm provide touring systems, and in fact operate a sort of musical cradle-to-the-grave service. Let me expand on this.

Firstly, at the rear of the old but cozy South Melbourne factory are three rehearsal studios. These are very tidy, spacious and well configured with Yamaha, EV and Jands sound systems. A waiting room has all the usual accoutrements like couches, vending machines, video games, and a glass fronted equipment rack where the amplifiers and processors for the three studios provide a preview of what's going on within. Look - fish music must be back - studio 3's electronics are lit up like a christmas tree!

Out front is driveway hire, where backline and PA's for small gigs are in and out, this is truly the starting point for tomorrow's arena stars, and Troy aim to keep them coming



Peter Troy ▲



The Union street, South Melbourne HQ ▲

back! Along the way they can outfit their home studio and buy their own PA equipment, because upstairs is a showroom with Soundcraft, E.V., Yamaha, JBL & Jands all represented by means of actual stock on the floor. A Sydney branch offers Hire & Sales.

Until I visited Troy Balance I wasn't aware of the company's commitment to Melbourne's music community, which shows through and through in a professional operation. -JG

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It's a new foldback trend - starting right NOW

# In your ear!

Gloria Estefan's use of wireless earpiece foldback is a new trend that will, like night follows day, take hold. Pet Shop Boys have just finished a tour of Europe, during which they too used a wireless earpiece system, running in the VHF part of the spectrum between 165 & 225MHz or so.

Ms. Estefan's system was quite un-usual, transmitting on good ole' FM Stereo (between 88 - 106 MHz.) Monitor engineer Craig Melvin had a bit of a scene with the broadcast authorities during the U.S. tour, who have rules regarding the operation of FM transmitters! Reason for FM was that Audio Technica have supplied Ms. Estefan with 11 channels of VHF Wireless Microphone system, based on their new ATW 1032 HE system.

Suffice to say, the Audio Technica people were not keen on that many channels, but Craig has organised the show so that it functions.

There just weren't any frequencies left for the earpiece system, and UHF was deemed "too expensive".

Up in the rarefied UHF frequencies (902-952 MHz) there is a lot less traffic, and less RF interference and noise. Sennhieser, Sory & Samson have wireless systems that work up there, you can stack UHF onto a busy stage full of VHF if you need to.

Whatever bandwidth you use, the earpiece foldback devices here now. Pet Shop Boys used a system devised by a firm called The Radio Station, (distributed by LMC in the UK) whose in-ear monitors have been seen on various U.K. tours in pre-production, VHF format this year. P.S.B.s used speakers in ears all round, which were supplemented

with conventional foldback monitors, (as did Gloria Estefan). The conventional monitor system 'fills out' and provides some air movement,



*In-ear monitors from Crystal Taylor Systems Inc., of Pennsylvania. Try using a hearing aid!*

whilst the in-ear systems are relatively low-fidelity, individually moulded ear pieces. Gloria Estefan's were ported, one more than the other, to let some bass through. P.S.B.'s monitor engineer Nick Bruce-Smith was sceptical at first, "I'd heard widely different reports about it, but as a concept I think it's brilliant!" he told Studio Sound magazine.

Because the ear pieces block off a lot of the other sound, they're apparently good to pitch off. Of course some care with gain is necessary, a limiter over each send would be very desirable, it would be easy to distort the ear-piece.

Channels suggests to frustrated performers and monitor engineers that you investigate hearing aid vendors in order to find a pair of (skin coloured) ear-pieces that suit you, then get onto a compact battery operated VHF receiver- the smallest VHF receiver you can find that'll power a pair of ear-pieces. When you've got your own ear-station type foldback thing happening, give us a call.

It's the future!

-JG

*\*Of course the Reels used a headset type foldback system years ago, the difference here is the little wee small ear-pieces that the punters cannot see - wireless to boot!*

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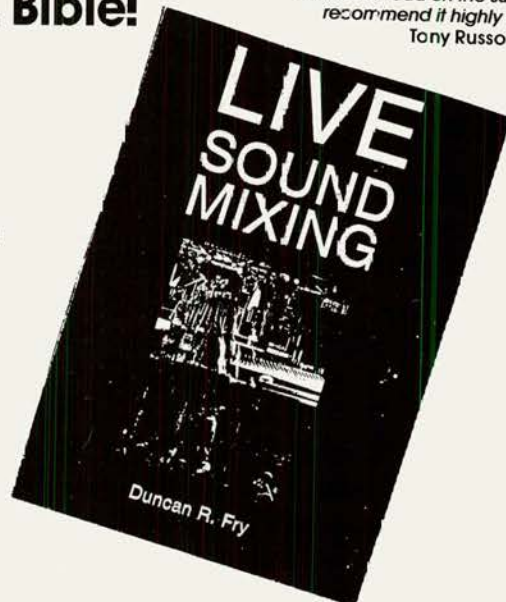
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## Summer Fiction

# A Frammelling we will go!

*A story of two brothers who, through travelling vastly different paths, laid the framework of high Q array dispersion mechanics used in today's concert sound reinforcement industry*

By Denis Stokes

The frammel did not, as originally thought, originate from the horn player Alberto Frammel. Alberto was indeed a trumpet player in the court of Pope Giovanni II during the 15th century, but it was his brother, Enrico who introduced the frammel to the world, and was arguably the first sound engineer on earth!

