

LIGHTING+SOUND *International*



SEVILLE 1992 UNIVERSAL EXPOSITION

- Around the World in 8 pages: L+SI Special Feature on Expo 92 Seville
- In the Limelight: Major Survey on Followspots
- Rigging and Staging by Arrow
- Wharfedale - Emerging from the background
- Creative Craftsmanship from Arf & Yes
- Discotheque Down Under
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JUNE 1992

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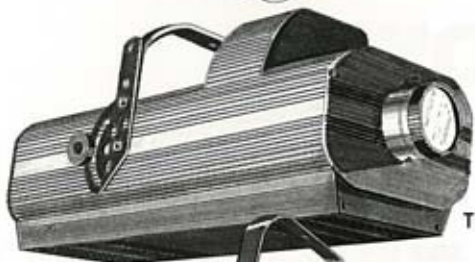
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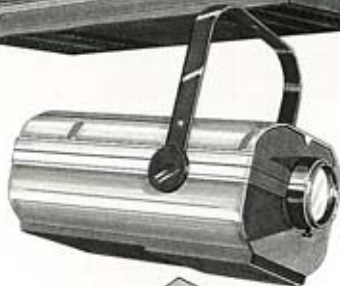
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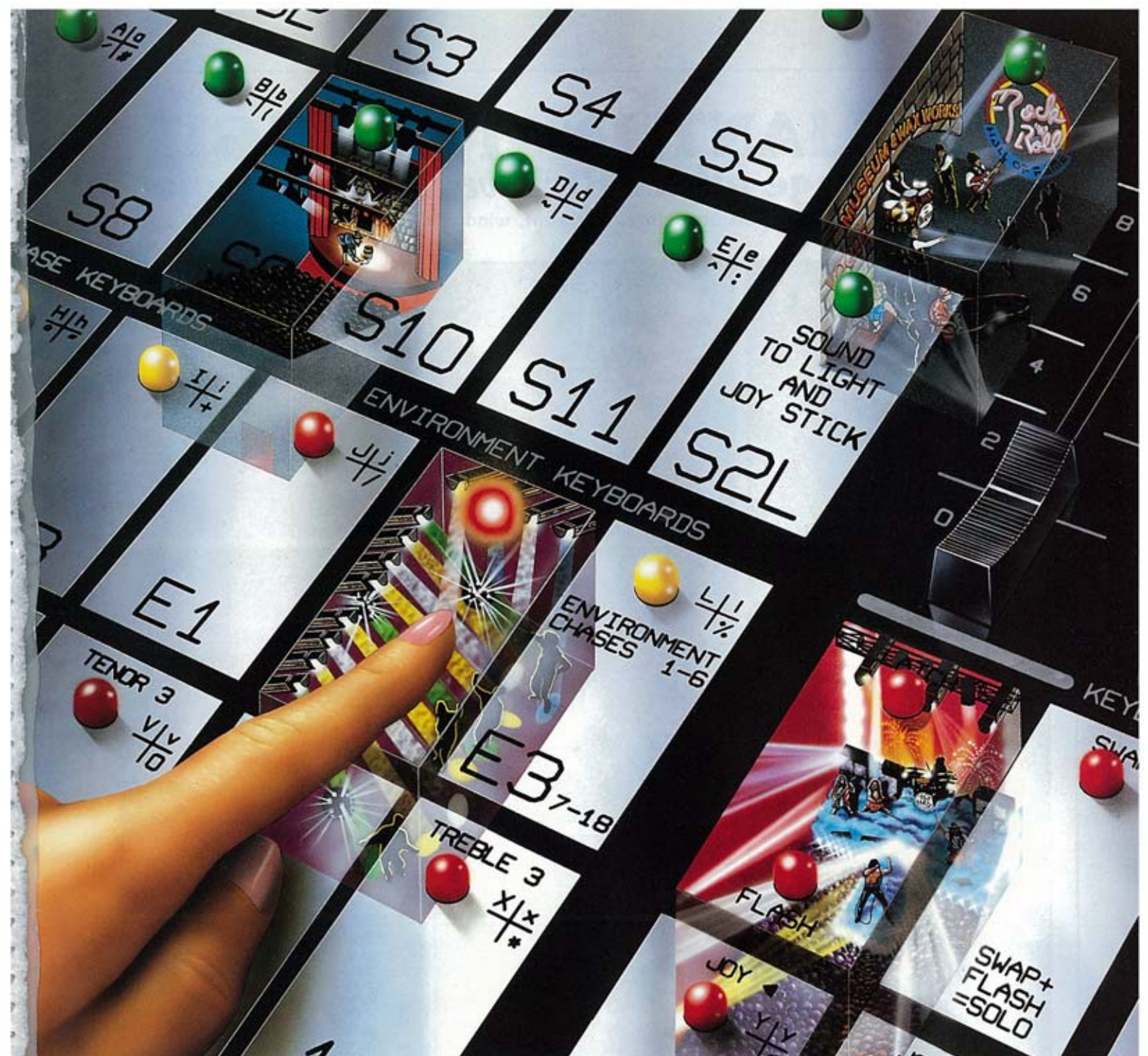
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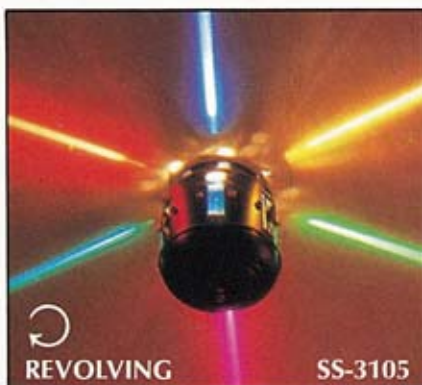
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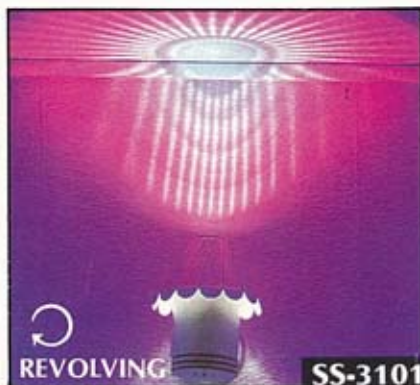


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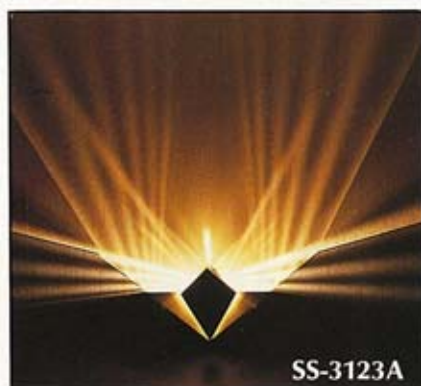
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LIGHTING+ SOUND *International*

JUNE 1992

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Julius Grafton Down Under but On Top

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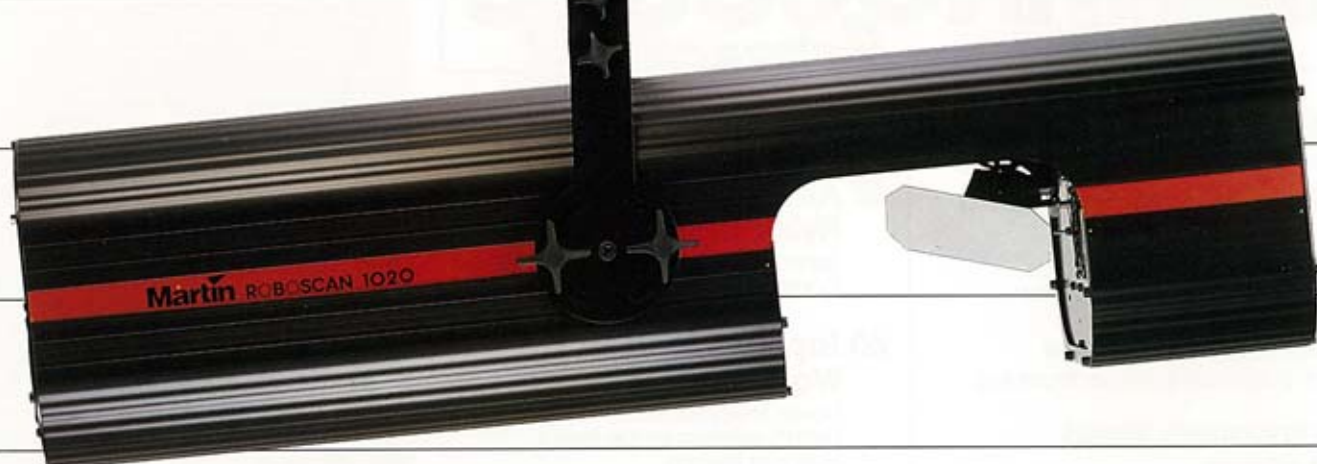
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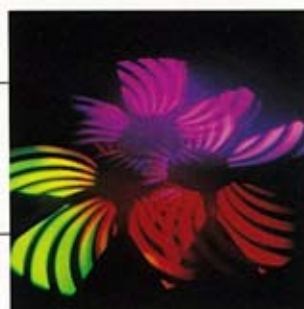