The Frammel brothers were born of simple parents sometime between 1452 and 1467 in Florence. Their father, Enrico Snr, was a baker and pizza maker whose love of music inspired young Alberto to take up the horn and travel to Rome in the hope of joining the Vatican horns, noted baroque dodecatet of the period.

Young Enrico did not share his brother's talent for music, but enjoyed hard physical work and got his rocks off laying paving stones. He was also a masochist and adopted religion, attending daily mass, engaging in self flagellation and occasionally carrying luggage for the clergy who travelled through his town with their entourage and the huge black boxes which held their preaching equipment and personal effects.

It was this religious fervour (and willingness to slave his guts out for minuscule remuneration) which eventually led to Enrico's being offered a position as road manager for the Travelling Cardinals, a loose outfit of fire and brimstone preachers who played long stints of one night stands throughout the land.

Now young Enrico was a simple lad, but an unusually strong one, and quickly endeared himself to the travelling clergy who were willing, after realising how much easier he made their lives, to pay him handsomely for his efforts. Enrico, although simple, was by no means stupid, and soon realised that lugging black boxes for down market village preachers was a nowhere gig and that it was the Bishops who played the big cathedrals for whom he'd rather be working.

And so it was that Enrico projected his image upmarket through little things like wearing freshly laundered pageboy uniforms to work, learning the rituals of the packing and unpacking of the black boxes and paying close attention to the rantings and ravings of the travelling clergy for whom he slaved. So well did he apply himself to learning the Cardinals' routines that he became adept at predicting where and when they would dip into their black boxes for accessories and the precise

moments when they would require refreshments or assistance with swooning female onlookers so common of that era. Enrico became an integral part of the Cardinals' shows and word of his skills spread throughout the religious industry.

In short, Enrico's plan worked. One day, after three long years of dutifully serving the Travelling Cardinals, he received an invitation to attend the court of Pope Giovanni II for assessment for the post of tour attendant to Bishop Agostino de Roumlat. This was indeed a cushy gig! Bishop Agostino was known throughout the land as a premiere drawcard who toured most sparingly and only in the height of luxury. He was even rumoured to have his own specially designed black boxes with indelible markings proclaiming their contents and weights.

Of course, Enrico accepted the invitation to join the Bishop, and after the usual shakedown tours of Venice and environs, found himself luxuriously ensconced in his own private room in the Vatican with six weeks off until the next tour. ON FULL PAY!!

Unlike most of the other tour attendants, who planned to spend the next six weeks and their entire tour salaries in the bars and bordellos of the Latin Quarter, Enrico took

himself off to see the sights of the Vatican proper, and to try and find his big brother Alberto, whom he had not seen for nearly five long years.

Fortunately, and unlike the baroque dodecatets of today, the Vatican Horns were a close knit bunch of guys and had survived trauma, poverty and the inevitable Spanish Inquisition to attain the coveted post of Horns By Appointment To His Eminence Pope Giovanni II. They were not difficult to find, given that their regular, indeed their only, gig was the daily fanfare to announce the arrival of the Pope to bless the masses on his front lawn.

Now the life of a horn player in those days was not all beer and skittles. Life itself was pretty good, but the actual gig was a nightmare. The main cause of the nightmare was the horn itself. You, dear reader, must at this point endure a physiology lesson to appreciate the horrendous conditions abovementioned.

Most people, when faced with the choice of holding at arm's length a cup of tea for one hour or a bucket of water for one minute, will opt for the cup of tea. This is a bad mistake, as the human muscles are capable of extraordinary effort for short times, but are most unsuited to extended effort even of limited exertion.

Returning to the 15th century, and the Vatican Horns, we recall that the horns of the period were not folded but extended (straight), and nearly eight feet long! Very efficient, most impressive and almost impossible to hold still after more than a ten second fanfare. Enrico noticed this. As a matter of fact, Enrico noticed most things. (*Gain the impression Enrico was a bit of a Nurd? -Ed.*) Noticing things had proven to be one of his greatest talents.

He noticed how the horn players swayed with the effort of holding aloft the brilliant golden shafts. He noticed how their tuning and timing went off as they strained to keep their horns pointing in approximately the same direction. But most of all he noticed the strange swishing effect as the mouths of his brother's fellow horn players' instruments arched from left to right and up and down. "When my Bishop becomes Pope, a swishy sounding fanfare like this will never do!" he noted to himself, and made a mental note to find a way

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## Frammelling

to prevent the tardy looking and lo-fi sounding horn section from being that way.