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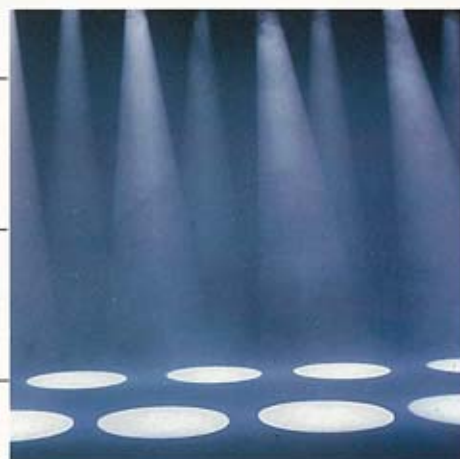
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Delta SR. Professional live performance in the Soundcraft tradition.



Soundcraft

Delta SR

PLASA Push for Better Cross-Industry Links

PLASA's Executive Committee has unanimously supported its inter-association working group's proposal that it should contact to all other organisations in the industry with a view to seeking co-operation and closer working relationships.

There is already some co-operation between PLASA and SCIF (Sound and Communication Industries Federation) on standards, and further development is likely in this area. "The aim will be to offer a wider service to both Association's members at the same time as saving costs," said PLASA's chief executive John Offord. "Two people having to attend all the various committees relating to EC standards is a waste of manpower if one person can go and then share the information."

PLASA's Working Group of Andy Collier (Strand Lighting), Mike Wood (JEM) and John Offord hope at the very least to persuade other bodies to meet a minimum of once a year 'to get to know each other better' and share information on association plans for the future. From there, if a need is proven, the course of further action can be decided. They cited numerous areas where there may be common ground, include: standards, exhibitions, company events, product launches, publications (including codes of practice), seminars, training, consultancy, member databases, appointments service, joint mailings, market information and statistics.

For further details contact Andy Collier, Mike Wood or John Offord via the PLASA office.

West End Birthday Coup

White Light, who are celebrating their 21st year in the business this year, have announced that over half of the Olivier Award-winning productions for 1992 were lit using their equipment. And to further emphasise their 'leading role' they told L+SI that across the West End they are supplying gear to no less than 17 shows, in addition to several tours, conference, exhibition, film and TV companies.

Intellabeams for Starlight

Prior to a major re-launch of the smash-hit London musical Starlight Express in July, PLASA member Howard Eaton Lighting are co-ordinating numerous technical changes alongside lighting designer David Hersey.

The 'New' Starlight Express has new songs, some re-staging and new orchestration. To back this up, a huge package of new equipment is finding its way into the Apollo Victoria. From Lightwave Research via Lightfactor Sales 24 Intellabeams, 30 Dataflash units and eight Emulators are currently being installed as part of the changed lighting rig. The control system will also see major changes. Full details will be provided in a future issue of L+SI.



Tony Gottelier, associate editor of Lighting and Sound International, goggle-eyed and raring to go for his 3-D experience in the Fujitsu Pavilion at Expo Seville. For further information on all the lighting and sound equipment at the Expo, see our main feature starting on page 23.

AES-UK-DSP

The Audio Engineering Society UK Digital Signal Processing Conference to be held in the Council Chamber at Kensington Town Hall, London on Monday 14th September 1992, brings together 18 presenters with extensive experience in both digital signal processing and audio. It is an essential event for all audio engineers wishing to take full advantage of the possibilities presented by digital signal processing, say the Society. Presentation of the fundamental issues of processor choice, filter design and topology, and code development will provide the understanding needed by engineers new to digital signal processing. For those already familiar with DSP in audio the variety of applications presented will widen their horizons.

The effects of digital signal processing on sound quality need careful assessment as well as a fuller understanding of the listener as the final receiver, say the organisers. 'To this end we have included a session on DSP and psychoacoustics to explore aspects of this important topic.'

For further details contact AES Ltd, DSP Conference, P O Box 645, Slough SL1 8BJ. Telephone (0628) 663725, Fax (0628) 667002.

Jesus Effects from Strand

Two Light Palette 90 lighting control systems from Strand Lighting are being used to handle 300 special lighting effects in the mammoth French production portraying the life of Christ.

The show 'Jesus Etait Son Nom' features actors performing against a background of a massive stage set with movie film inserts and a pre-recorded soundtrack. The production is playing an extended run at the Palais Des Sports, Porte de Versailles, and is due to go on a world tour. Lighting director is Christian Breaun and the lighting control system was installed by Strand Lighting France.

Roboscan XXX

The next edition of Roboscan due from Martin of Denmark will be 'the finest Roboscan ever built', according to director Peter Johansen. Weighing in at only 30lbs it incorporates a new Philips lamp, the MSD200, developed in conjunction with Martin. The unit is now in production and according to the company, over 7,600 units were ordered by dealers world-wide when informed about the product.

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Action News



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The Art of Light

revealed

Lee Filters does much more than manufacture high quality light control media for the film, television, theatre and stills photographic markets.

The company offers—whenever it can—to make an additional input to the industries it serves.

That's why it has developed a series of technical posters—available free of charge—to help filter users make the most of its products. To understand more fully how the art of light works. To create better images.

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Each Lee filter is defined as being either CLOSE, SIMILAR or needing a COMBINATION of grades to achieve the colour of its equivalent.

The poster represents an easy-to-use guide enabling you to source exactly the colour you need.

To get your free poster (size 33" x 23½") simply clip the coupon and send it to:

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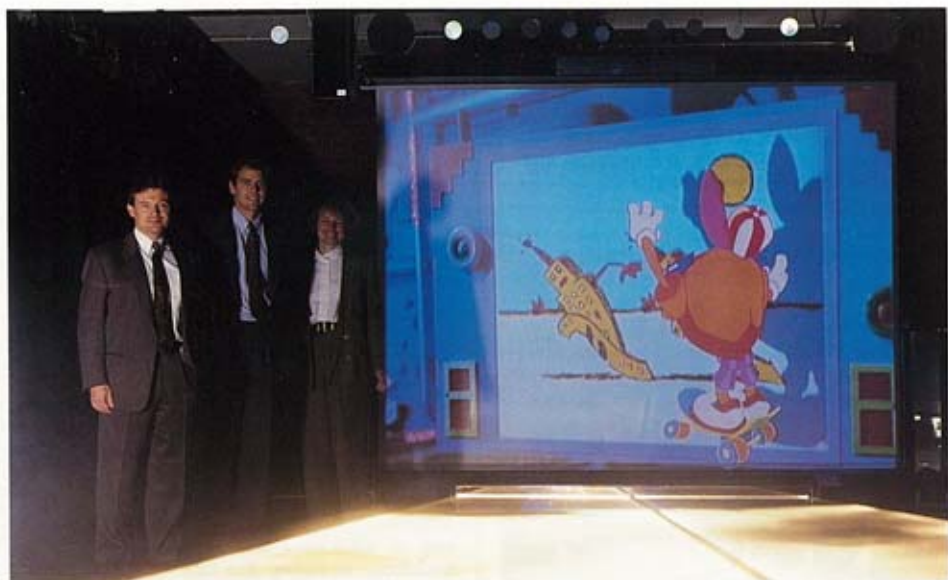
This is what you've come to expect from Lee Filters. The art of light. And more.

Please send my free copy of the Lee Filters Comparator Poster.

Name _____

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London demonstration: (left to right) Stan Black, Advanced Laser Projection vice-president of marketing, Scott De Walde, ALP engineer and Sussi Chrstiansen of Laserpoint.

New Generation of Laser Video Projectors

As a result of pan-European co-operation with Laserpoint DJS, the London office of Laserpoint Communications, the availability of a new generation of Laser Video Projectors has just been announced. The units, called Multi-Plane Imagers, are manufactured by Advanced Laser Projection of Dallas, Texas and are being sold and rented out by Laserpoint DJS throughout Europe. The company has been granted exclusive European distribution for the US firm and takes delivery of two \$500,000 machines this month.

The new system will be offered with a unique picture positioning system called Image Mover which allows precise picture size, orientation and position in X+Y to be set and controlled from the machine's on-board computer. Any video picture can be set to appear at any line of sight position around an auditorium or stadium. One system can project a picture 60ft wide on a screen at one moment, and then 6ft wide on a glass plate, elsewhere in the display area, a split second later. Such a device will certainly enhance the creative possibilities open to show designers when using video. The system also generates around 15 watts of 'spare' white laser light which can be utilised by



The ProFX multi-plane imager.

Laserpoint's own laser display equipment to create conventional special effects and laser imagery as part of a synchronised multi-media projection exercise.

The Laser Video Projection system has just completed 10 days of highly successful demonstrationsto invited communications industry companies at Laserpoint DJS's London offices at 1 Hardwick Street, EC1.

Autograph's Spanish Hour Success

Thursday, 21st May 1992, was Great Britain Day at Expo 92 in Seville. An hour-long Royal Gala at the end of the day featured the music of Andrew Lloyd Webber, with Autograph Sound Recording supplying the sound equipment for the event.

Autograph's Duncan Bell travelled out to Seville to manage the installation, which required 50 Meyer loudspeaker units, 110 microphones and 1.5 kilometres of multicore cable. In order to avert on-site technical problems, all the equipment underwent rigorous testing at Autograph's London base, before being transported to Seville by road. Truck access time at the Expo site was limited to the early hours of the morning, tightening the deadlines to stretching point.

The event took place in the Expo 92 outdoor auditorium, with music supplied by the Royal Liverpool Philharmonic Orchestra and choir. For a one-off event lasting one hour, an enormous amount of effort was required. Installation had to be squeezed into Tuesday 19th May, rehearsal time occupied Wednesday 20th, with the event scheduled for the following day.

See our feature on Expo 92
in this issue pages 23-33



Martin In Madrid

The Martin Professional stand at the Expo Musica exhibition in Madrid last month attracted a huge number of visitors.

Martin's British lighting designers Steve Rawlins and Mark Ravenhill produced a fully choreographed light show which demonstrated the range of the company's products. The crowds were especially impressed by the effects produced by RoboColors and the new RoboColor MSD200.

Martin gave the show a Spanish flavour by displaying the flags of all the Spanish provinces - to the delight of the Spanish audience. The finale showed the Olympic rings. Photographed above is a typical capacity crowd - the queue to get in started half an hour before every show!

ASL Celebration

On May 8 and 9 ASL Electronic of Switzerland held their fourth annual dealer and customer meeting in their offices in Basel. The meeting marked ASL's tenth year of trading, so managing director David Scherz was keen to put on something special for the 400 end-users and 70 specialised dealers who attended the meeting. 'Something special' turned out to be a combined show using FAL Supercleverscan plus Laser Grafix lasers and JEM Heavy Fog 6500 and Roadie machines. Other products on show came from Power, Gemini, King's Sound, Abstract, RST, NJD and Lite Structures. Said David Scherz: 'Even Switzerland is beginning to feel the r-word, but with our quality product range, we're looking for good business in the next 12 months.'

Pictured below is the Fal Supercleverscan plus and Laser Grafix Purelight controlled by Prisma.



LETTER

Dear Editor,

FREDDY AND THE 3.05

I noted with interest that 'Freddie Lloyd' was running in the 3.05 at York on May 12th last. Do Zero 88 not pay their larger than life sales director enough so that he has to resort to galloping to the finishing post as fast as his little fetlocks can carry him? I have heard tell that he is a three day eventer with a girth to match and is inclined to get the bit between his teeth. I never realised Zero 88 kept such studs in its stable. I think we should be told. (Name and Address supplied)

Editor's Reply

My sources at Zero 88 inform me that the odds were 11/2 with the form guide showing steady improvements in performance. In fact 'Freddie Lloyd' won the race, leading from start to finish. Naturally they all had a flutter and were delighted to win.

The real Freddie Lloyd was actually on holiday at the time and they thought he was in Spain! Staff at Zero 88 are now busily checking his other holiday dates against the three times the horse has run so far this year. Freddy was unavailable for comment as he has a bad foot.

Lighting Exposition

The International Lighting Exposition will once again be held at the Metro Toronto Convention Centre from June 21st to 23rd. Further details from Gary Dugan in Canada, telephone (416) 890 1846.

Take off for Starlaser

Elton John's tour management gave Starlite Technology just one day's notice of their last minute decision to use the Starlaser, amongst a vast array of other effects, on the European leg of the 1992 World Tour, currently playing in Germany and coming to the UK on June 21st. Brett Salmon of Laser Grafix, who provide the laser expertise for the product, barely had time to do his laundry following his return from Japan, where he and Starlite's technical director Ray French had been promoting the product for the Yamaha Music Foundation. Yamaha are Starlite's Japanese franchise holder. Martin Lubeck will be joining Salmon on the Elton John gigs.

Grafix are not using a Purelight on this tour, opting for one large frame Argon Ion laser instead. This will be used to feed simultaneously up to four Starlaser heads, which combine generic light and coherent emission in the one articulate luminaire. Two heads will be used to highlight the Rocket Man and to scan back and project images onto a backdrop, including the face of the spaceman zooming through a star field.

The other two units are used to send effects over the heads of the audience. The product has a US Variance to enable stage scanning of performers under rigid conditions.

Lightwave Dichroics For ET Adventure

Universal Studios Theme Park in Hollywood, California has added Lightwave Research dichroic filters to their popular attraction, 'The E.T. Adventure'. Award winning lighting designer Daniel Flannery and theme park designer Pat Allegos selected dichroic filters instead of acetate or polyester colour media.

Frank Montero, owner of Hollywood-based Proscenium Lighting, worked with Flannery and Allegos on the project's design. The team turned to Austin-based Lightwave Research to manufacture filters. According to Montero: "We decided to use Lightwave Research over several other manufacturers because we were able to give them a particular sample and they were able to match it. The colours Lightwave Research produce are very pure and the quality is superb." Lightwave's dichroic laboratory produced over 380 filters for the attraction.

World DJ Champs

November 1992 is the month set for the World DJ Championship Finals. Heats have already taken place and further UK heats will be arranged in response to demand, and will probably take place in September and October. The organisers, DMC Ltd, are expecting more groups to enter this year, although they are encouraging all-comers. The Finals will take place over four days. The proposed itinerary for the finals is as follows: 8th - 'Welcome to London' DJ day; 9th - Championship Finals; 10th - Technics Musical Award Show; 11th - Dance Aid Trust Dinner.

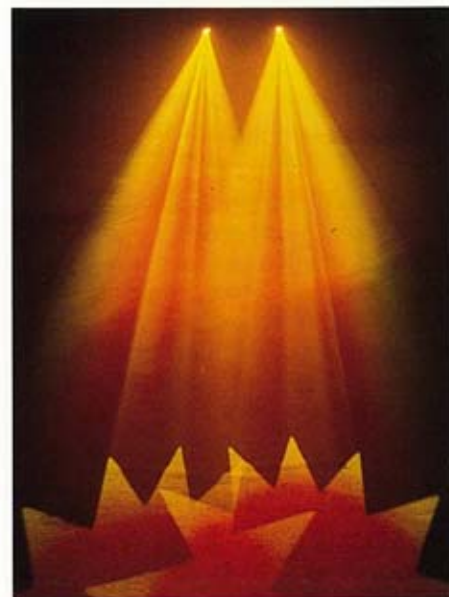
Further details are available from DMC in Slough, telephone (0628) 667124.

FAL Intelligence



Since FAL upgraded their established Supercleverscan HMI 575 lamped intelligent projector to 'Plus' status with three of the seven dichroic colours (plus white) now being bi-coloured and the unit made DMX 512 compatible, UK distributors Avitec have 'promoted' the unit to their top product in intelligent lighting.

The unit (pictured above and in action below) also features variable speed strobing and colour



change as well as seven unique gobos and was previewed at SIEL and Rimini earlier this year, where industry pundits were heard to have nicknamed it 'Infallbeam'. Avitec reckon the product is tough enough to stand up to on-the-road use, and are also promoting its smaller sister, the Primoscan, with similar facilities but with five colours plus white and five gobos, and using a Thorn Arcstream HBI 150 lamp with an astonishing average rated life of 6,000 hours.