Now at this point, one of two amazing things could have been invented. Enrico could have taken the track of bending the eight foot long horns to the shape of the french horn and changed history 300 years early. (This, incidentally was the option preferred by most Vatican courtiers who hated the raucous cacophony perpetrated by the Vatican Horns and wanted to bend them around the horn players' necks!). But the option chosen by Enrico was, of course, to find a way of securing the horns in such a way as to keep them a constant height above the ground, and at a set angle to each other to evenly spread the sound around the courtyard.

Now the three-by-one lump of wood was not yet in common use in Italy at this time. (Probably just as well, because TMS-3's were still 485 years away). Enrico, as it happened, wanted something quite different, and at this point he remembered his dear old father, and the five foot long pizza oven spatula with which both he and his big brother were disciplined in their younger days. In no time at all, he had located a Vatican pizza maker, obtained the name of his spatulae supplier, bought a dozen spatulae (do you understand dodecatet yet?) and fashioned notches into the ends of them.

All that was left to do was to take the Vatican Horns out into an open field (seeing how anechoic chambers were still 400 years away, and Enrico couldn't afford to stuff around for that long), line the horn players up, and cut the pizza spatulas down to the appropriate size. Viola! Frammels!

The physics of what he had done escaped Enrico to his dying day. Indeed, like most tour assistants of that period (and all subsequent periods) he didn't really understand why the frammel worked. Or how the horn works, or why the problem existed in the first place! The problem of controlled dispersion in high Q arrays, off-axis high frequency rolloff and interference induced comb filtering is one of the most basic, yet most misunderstood and misused principles in sound today. Next to the psycho-acoustic possibilities of the Haas effect, that is.

**But who cares? If you've got enough Turbos, you can deafen them to the point where frammels are unnecessary! Happy rigging!**

What goes up DOES come down, according to Rigging guru -

# Knut Skjonberg

Knut Skjonberg is President of Skjonberg Controls Inc, the world leaders in control equipment for chain motors and rigging. "We build systems for touring acts and theatres - we did Madonna's last tour, she's colourful. Pretty brutal mouth like a longshoreman! And it's pretty well universally applied, she keeps going through crew."

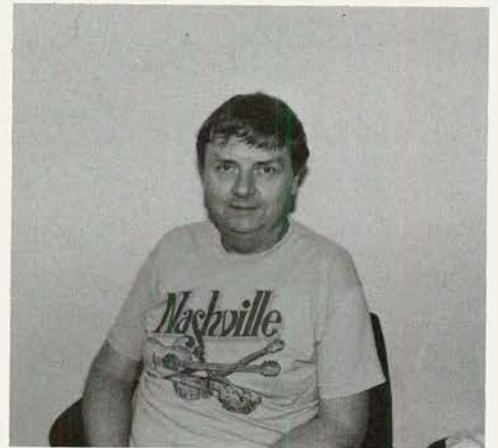
Knut was talking to Channels in a short break during a flying visit to Australia, where he had been contracted by Jands Contracting to supervise the installation of a new motor control system in Sydney Town Hall. The installation called for flying lighting trusses, and motorised chandeliers, and at first glance this would appear relatively simple.

The job entailed upgrading the original truss systems, and Knut supplied the software for computerised control of the five variable speed lighting trusses that can be programmed to move to any position, plus or minus 5mm. Each truss has a working load limit of 1 tonne. A scenery batten and five similarly controlled chandelier winches make up the contract. Loadstar chain winches are used.

Knut then flew to Perth, where Jands had retained his services to supply the front end of the computerised flying system at Burswood.

"We built a Vari\*Lite truss flying system for Prince, that's pretty well where we made our name because naturally enough, Vari\*Lites like to be positioned right on the money". Knut's systems are capable of positioning to within +/- 5mm, which in theatrical context is very tight. In the case of a job like Sydney Town Hall, cable retraction systems are needed, the motors must know when to stop, and that's Knut's speciality.

"Most of the computerised stuff on the road is ours, we sell packages to lighting companies, Jands here have our computer control unit, LSD have 4, Sammies have it." With up to 80 motors in the air on a show, accurate control is



essential. Knut's firm custom design controllers to work motors in sequence, raising and lowering trusses and grids. Pods' even, but they didn't win the contract to build the famous Pod's in Spinal Tap - just as well! "We built the flying pods for Paul McCartney's last world tour too."

"We build electrical control equipment, chain motor control equipment, in the case of Gloria Estefan's moving dance floor/grid, we built in strain gauge units to show dynamic loading and weights, in case too many people

loaded one side too heavily. The platform weighs quite a bit, the operator can see a read out at any time of where the load is".