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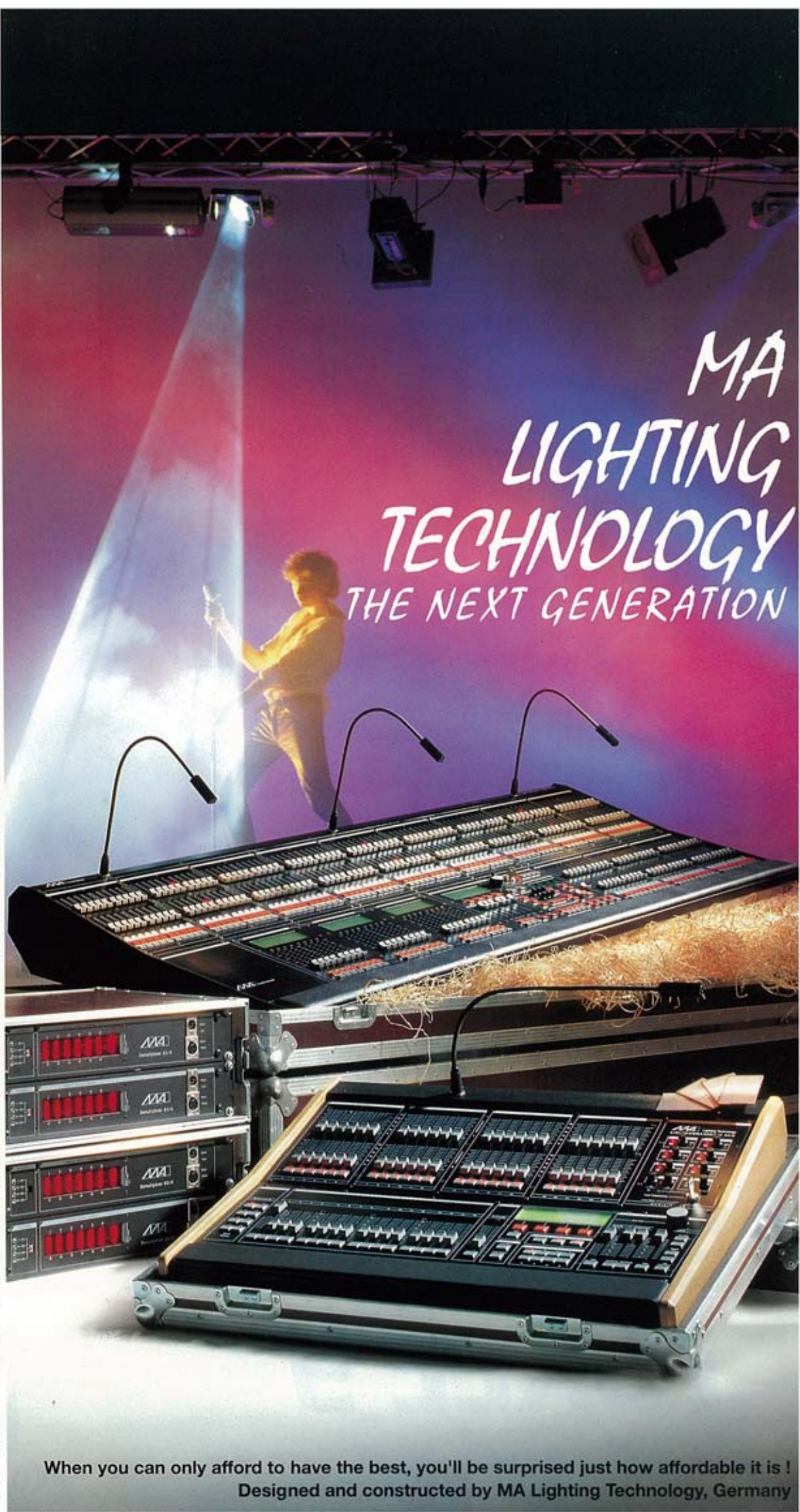
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PROFESSIONAL

Sound News

■ **The Sound Department Ltd** has finally moved to their long-promised new premises. After seven months in temporary accommodation the company can once more start to trade from their purpose-built premises based in Bicester, Oxfordshire. The company has also been busy negotiating new product lines: Ashley Audio music signal processing and power amplifiers, Galaxy Audio hot spot monitors and new permanent installation speakers. More recently, the Biamp range of contractor based mixers, processors and amplifiers has been secured, together with Quam's range of commercial loudspeakers. The new premises also offer room for a design office who are currently working on a number of tours. The rental side of the company continues to concentrate its activities in theatre. The Sound Department can be reached at Unit 6, Murdock Road, Bicester OX6 7PP. Telephone: (0869) 322666.

■ After starting his own company - **Network Events** - Peter Walker had the unenviable job of selecting and purchasing his own new sound equipment. After much consideration he decided to purchase the University FC100 compound diffraction horns fitted with 1828T drivers. Since the purchase from **Shuttlesound** Peter has used them on the London Marathon, the Royal Windsor Horse Show and the County Show circuit.

■ The **Citronic SM650** Remix was the centrepiece of the recent successful 'Hit the Decks' tour by Megabass and Two Little Boys. The SM650 was enjoyed so much by the lads that it has been used to Remix much of the next Megabass album due out in May.

■ UK automation systems manufacturer **Out Board Electronics** has appointed Lisbon-based hire and sales company JGoncalves as product distributor for Portugal. The agreement came after Jorge Goncalves, also a leading theatre sound designer, won the contract to supply sound equipment, including an Out Board Electronics SS1 theatre sound automation system, to the Portuguese National Theatre in Lisbon. With a combination of patented Out Board motorised faders and processor-controlled routing, the SS1 can integrate with the theatre sound system to produce accurate and repeatable multi-channel effects combinations. The SS1 system is used in many West End and Broadway productions. It is specified as standard equipment in the sound system design for world-wide productions of the smash hit musical Miss Saigon.

■ **Wigwam Acoustics**, world-wide distributors of AVX induction loop products have appointed Group One Ltd as their US distributor.

■ A **Nexo** sound system has recently been installed in one of Stockholm's discotheques, the Cafe Opera. The system based on Nexo's PC range has been designed and installed by Nexo's Swedish



Cafe Opera, Stockholm.

distributor LEAB Lilliehook Electronic AB. A Nexo sound system is also installed at the neighbouring Stockholm Opera House. In Italy, Nexo has appointed BluAudio as their new distributor. The Bologna-based company hopes to further consolidate Nexo's position in the Italian discotheque market and to increase market share

in the live sound hire and theatre installation sectors.

■ Sound reinforcement and dry-hire company **Dimension Audio** has provided 40 of its RTS BP325 intercom belt-packs and Beyer head-sets to outside broadcast company, Mobile Image, for use at the Barcelona Olympics. The dual channel RTS system is considered ideal for this type of application and features internal functions that are fully configurable. In addition to the RTS communication system, Dimension Audio is also providing a number of RTS PS31 power supplies.

■ Thada Research, **Celestion International's** distributor in Thailand, completed two installations in Bangkok during the winter period. The first was



The Nuclear nightclub, Thailand, now the proud owner of a Celestion sound system.

at the Nuclear pub, one of the largest in the city, with a capacity of 1500 people. The installation features a total of 16 SR1 (500 watts each) and ten SR2 (1000 watts each) sub-bass enclosures with an SRC1 controller. Furthermore, Thada Research has installed a live keyboard monitoring system at the Nuclear, comprising a pair each of the SR1 and SR3 enclosures run alongside an SRC3. On a more unusual note, Celestion enclosures were used exclusively throughout the Royal Guards Parade held in Bangkok on December 5th to celebrate the King of Thailand's birthday. The sound system comprised 140 SR1 full range cabinets installed in batches of eight, mounted on lamp posts around the parade ground.

■ **Music Room Hire** have installed a sound system at Pimlico school. The school specified a high quality system on a limited budget, with a degree of portability and ease of operation. The system, one in a series of installations in Westminster schools consists of Yamaha EMX2200 powered mixer driving a pair of Electro S200 speakers and a pair of passive TL606 sub bass boxes. Peavey powered monitors and Beyer mics completed the package. A more Bizarre use of the JBL Control 1s came through their employment to stop a flock of starlings from roosting for the night, on a £75 million refurbishment in London's Piccadilly being carried out by Wimpey Construction. Music Room were supplied with a tape recording of a starling distress call, which was played through 12 waterproof JBL Control 1s using a Denon DAT player on a special timer.

■ **Bose UK** have announced their appointment as 'sponsor and official PA supplier' to National Music Day. National Music Day was conceived by Mick Jagger and Tim Renton MP, former Minister for the Arts to celebrate Britain's heritage of live musical performance. Bose are a major sponsor and have donated a £10,000 rig as a competition prize for communities participating as well as the supply of Bose PA rentals around the country.

■ **HW International**, UK distributors of Shure audio products have announced that they are now sole UK distributors of the QSC Audio Products amplifier ranges from the USA. Best known in the UK for cinema amplification systems, the QSC ranges comprise four series of high quality power amplifiers designed for all professional audio applications from studios to major touring rigs. HW International will officially launch the QSC ranges at the APRS '92 show at London's Olympia from June 3-5. This will also be the European debut of the new QSC MXa line, recently world premiered

at the NSCA in Anaheim, USA.

■ The Who's Pete Townshend is heading an ambitious bid to put the beat back into Liverpool. A £100,000 appeal hopes to re-equip a recording



Left to right: Danny Tarbuck, studio engineer and Phil Hayes, centre manager, at Liverpool Studio with the donated Soundtracs Megas console.

studio for the city's rising talent. Other donations have come from Peter Gabriel, Phil Collins, Billy Bragg and **Soundtracs Plc** who donated a Megas Studio 62U console.

■ The Leeds-based audio manufacturer, **Wharfedale Loudspeakers**, will exhibit at the Pro Audio and Light Asia show for the first time this year. Models on display will include the famous 'Force' series sound reinforcement products, the 'Programme' range of commercial loudspeakers and power drive units from Fane. A brand new product to be launched at the show is the Force 10 SB sub-bass cabinet which features two 15" drive units in a compact 120 litre enclosure providing 1200 watt power-handling and 100 dB sensitivity for discotheque and live sound applications. The Wharfedale/Fane booth is number UK 6 and can be found in the British section of the quiet hall.

■ **E.M.O. Systems** have recently appointed dealers in Germany for the first time. The two agents who will handle their entire product range are Camco Produktions-und Vertriebs-GmbH and g.t.c. Studiotechnik Berlin GmbH.

■ **Celestion International** have produced a new colour professional loudspeaker catalogue. It gives technical specifications and can also be used as a wall-chart to show off the company's entire loudspeaker range.

■ **Stagecraft Systems** of Cannock in Staffordshire have been appointed authorised JBL-Soundpower dealer for central England. A complete range of cabinets are on demonstration at their premises, along with associated control and amplification equipment from C-Audio.

Royal Opening for Neve HQ

On 20th May this year Prince Edward, officially opened the new headquarters of Neve Electronics International Ltd in Litlington, Hertfordshire.

The formal opening ceremony took place in the glazed atrium of the new premises. The facility is located on a seven acre site near Royston in the Hertfordshire countryside and Neve moved there in stages starting in February this year.

Comprising 4,500 sq metres the fully air-conditioned complex has allowed the company to once again centralise its operation by bringing R&D back under the same roof as sales & marketing and special manufacturing and administration. As a direct result of Neve's extensive product development programmes, particularly in the digital domain, the R&D centre was moved to its own larger premises three years ago. In keeping with the company's long-term development programme, the Litlington facility also has room for 25% expansion.

Prince Edward was given demonstrations on all aspects of console development, design and manufacture and his tour culminated in Neve's own state-of-the-art recording studio, where he was given a demonstration of sound mixing on the newly launched Capricorn console.

ON TRACK WITH TRUSS

Tony Gottelier with Lite Structures

If Adrian Brookes and his associates at Lite Structures have reason to regret the unfortunate passing of their previous corporate entity, there are few signs of it at their new Wakefield production facility. Sited in an old mill that was formerly part of the Tootal empire, expansion is already afoot with new office facilities under construction and, according to the company, output is running flat out.

Nor is there any shortage of new ideas from a company that recognizes the necessity to make a product as ubiquitous as trussing, identifiable as a branded product. Lite Structures believe that providing added-value may be the solution to this problem and the first such product to address this is 'Livelite'.

In what should be seen as a considerable coup, they have combined with Concord Lighting in a joint development project to create a triangular truss with integral mains power. As you can imagine with Concord's participation, this involves the incorporation of a four circuit light track in one of the members of the truss which will directly accept their standard track adaptors. Fully compatible with other Lite Structures products, such as Astralite, Quatralite and Bilite, each track is rated at 8 amps each, so there's enough power and structure to support several Parcans. The product is also available in a range of finishes to order, the company has its own powder-coating facility, and a choice of six lengths from 0.2 up to 3.0m.

A substantial market for Livelite is anticipated for exhibitions and display, though the company also hope that touring technicians may also be persuaded to forgo the more traditional approach, for the sake of the considerable time and cost saving benefits of the new product.

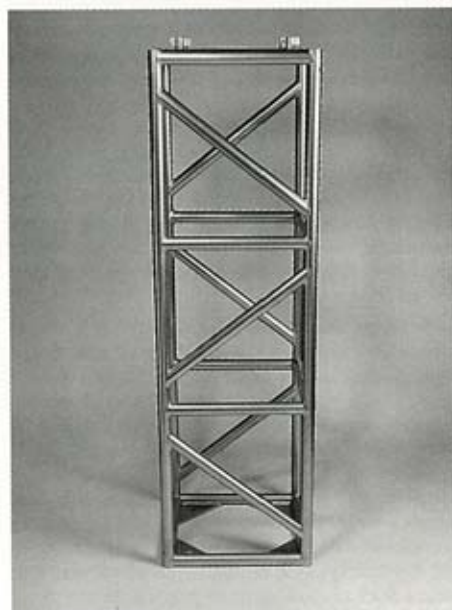
Another new product, aimed at moving the company into new markets, is a heavy-duty concert-grade trussing system called Megalite. An interesting aspect of this 600mm box-section is the unusual coupling system, which is a Lite Structure's exclusively designed, high-tensile galvanized steel latch called 'Antiloose'. Antiloose is so called for the absence of loose components which may break free, or be misplaced, as is sometimes associated with more usual methods of connection.

The company also believes that the standard of finish for this product is another marketing and practical plus, Megalite is finished in a smooth epoxy coating.

Once again Lite Structures anticipate heavy demand for this product, evidenced somewhat by the fact that they had started delivering the



The first delivery of Megalite leaves the factory.

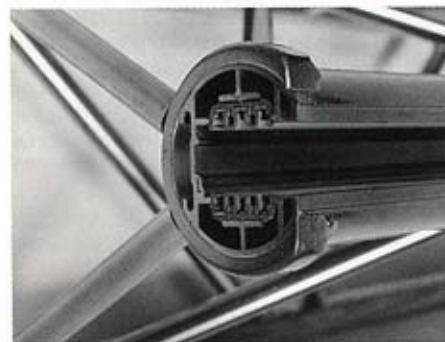


Truss in profile.

product even before it was announced or photographed. As can be seen from our adjoining photograph of their truck loaded to the gunnels with the product.



Lite Structures' Livelite - a joint development with Concord Lighting.



Truss-n-Track - a close-up of Livelite.

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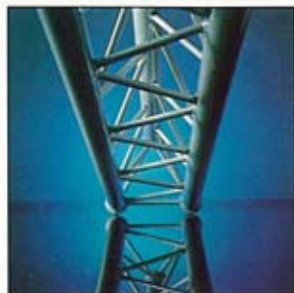
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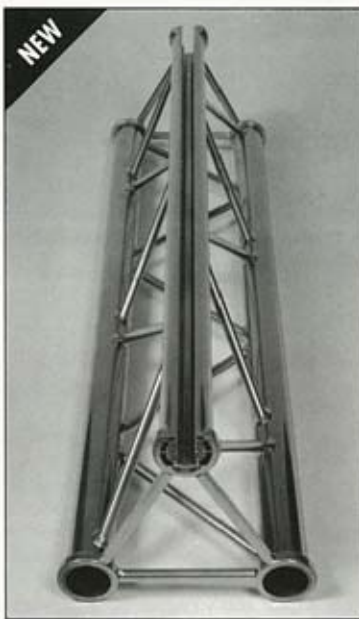
Bilite



Quatralite

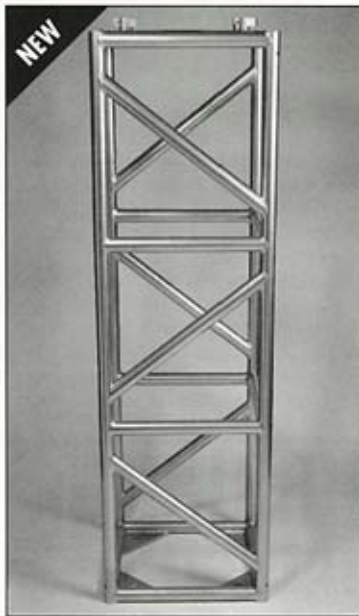


Minilite



LiveLite

is a design registered trussing system with integral mains power. It is fully compatible with Astralite, Quatralite, and Bilite, and is available in the same finishes. The integral power supply is a B.S./I.E.C. approved high power track offering 4 circuits of up to 8 amps each, so there's plenty of power combined with enormous strength.