Back to Madonna: "I enjoy working with her because she's a hard worker and she does a good show, it makes you look good by association. But she yells and screams at people along the way. We don't get too involved in the tour, we go into rehearsal with an act, get a show running and turn it over to whoever is going to do it."

Knut's legacy includes the famous Strand 'Action' lighting control system, which he helped develop. Perhaps Knut would be better remembered as the nordic rigging God! -JG

### Knut denies designing Spinal Tap's famous pod's!

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FEMALE CHASSIS SOCKET		
UTGO 2448 5	192990-1310	
MALE CABLE PLUG		
UTG6 2448 PN	192990-1340	
SHORT BACK SHELL		
UTC 24 AC	192990-1520	
LONG BACK SHELL		
UTC 24 PC	192990-1600	

#### LOOSE PINS (Above connector bodies do NOT contain pins)

FEMALE GOLD PINS	RC20M12K
192990-0110	
MALE GOLD PINS	RM20M12K
192990-0100	
FEMALE TINNED PINS	SC20M1TK6
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MALE TINNED PINS	SM20M1TK6
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**NOTE:-** Gold pins are strongly recommended for audio applications, especially those at mic level.

PIN REMOVAL TOOL	RX20-B25
CET-TRIDENT	
HAND CRIMP TOOL	
CCT-TRIDENT	

#### **CORRECT BURNDY 48 PIN TERMINATION PROCEDURE:**

- 1) Slide Burndy "Back Shell" over the end of the multicore cable.
- 2) Slide 100 mm piece of "Triple Shrink" heatshrink (of a suitable diameter for the cable in use) over the end of the multicore cable.
- 3) Remove 100 mm of outer casing from the end of the multicore cable.
- 4) Strip the foil shield, insulation etc off each line back to the outer casing line.
- 5) Twist "Drain Wires" together, this should be done as close as possible to the outer casing cut line.  
Pairs 1 thru 7 are group "1" and terminate to pin "x".  
Pairs 8 thru 14 are group "2" and terminate to pin "y".

Pairs 15 thru 20 are group "3" and terminate to pin "z".

Pairs 21 and 22 are the service line earths and terminate in pin "aa".

6) You now have three groups of twisted drain wires, fit a bridging wire between these three groups. This will short all the drain wires together.

7) Twist a 120 mm length of green insulated wire (32/.20 mm<sup>2</sup>) to each of these three groups.

8) Solder three groups of drain wires CAREFULLY to avoid damage to insulation of any conductor. Trim off excess twist so that you are left with a minimum size termination point.

9) Slide triple Shrink 10 to 15 mm beyond outer casing cut line, this should cover all drain wire terminations. Shrink Triple Shrink.

10) Trim green earth wires to same length as all other conductors.

11) Fit pins to all wires. Crimp only.

12) Insert wires to Burndy socket in a tidy fashion, avoid crossed wires where possible.

13) Assemble connector AND Test.

A longer fan out may be required for panel mount connectors, so that the multicore cable may be fastened (cable tied) to the support bracket or looming bar at the rear of the Panel. The tails can then be extended to the chassis mount Burndy connector.

### Line Level

#### THE BURNDY 19 PIN CONNECTOR:

The introduction in 1980 of the 48 pin Burndy was followed soon after by the introduction of the 19 pin Burndy as a multipin connector for line level use. It's usage has likewise become an industry standard.

The 19 pin format is generally used for line level feeds such system drive multicores.

There are two non compatible wiring standards for the 19 pin connector, one offering 6 pairs with individual earths while the second offers 9 pairs with one common earth. The 6 pair format is manufactured for Jands Contracting, Jands

Production Services and Channel 7 while the 9 pair format is manufactured for the ABC.

The 6 pair format is generally recommended, as it reduces potential crosstalk problems and makes the process of de-bugging any earth loops much easier.

Care should be taken when terminating from the 6 pair format to XL 3 pin connectors. Jands Production Services connect the "B" Leg to pin 3 as the "Hot" pin, while Jands Contracting connect the "A" Leg to pin 2 as the "Hot" pin following the international telecommunications practice of using the common colour for the "Hot" leg.