MegaLite

is a large-format, quadrangular concert trussing system for heavy-duty applications. In addition to its massive tensile strength and load bearing capacity, MegaLite's connecting system gives it a useful plus.

STRENGTH WITH FLEXIBILITY

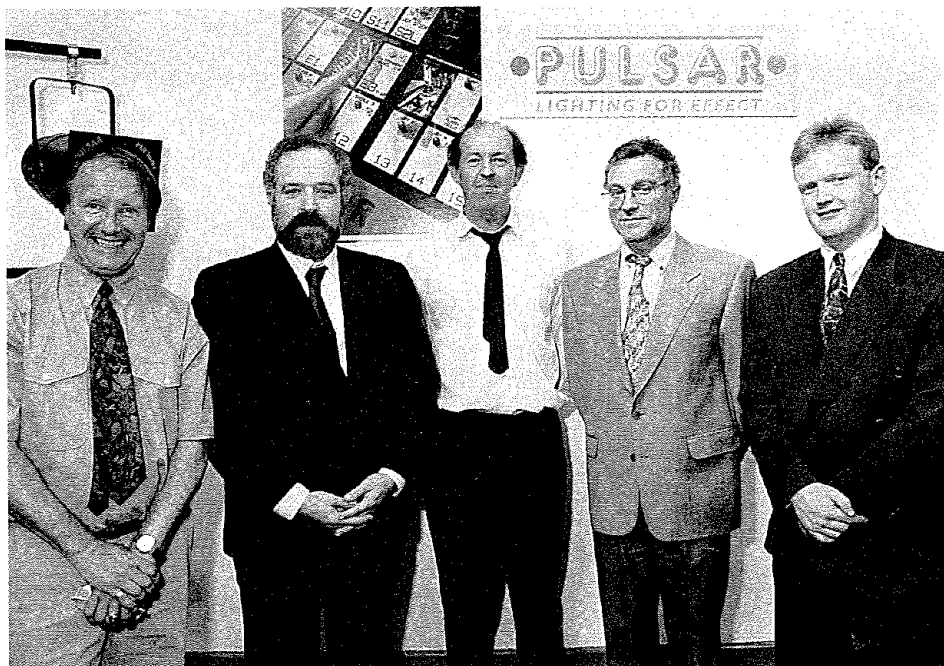
All that's rigid about *Lite Structures* is the product itself. From *Minilite* to *MegaLite*, all our structural sections have huge load-bearing capacity and high tensile strength. In every other way, you'll find us very flexible.

To begin with, we offer a larger choice of formats than anyone else. *Astralite*, *Quatralite*, *Bilite* and our revolutionary new *LiveLite* are all intercompatible, opening still more options. All our products are offered in a huge range of smooth, durable colour finishes, and all have a full range of accessories and fixings. We are happy to custom build and offer full CAD facilities. It's an unbeatable package and truly flexible; and that's its real strength.

Lite Structures



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CP&P Spain launched: (left to right) Derrick Saunders of Pulsar, Jesus Urija (CP&P Spain/Show Trading), Ken Sewell of Pulsar, Juan Carlos Romero of Conelcsis and Andy Graves of Pulsar.

CP&P Move Into Spain

We've hinted in the past about CP&P spreading their colours around the globe, and, right on cue, Clay Paky and Pulsar have just announced the launch of an operation within Spain to handle the full product ranges of both companies.

Up to now Pulsar products have been distributed by Kremesa who 'own-branded' them, whilst Clay Paky's range was promoted by Spanish dealer Show Trading. The decision to set up the new company reflects the wish of both Pulsar and Clay Paky to build a stronger base for the future and improve their presence in the potentially large Spanish market. CP&P are taking advantage of Clay Paky's successful relationship with Show Trading who have formed CP&P Spain as a separate division within their own operation. The move follows the immediate success of CP&P Germany, with the Spanish operation aiming for the same high standards of support and service.

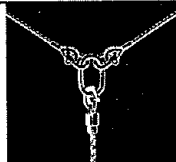
CP&P Spain will be headed by Jesus Urija and is based at Burgos. Pulsar and CP&P director Ken Sewell told L+SI: "From the customers' point of view, they should receive the same level of product supply, service and support as they do in Britain, Italy, Germany or France where the full CP&P philosophy is implemented."

SMPTE Conference

The programme for the first European Conference of the SMPTE (Society for Motion Picture and Television Engineers) has been finalised. The event will take place during Photokina (16th to 22nd September 1992 in Cologne). Trade visitors from all over the world will be able to gather information about trend-setting radio, television and cinema technologies in four sessions on the theme: 'Film and Television - Ways to the year 2000'. The subjects under discussion in the first seminar will be the trends in film and television programme production, the archival storage of tapes and films as well as new methods of film presentation.

The theme of the second session will be 'Digital Imaging and Data Reduction - Application in Television'. 'From 16:9 to HDTV - Production and Presentation' will be the topic discussed in the third session and the fourth will cover 'Digital Audio - New Developments for Sound in Film and Television'.

All sessions will be concluded by a panel discussion. Papers and discussions will be simultaneously translated into German/English. The conference will take place in KolnMesse's Congress Centre East. For further information contact: Rolf von Kaldenberg, telephone (02053) 8559, fax (02053) 6665.



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Touring Pyro

Le Maitre's schedule for their pyro crew over the next few months includes an interlocking list that covers Guns N Roses, Dire Straits, Prince, Simply Red, Roxette and Michael Jackson at numerous venues across the UK and Europe. In addition they have Euro Disney activity, Heartbreak House in the West End, Citroen through the UK until the end of August, Barnum on tour and the Chippendales (two troupes) in the UK and Europe.

We've heard Le Maitre's performance timing's always good. Taking a look at their complicated crew listings we hope they are as well co-ordinated in the staff travel and hotel booking department!

Lost in the Bubbles

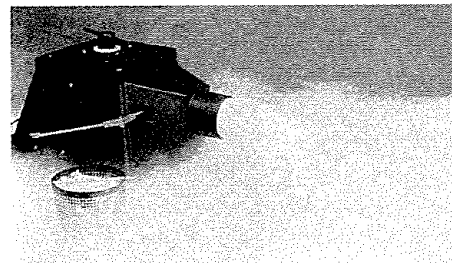
Deep in the text of last month's feature 'Coca Cola Afloat', we told you that Vidiwalls were used in the presentation. Sharp-eyed readers at Laserpoint have told us that this was not the case.

They were in effect Pioneer projection cubes from gues who . . . ?

Supersmoke and Cumulus

The recently formed 'The Effects Company' based at Crawley down in Sussex is now offering its initial range of products. They include the Supersmoke range and the Cumulus dry ice fog machine.

The Supersmoke smoke machine with its interchangeable modules and remote controllers has been designed and built to a very high standard, say the company, and particular attention has been paid to previously expensive cost of after sales service. A block has been designed which is both cheap and easy to refurbish. It is available with two fluid power systems and interchangeable remote units giving ultimate flexibility and control over smoke output. A wide range of ancillaries exist including adaptors, drip trays, ducting, 'Haze' smoke fluid and 'Standard' smoke fluid.



Cumulus in action.

The Cumulus is the natural progression in dry ice machines say The Effects Company. Many new design features include a lift out basket for quick exchange to a standby basket to give virtually continuous fog, and the recessed heater element socket is fitted above the water level preventing accidental damage and ensuring that the machine will not leak in the area of electrical connection. The high capacity dry ice basket ensures huge quantities of fog output.

The Cumulus has a single action lid locking mechanism whereby a small turn of the crossbar handle will secure the circular lid with its unique double seal system, ensuring a positive pressure seal. The tapered front nozzle enables the optional fitting of either a 6" professional ducting adaptor or a restricted 2.5" ducting adaptor for use when greater projection of fog is needed.