#### PART NUMBERS FOR BURNDY TYPE 19 PIN CONNECTORS:

DESCRIPTION	BURNDY PART NUMBER	TRIDENT PART NUMBER
-------------	--------------------	---------------------

FEMALE CHASSIS SOCKET		
UTGO 1619 S	192922-1220	
MALE CABLE SOCKET		
UTG6 1619 PN	192922-1280	
SHORT BACK SHELL		
UTC 16 AC	192922-1340	
LONG BACK SHELL		
UTC 16 PC	192990-1560	

#### LOOSE PINS (Above connector bodies do NOT contain pins)

FEMALE GOLD PINS		
RC20M12K		192990-0110
MALE GOLD PINS		
RM20M12K		192990-0100
FEMALE TINNED PINS		
SC20M1TK6		192990-0070
MALE TINNED PINS		
SM20M1TK6		192990-0060

**NOTE:-** Gold pins are strongly recommended for audio applications.

PIN REMOVAL TOOL	
RX20-B25	
CET-TRIDENT	
HAND CRIMP TOOL	

- Continued next issue

Compiled by **W. Peter Twartz**  
Audio Products Manager,  
Jands Electronics Pty Ltd.  
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**JANDS**

We talk with LD Chas Herington in Sydney

# Dire Straits LX

*Dire Straits World Tour has a few lighting firsts - there are no Gels for starters, because it is all coloured with dichroic glass. Then there are no colour changers, because there are only 32 Par 64's. So at once convention has flown out the window, and along the way we glimpse the lighting system of the future! Read on...*

Chas Herington is Dire Straits LD and Operator, now ensconced in a World tour of epic proportions. For Chas the gig started with the initial design late in 1990, then the tour proper, which is booking into 1993.

We caught up with Chas over a morning beverage at the Sebel, and the first question had to be the obvious one - the one about why his lightrig has 68 Intellabeams in it!

"I like the light - it fills the void, bridges the gap. Compared to a VL2b which has very quick colour changing, the Intellabeam is more similar to the VL-1, you can physically see the colour bumps, you can get very fast gobo rotations and colour spins which you can't do with the Vari\*Lite. The speed of the mirrorhead is incredibly fast, we can create effects with moving the mirrorhead and fading the light out as the mirrorhead moves.

It's a situation where you've seen this effect happen, but you don't quite know for sure it's happened!" (*I have whole days like that. -Ed*)

Dire Straits lightrig is almost all moving, there are very few 'analogue' or fixed lanterns. The 90 Vari\*Lites, 68 Intellabeams and 48 Emulators don't just perform pre-programmed cues and moves, but some of the Vari\*Lites also move about on eight light 'trollies' that are controlled by a computerised motor management system.

The Emulator is like an Intellabeam but instead of the MSR-700 lamp it has a xenon strobe lamp and an optical train that produces a very narrow, very tight beam - something like 2" in diameter from a 30' throw. That is, umm, 50mm from a 10m throw for those younger readers, those under the age of despair, that is. Chas, although truly an Englishman, has lived in L.A. for 12 years, so he can be excused for his use of imperial measurements! The L.A. coffee-for-breakfast habit has taken hold. Where were we?

Scanning with two mirrors, the Emulator produces planes, lines, tunnels and generally emulates a laser, which is probably why it was so named. Intellabeam and Emulator come from Lightwave Research in the USA, who say the Emulator can strike different targets in a sequence, such as - beam strikes mirror target, scans a pattern, goes to black and repeats.

"I chose to use these fixtures" says Chas. "There was no sponsorship deal, it is a matter of designers today looking at new products to see if they integrate into a touring situation, which is not an easy task." Chas has legitimised Lightwave Research, who stand to do well from this tour. "I've looked at the Golden Scan, I'm not that impressed with it. I saw the (Clay Paki)

Mini-Scan at the PLASA show, it looks OK in terms of size" said Chas.

Vari\*Lite uses a HTI 400 lamp, while the Intellabeam comes with an MSR 700 lamp.

To control the Intellabeams Chas has slaved 12 700HX controllers together, which would be



hard to handle if you were to try to drive them yourself. The solution was to use a Mac IIci computer, to call up cues. Chas created the software from a Hypercard stack, the screen mimics the numerical keypad of the computer, and each key corresponds to a cue, so hit the cue and it sends the command down the line to the controllers". It must have been weird at first, punching a numerical keypad on a Mac!

Each mechanical Intellabeam dimmer is actually connected to a dimmer, courtesy of a digital to analogue converter, and then controlled by the main AVO QM 500 90 channel console. "I've got 12 regions on the stage, one per controller".

24 Par 64, 36 ACL (250w PAR 64 aircraft landing lights) & a few mole strips make up the analogue component, with 8 truss follow spots (HMI 1200) and 4 followspots out front. Light & Sound Design supplied the lighting system for the world tour, and Jands were contracted to provide some of the 17 tonne rig here in Australia, including the Vari\*Lite component and of course much of the trussing.

To describe the rig in words, you must first visualise the mother grid that serves to locate the points for everything beneath. Then there are three triangular moving trusses with muslin stretched across them. A 60' truss at the back of the rig has a track beneath it, on which 2 x 8 light trollies motor up & down under computer control. They can move to within half an inch of a preassigned position on the track, a MIDI interface from the trollies sends signals as they move, triggering cues along the way. A Serial MIDI interface using a MAC is interfaced with the Vari\*Lite Artisan console to achieve this.