Also available from the company is an innovative version of the popular confetti cannon. "Our unique ball and socket arrangement allows this well designed and finished cannon to rotate through 360 degrees and is the only cannon that has a variable angle tilt of up to 52 degrees from the vertical," director Martin Blake told L+SI. "All this is from a static base which can be free standing or fixed to a solid horizontal or vertical surface."

Contact number for The Effects Company is (0342) 718399.

Lighting News

Over 170 offers of papers have been accepted for **Lux Europa**, the European lighting conference to be held in Edinburgh from 4 - 7th April 1993.

Of these, 88 are full papers and 84 are poster displays. Authors come from 30 countries. The conference, which will be held at Heriot-Watt University will consider all aspects of lighting application plus daylighting. In addition to the main sessions there will be special interest seminars. Registration forms will be available from September from the Member Services Department, CIBSE in London, telephone 081-675 5211.

G E Thorn Lamps Ltd, manufacturers of Mazda, are now established in new offices in Mitcham. Since the move, the creation of a new sales office structure has been of prior importance and various retail, commercial and industrial sales office functions have been brought together to form G E Lighting. The new sales office structure is divided into regional areas so the company can now offer customers personal sales contact. Key improvements in customer service have been implemented to deliver a speedy and more accurate response to sales office calls. A new telecommunications system has been installed with direct dial telephone numbers allocated to specific sales regions. Every G E customer will be given their own direct dial telephone number. To find out the telephone number for your own account and personal sales contact phone G E Lighting 081-640 1221.

Alex Saad, lighting designer for Australian act Bjorn Again (an ABBA concept band) is presently on tour throughout the UK and Europe with a **Jands** Event 36 memory lighting console. Alex has undertaken to meet with interested lighting professionals whilst on tour and to demonstrate the Event board which uses the same microprocessor as found in the Apple Mac Plus computer. For more details contact Nic Tolkein at A C Lighting on (0494) 446000.

Masters Class in Stage Rigging

Celtech Events, based in Scotland are organising a course of eight days of intensive theoretical and practical rigging, in association with Theatre Safety Programs from the USA. Places on this first course will be limited to 200, with 20 of the places being made available for nominees from sponsors, for those of limited means. The cost per participant will be £300.00 + VAT, with participants paying separately for travel, accommodation etc. although economical rates are being arranged with airlines and local hotels and guest houses.

This class will be called the Masters Class Level I, with a subsequent more involved course Masters Class Level II planned provisionally for September 1993.

The Masters Class in Stage Rigging is a seminar in theatrical, arena and rock and roll rigging and rigging systems. The seminar is designed for the working professional, system designer, equipment or system installer, or anyone who works with theatrical rigging equipment. The seminar instructors are leading working professionals who deal with these systems and equipment in their everyday work.

Some of the areas covered in the Masters Class Level I include:

Rigging system components, Rigging system inspection, arena and rock and roll rigging: loading of structures, proper bridling, hardware. Rope: design, manufacture, selection, use, storage and disposal. Liability and risk management, flying of performers, Hardware: selection and use.

Attendance at the Masters Class Level I course will give participants the opportunity to enrol in the advanced Masters Class Level II course which will be publicised as soon as details are finalised. For further information contact Grant Collie, project coordinator on 031-557 8809 or Maeve Ryan, administrator on 031-220 0464.

London-based **Supermick Lights** are supplying lighting equipment for a number of current tours including Stevie Wonder's recently announced UK and European tour from May to mid June, UK Eurovision runner-up Michael Ball's UK and European tour in May and June, American singer Michelle Shocked's three week tour, Gypsy Kings' European tour, the UK and European tour of Shakespeare's Sister and Santana in Europe.

To ease the problems of showing products at international exhibitions and seminars, **Celco** recently invested in a touring rig consisting of the latest Mitsubishi 4x4 Shogun with custom-built trailer.



For the 25th Summer Olympic Games to be held in Barcelona in July (pictured above), **Philips Lighting** is supplying the lighting in all the major sports venues. Products and systems supplied by Philips include some 4,000 floodlights incorporated in lighting installations. Other divisions of Philips Electronics are also making major contributions to the Barcelona Olympics. Products and systems they are supplying include electro-acoustics, paging systems, different Vidiwall screens, PABX telephone exchanges, access and security systems, laser videos, videos and TV sets. Total sales of Philips products and services for the Games will be in the region of 150 million Dutch guilders.

HHB To Distribute Cedar

HHB Communications has signed a significant distribution deal with Cambridge-based Cedar Audio to handle sales of the manufacturer's Audio Production System as well as the company's first stand alone module, the DC-1 real-time stereo de-clicker. The agreement gives HHB exclusive rights to market both products in the UK, with additional provision to distribute the DC-1 throughout Europe and other territories.

LETTER

Dear Editor,
IT CAN BE DONE!

I respond to the small news item which appeared in the April 92 issue of L+S entitled 'Quote of the Month'.

I have been a theatrical lighting designer for the past nine years lighting many varied productions (plays, musicals, dance, panto etc) for many different companies (most of which must like my work as they invite me to light for them production after production). I have designed, rigged, focused, plotted and operated the lighting for productions at 'name' theatres right throughout the country (including London's West End - The Duke of York's and the Fortune), and continue to design/rig/operate the lighting regularly for productions at theatres (large and small) in and around Cardiff and Swansea, and at my local 800+ seat theatre.

Oh, by the way - I am a registered blind person.

Alan Lewis

PS I wonder how many lighting desk operators really appreciate the facility 'RECORD BLIND' on their desks!

Modelbox at Wembley

Modelbox has completed detailed and up-to-date ground plans of every area of Wembley Conference Centre. The new plans are now outlined in Wembley's new general brochure as well as permanently available on computer at Modelbox as part of its bureau service.

Modelbox began the complex project last year and worked closely with technical staff at Wembley to draw up the plans from existing drawings and detailed site surveys.

A technical brochure is being produced and plans will be presented with detailed technical and operational data relating to each area and will offer an 'at a glance' guide to facilities for organisers, as well as more in-depth detail for production companies and contractors.

Companies using the major conference facility will be able to plan their exhibition layouts by using either the technical brochure or, for more complex set ups, by liaising with Modelbox Bureau Service and using its computer design facilities to accurately plan the layout of their event.

Celestion Acquired by Kinergetics

Kinergetics Holdings (UK) Ltd have announced that they have signed an agreement to acquire Celestion International Ltd subject to Celestion's shareholders' approval, and had also acquired KEF Electronics, creating one of the most formidable high-quality loudspeaker groups within the industry. KEF Electronics will now trade under the name of KEF Audio (UK) and Celestion will remain unchanged.

Celestion International Ltd (the loudspeaker manufacturing division of Celestion Industries plc) and KEF Audio are among the largest manufacturers in the UK, with internationally recognised brand names and extensive international distribution networks.

Celestion Audio's management team under the leadership of Gordon Provan, its managing director, will remain intact.

VSI take JBN to Queen

Much news from VSI Clublife this month. Firstly they have moved into new offices within the Queens Hotel in the Crystal Palace.

The new base offers full conference facilities, and VSI are constructing a permanent JBN Sound Ceiling complete with lighting in the hotel's Princess Function Suite. AS UK and Ireland's sole distributors of the JBN Sound Ceiling system, VSI will have a permanent demonstration facility. The Princess suite will also be available for hire from VSI for all types of functions.

Other news from VSI is the success of the JBN Sound Ceiling in a recent outside demonstration in St James Square in the centre of London. The system has been approved for all London's high society outdoor events - these will be in association with Bentley Entertainments.

Stagecraft Move

Thursday 23 April 1992 was the official opening date of the new premises, in Cannock, for Stagecraft Systems. The honours were performed by Cannock's Raving Loony MP Mel Hartshorne.

The new premises, some 3,000 square feet in total, feature reception area, retail counter, demonstration suite, offices and workshops. The demonstration suite is the main focus of attention with products on display from most major manufacturers, including JBL Sound Power, EV, C-Audio, Shure, Studiomaster, Pulsar, Lampo, Griven, Coemar, Abstract etc. The lighting is arranged as part of a fully functional rig using Tri-Lite and Astralite structures. The company can be contacted on (0543) 467532.



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TOMORROW'S WORLD, MANANA

Tony Gottelier (Phileas Fogg) and Ruth Rossington (Passepartout) explore the world of Expo in Seville



La Barqueta - linking the old city of Seville with the new world of Expo.



One of the main entrances to the site.