A cunning design feature is the three giant silk triangles that lower and pin down to the stage. A weight on a pulley is backstage, and on cue the pins are released along with the weight, and the triangles wizz up. Chas likes dramatic changes accompanied by blackouts, so you don't

know quite how whatever happened just happened!

To the future of the industry, and Chas has ideas, "a lot of people want to design a system and actually see it on a computer screen before production rehearsals. Then you come in with a floppy disk and put it into whatever system you're using, and the computer knows what height the rig is, it can then focus down to each point". Asked about the differing system protocols, Chas agreed this was some time away, although it will happen because with production costs becoming so high it'll be necessary to cut down on the number of operators. On this tour Chas has John Sinden as Vari\*Lite operator, and because there are no colour changers there is no operator for these.

"Manufacturers like to keep their own protocols, but there is definitely a possibility everyone will settle down and use DMX-512". This would take the industry one large leap closer to Chas' ideal, and move every element of every lighting system onto one control board with one operator. To some degree that has already started to happen, Jands new Event lighting console will run Intellabeam's, which courtesy of DMX-512, simply hook right on, not needing a dimmer channel. The Event has a wide mode that doubles the number of channels, making a 48 way console capable of running 48 ordinary channels, then 4 groups of Intellabeams in the wide mode, which can be programmed and turned off, so the Intellabeam's are controlled from the scene masters.

As to the dichroic glass filters, these came

*Continued over*

(from previous page)

from Lightwave Research (makers of Intellabeam) and the aesthetics are very nice, you look up at the Par 64's and ACL's and there is this nice glass filter. Like theatre used to be, once upon a time! They hold their colour, the hue is just right, and Chas ordered them from Rosco numbers - they are made to order. A bit pricey though at about US\$60 each.

The show is never the same, things change and the set is usually 17 songs from a 30 song list. "We can be spontaneous, it does happen! Design and operation is a fine line between doing too much and not doing enough, the lighting should be an integral part of what the musicians are trying to get across", according to Chas.

The Dire Straits tour is sponsored by Philips, for reasons explained elsewhere in this issue, so while on the European leg, Chas had the chance to go and see how Philips make MSR lamps at their factory in Belgium.

"It's an incredible thing, watching people weigh out grains of mercury with a line of 30 people making each lamp, it's quite a painstakingly slow process. I just didn't realise, seeing these people working in a big vacuum chamber with gloves on, using different metals to create rare earth gases - it's so critical where the arc falls in relationship to the whole envelope of the lamp.



It's all measured so accurately, when you see the cost of an MSR lamp, which is expensive, you realise why that is so." The lamp has a 750 hour life, and Chas pulls them out once the envelope starts to grey.

"The good thing that came out of that visit was that two of the Philips R & D guys came down to the show we did in Brussels and watched the whole setup. At this particular gig the load in was along a cobbled path, and the R & D guy saw why sometimes there could be a shift of the inner envelope - they didn't realise these lamps would be treated so rough. They actually went back to the factory and strengthened the top end of the lamp, they put a little spring coil in there."

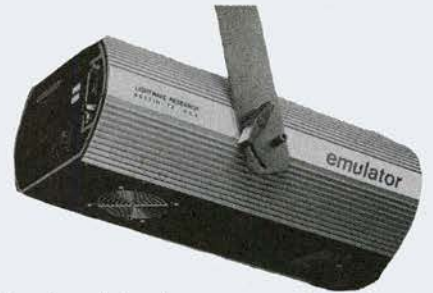
If only more manufacturers saw the end use of their products!

Living in L.A., Chas feels perhaps a move into film lighting might be on the cards in the future. "I've been on the road about 14 years, I think it's a very difficult thing to get

out of, you come back. I spent a little time in Colorado in the mountains, it was conducive to health, but not work!"

The ten man lighting crew were hard at it, Chas had a 2pm focus call, the tour went onwards as the clock ticked. Chas headed off to see how his rig was taking shape, and we bid him farewell.

-Julius Grafton



Emulator (above) uses a xenon lamp for very high output, which is then focussed through a small aperture, beam size is about 75mm at 7m throw. Next best thing to a laser? Intellabeam (left) uses a Philips 700 watt metal halide lamp.

Lightwave Research have a hot pair on their hands with Intellabeam and Emulator, for more info: call G.U.V.T., Noel Bourne, (07) 358 5022.

An affordable and compact moving lantern is the Miniscan from Clay Paki. With a 150w HTI lamp, 8 colours, 7 dichroic filters, bi-colour beams, 5 gobo patterns and strobe effects, it can be addressed with DMX 512 or Analogue, and runs on 4 channels. Best of all is the size, 23 x 15 x 58cm, weight is 8.5kg. Retail price: \$4695, from LAVA (02) 816-4444.



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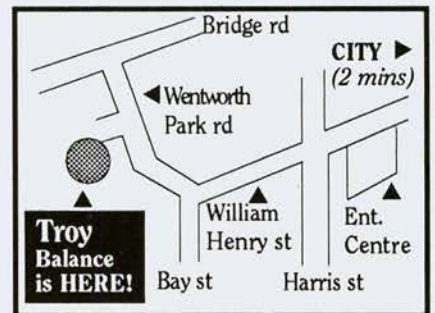
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# Auntie Frank



HI KIDS,

Thanks for your letters, even for those that are taking the piss! As I promised I will answer all your letters eventually. Could you please include your phone number with your letters so that I can contact you, should there be anything that isn't clear in your letters.

□ Tim Stackpool of Precedent Productions in NSW wrote asking two tricky questions - regarding licencing for the operation of pyrotechnics, and lasers. Here is Aunties advice:

Many years ago you didn't have to have a licence to use pyrotechnics for a stage production. Dozens of would be explosives 'EXPERTS' ran loose, going from gig to gig providing special effects. Through those years several horror stories emerged. A singer lost a foot, a young girl was killed when the pyro blew the speaker stack over on to the audience, several drum kits were flattened beyond recognition. Someone who I knew, was blinded for several months and someone who shall remain nameless, (a magazine editor with a hair loss problem?) even caused structural damage to one venue, so that it had to be closed for months (No! it wasn't me!). A lot of the problems in those early days, was that people were mixing their own powders, placing them in to unsafe containers, and firing them by grabbing bare ended wires and shoving them onto a battery or into a power point.

The introduction of pre-packaged pyro would hopefully put an end to all that. But the cowboys were let loose once again. Not content with the effect that the item was designed for, off they went wrapping them in gaff-tape or placing it at an unsafe distance. You could buy flashpots, showers of sparks, streamer cartridges, coloured smoke etc.

New laws introduced mean that the only pyro that can be purchased by a non-licensed operator is sparklers. To obtain a permit or licence you will need to contact : WORK CARE —DANGEROUS GOODS DEPARTMENT. You must also be aware that different venues place restrictions on the use of pyrotechnics. So even if you are licenced you may not be permitted to use pyros in their venue. If you are thinking about rushing out and getting a permit/licence, please bear one thing in mind; **JUST BECAUSE YOU HAVE A LICENCE/PERMIT DOESN'T MAKE YOU AN EXPERT, OR STOP YOU FROM HAVING AN ACCIDENT!** The thing that most cowboys seem to forget is that they are dealing with explosives. If you do happen to be using pre-packed pyro then use it as it is sold, don't modify it in any way. Pre-packaged pyro is passed by the dangerous goods department for use by licensed operators, in it's original form. In the last few months I have seen

Licensed Operators blow the backs off speakers and imbed a packing case into a ceiling. Don't get me wrong there are some good, sensible, professional operators working in the industry. Another thing to bear in mind is that if you do decide to become a pyro-technician you will need public liability insurance. If from the results of your pyro you happen to burn the venue down, or injure someone then you are responsible for the costs. As a ball-park figure you are looking at about \$10,000 to \$15,000 for your insurance. Most venues will require to see your insurance details before allowing you to operate your pyro. If you are serious about learning about pyrotechnics then the T.A.F.E. runs a course which deals with all aspects of explosive, and you finish with an explosives licence.

(MANY THANKS TO DON WILSON FROM HOWARD AND SONS FIREWORKS, Sydney for this information.)

Now, Lasers:

In Australia you are not required to be licenced to operate a laser on-stage. However there are several guidelines. Again, most venues place individual restrictions on the use of lasers in their venue.

Most guidelines deal with industrial and medical lasers. If you want to get literature on the use of lasers, you can contact the NATIONAL MEDICAL RESEARCH DEPARTMENT - CANNBERRA, who have written guidelines on the use of lasers in the entertainment industry. Laser companies will not hire lasers without an operator. Guidelines state that a show must be plotted and all radiation levels calculated. All lasers must have particular safety notices attached to them to comply with Australian standards.

Early next year tighter restrictions/guidelines are coming in to force to bring us in line with overseas standards, which are much stricter. Included in these changes are restrictions on the lasers themselves. A venue in Sydney recently had a suit filed against them because

Write to Frank  
(Auntie) Calvi:

P.O. Box 439,  
Epping 2121 NSW  
Fax (02) 876-5715

their laser did not comply. Most of the guidelines deal with technical details which require a real knowledge of lasers to understand them. I hope that has answered your questions.

(MANY THANKS TO PAUL AND SIMON FROM LASER VISION AUSTRALIA.)

AUNTY FRANK'S BLAST FROM THE PAST. I moved house recently and my flatmate found some old gig-guides, and I thought I might share with you some meories. WHERE WERE YOU WHEN THESE GIG'S HAPPENED? FRIDAY 3RD JULY 1981? (MAYBE 1982) VICTORIA;

Australian Crawl - Village Green  
Ayers Rock - London Tavern  
Angels - Festival Hall  
John Farnham - Central Club  
Swanee - Billboard  
Pop Mechanix - Oxford Hotel  
Redgum - Ferntree Gully  
More next time!

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# Great Mistakes

## THIS is Spinal Tap?

Hi, my name is Steven Norman and I manage a Melbourne band called TYTE. Recently on a weekend tour away (named the Muther Of All Weekends Rock Tour III) the Spinal Tap syndrome hit hard. We were all set for another prosperous country tour with masses of screaming punters and just before we set sail, the horror began.

At 6am Thursday morning I walked out of my house with sunglasses in one hand and the keys to the rental bus in the other. I'd been up late the night before packing, in an attempt at a happy & stress free morning. The bus wouldn't start. I then proceeded to look for the battery, and discovered it was behind the drivers seat! Of course!

Some time later I pickup the band, and of course 2 hours later they start remembering things they've forgotten. With my positive attitude diminishing, we arrive at Swan Hill, where we had been booked to do a lunchtime acoustic charity set in the Town Mall, with T.V. coverage. "The Town doesn't have a mall" said the guy we asked directions from. I set off to find the culprit that arranged this gig, and finally we setup, after borrowing a power lead for the Samic mixer from the local music shop. This being one of the things we forgot.

Meanwhile the local mechanic replaces the (possessed) bus battery, but doesn't have time to check the electrics. He does have time to tell me it ought to be checked, however.

A standard practice in a new town is to work a door deal the first time, to give the venue owner a taste. Entering the venue I'm delighted to see it can hold a thousand people! Showtime is 9.30pm, and I'm not smiling, because 18 people

are inside. We hit our limit at 10.30 with 82 people, and we've lost our shirts. I'm astonished how happy the venue owner is, "what a great night, things are tough up here", he said as he re-booked us. I wanted to kill him!

Next day the bus started OK, we arrived in Echuca and met the friendliest pub owners yet, and went upstairs to wake the crew who had driven over after the previous gig. At soundcheck the FOH desk started buzzing like my electric shaver, whereupon a loose screw was found floating around inside. Satan at work. The crew were looking forward to not packing up, because we were booked for two nights here.

Just before showtime, faithful sound engineer is checking the foldback. Check One Two, Che.... FIRE! A foldback amp was alight, "Do we have a fire extinguisher and a spare amp?" I shouted. Of course not. I looked up to see the band all vibed up and ready to go on. *(It could have been worse, they could have been lost in the catacombs beneath the stage! -Ed)*

The band went on with two monitors happening. The next day is Saturday, and I'm on the phone trying to hire another foldback system. I head out on the highway with directions at hand .... "head towards Kerang, and turn left at the fourth (or fifth) dirt road, after a couple of miles you should see a white shed". On my return to the venue there is a message from the very people I'd just hired the foldback from, saying "it seems we double booked the system, could you bring it back? There's someone in Shepperton who could help you". HA HA HA, sure I was going to take it back and then drive for hours to Shepperton! Needless to say, I kept the gear!

Then it's fix the bus time, there was nowhere

open of course, being Saturday, so I had to pay double. The gig went OK, and just as we're about to leave for Kerang the next day, the crew call to report the truck is dead. Somewhere on the road ahead. My God, will this terror ever end?

I rush to the drummers room, to make sure he hasn't spontaneously combusted and turned into a little green globule on the floor!

We then track down the truck, and with Gaff tape, pliers and prayers get mobile. This last gig is a benefit for which 350 odd tickets have been pre-sold. But alas, we were not to be let off so easily. "There is a problem", I was told on arrival. "It seems the tickets were marked with the times 9.30pm till 1am, but the pub closes at 8pm." I didn't twitch, I didn't get upset. I didn't fall into a mumbling mess on the floor. I just laughed.

We set up our 35 can lightshow and double 4 way PA and performed for an hour and a half in front of thirty non-paying punters.

It was now all over. We were back in Melbourne. My kids (the band) were tucked away in their own little beds in their own little homes. The keyboard player, production manager and myself were smiling because we were so happy. We tried to take the possessed vehicles back to where we got them, but fell over with laughter, because the truck had a flat tyre!

*Postscript: We are now certain this all stemmed from a gig que played previously at Laverton Air Force Base. We are considering taking along a sacrificial lamb on any future tours, mainly because virgins are so hard to find. Unless of course, you have any suggestions?*

Send your story to: PO Box 439, Epping  
2121 NSW, or FAX (02) 876-5715

## Tail Piece or Tall Tale?

"So who's sneaky now, eh?"



## Channels

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