A while ago I was invited to a rather splendid dinner party given by a bloke whose role in life was as a travel agent. Since it was his fortieth, he had invited 40 guests to a West End Hotel where we all sat at four round tables, each of which was given the name of a Continent. It is a credit to the abundance of splendid wines that I cannot, for the life of me, remember which one was missing. After each course all the men flew off to a different Continent, the idea being to encourage people, most of whom didn't know each other from Adam, to mix in a convenient and amusing way. Of course, it will work rather better if he ever gets round, and can afford, a fiftieth.

Expo '92 reminded me very much of that party, especially in the sense that in the morning you can be in America at 10 o'clock, any one of the European countries at midday and in the Antipodes during the same afternoon. This concept, perpetuated more permanently at Epcot, is a kind of late twentieth century version of the grand tour where, in keeping with these days of high speed communications and television immediacy, the world is brought to you in a single location: a real global village in which 63 nations have pavilions on the 215 hectare site, and that doesn't include the

heritage and commercial pavilions, a total of 95 in all.

Around the world in 80 hours of which at least eight would be spent queuing at the most sought after locations, or standing eight deep at the bar of the Kangaroo Pub! With all that country-hopping in temperatures of 45 degrees, this was probably the most popular location on the site, though oddly not part of the official Aussie effort. That aside, it's obviously a big opportunity for an outburst of national pride, not to say national jingoism.

This outbreak of national interest naturally affects the host country more than most, and there is no doubt that British attempts to hijack some of the commercial spoils were outmanoeuvred and out-gunned by a latter day Armada of Spanish contractors who were not about to give up their precious cargo lightly. The problem was that in many cases they were sailing in uncharted waters, especially when it came to the entertainment technology, but in true buccaneering spirit it was considered more convenient to acquire the necessary charts by stealth. As a result, several potential British protagonists returned from Seville before the event to lick their wounds and to count their considerable losses.

To continue the historical allusion, it would be convenient, but quite untrue and entirely out of character, to say that while these skirmishes continued, Captain Offord and his PLASA crew played bowls on the Sussex Downs until the propitious time, and then sailed into Seville to scoop the glittering prizes. Unfortunately, timing of the incursion was quite beyond their aegis to control, because the machinations of the local

contractors were so entirely unpredictable. As with earlier attempts to chase the Spanish galleons into the Guadalquivir river, by and large the PLASA fleet returned with light cargoes.

Nevertheless, there has been considerable British input in Seville, but understandably, and this is a lesson for similar opportunities in the future, in virtually every case it has happened as the result of the close participation of local commercial interests. And the prizes were considerable. For example Electrosonic, who have been by far the most successful, notched up participation in some 35 pavilions through their associate Electrosonic Iberica - claimed value in excess of £6m. Belgian manufacturer of professional lighting equipment ADB achieved sales in excess of £2.5m through their association with Siemens who, as the national supplier of telephones, are considered as Spanish as paella. Siemens were also a major supplier of power distribution gear. Others, like Strand, appointed a sole agent or distributor for Expo alone, treating the site as an island territory, divorced entirely from the Iberian peninsula, which, in a sense, it is.

For when you enter Expo, as has already been suggested, you are in another world. Or more accurately, a world within a world. The only



Above, centre and right: Shapes of Expo.





The outdoor air-conditioning system.

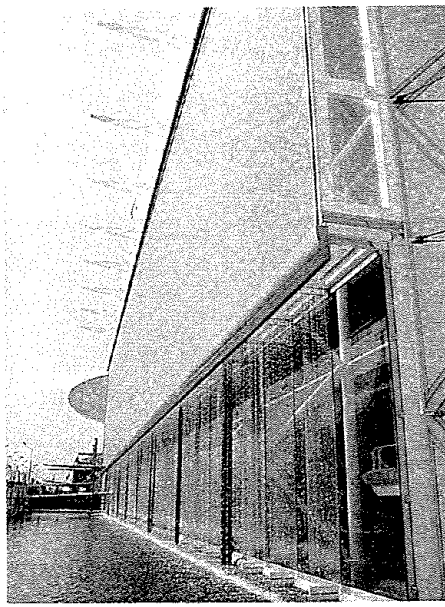
obvious link with old Seville, considered by many to be Spain's most beautiful city, are the clocks, all of which give a different time, as indeed they also do at the airport! For Seville, like the rest of Spain, is a place where time seems to have little meaning - which is great if you are on holiday, but bloody frustrating for impatient north Europeans with work to do. One of the places where time can stand interminably still is in obtaining accreditation to visit the site as an official member of a party. It was here that we had the first of many subsequent occasions to be extremely grateful to Graeme Pusey, late of Strand and now contracted to Siemens for the duration, who proved to be the most efficient ambassador both in dealing with such bureaucracy and in smoothing the way to gain immediate access to the various pavilions without standing in line. No disrespect to Joe Cooper, commercial consul, but by the end of our four day visit we had unofficially appointed Graham our honorary consul on site, and all of this while the poor man was supposed to be on holiday!

For a couple of scribblers whose combined Spanish doesn't run much beyond 'uno palermo blanco', we were certainly also grateful for the hombre's ability with the language, which also gave us moments of great amusement. For example, to overhear Passepartout described as 'una chica guappa' (pronounced chicka wopper) which, we were assured, just in time to avoid a bunch of fives from the lady in question, actually means 'beautiful girl'. We also learnt from the same source that there is a brand of bread in Espagna called 'Bimbo' and a coffee called 'Bonka', which gives a whole new meaning to B&B, or a cup of coffee and a ham sandwich!

The other link to the city, is a physical and visual connection with Seville's long and proud nautical history. For the sail and the prow have been adopted by the international architectural community as the universal icons for Expo 92.



The crowds arrive en masse to see the World.



A waterfall facade for the British Pavilion.

(Not so the organizers who, aside from the giant marmalade orange, for which Seville is perhaps best known in the UK, but which was actually the global symbol synonymous with all modern Expos, went for the Curro, described as a white bird with elephant's legs and rainbow coloured breast and beak. Caramba!)

You see the maritime metaphor invoked on the lampposts and in the street furniture, in the design of the buildings, the numerous sail cloth roofs and the interiors. Most impressively, you see it in the two magnificent bridges which really are the visible and physical link between the old city and the new world of Expo. La Barqueta, literally 'the schooner', is a majestic sweep of a bridge from which most visitors will approach the site, the construction of which is evocative of those great wooden vessels of the past, stripped to skeletal form preparatory to planking and tarring. However, my outright favourite is the Alamillo, an extraordinary suspension bridge, where the entire span, which carries both cars and pedestrians, is hung from a single member, shaped to the prow of a giant vessel - (and it's made from British steel would you believe!)

The maritime metaphor is, of course, an allusion to the past glories of Seville which, established BC and the home of that infamous washer of hands Pontius Pilate, was also the port from which Christopher Columbus, and other great navigators incidentally, sailed to the Americas and elsewhere. The treasure which they returned to Seville in their bulging holds, that is that which escaped the British pirate ships en route, established this city as the gold capital of the world long before London assumed that mantle. (I know all this because I sat through numerous AV presentations telling me so. Mind you since virtually every north European country, including Ireland, was claiming to have got there first, not to mention that they all invented the printing press, the electric light bulb, telephones and television. Can you really believe any of it or is it all the propaganda of ancient spin doctors?)

Naturally, the Irish had allowed their traditionally wacky sense of humour to run riot more than most with the suggestion that some hair-brained paddy inventor, clearly suffering from over indulgence of the poutine, claimed to have discovered the principle of the infinity mirror. More, this was claimed as a sort of Freudian attempt to re-discover his past, and see into his future, life. By placing two mirrors opposite each other, with the inebriate eccentric somewhere between, he claimed to see his childhood on one side and his dotage on the

other. Shouting "eureka", or in this case probably "beshamus", he later owned up to great disappointment that he was quite unable to witness his own birth! The gravitas with which this was put over in the pavilion ensured that nine out of ten visitors stuck their heads in the glass sandwich before realizing that they had been had.

Talking of things Irish, we were delighted to run into lighting designer Tom Donnellan, he of the Rotterdam Harbour project three years ago and the articulate performance of the environmentally-sound 'Pax' in the Harland and Woolf engine works in Glasgow more recently, who is now a resident in Spain. Tom has suffered outrageously at the hands of perfidious Expo contractors since the enterprise was first mooted, but is now happily ensconced at the 15th Century pavilion, where he is responsible for the technicals, which I must say were among the best and most effective on the site - including the massive revolve on which the audiences are, unknowingly, seated. Tom and the production team are currently negotiating with the ICA to bring the 'Pax' light and music concept to London, where a dramatic assault on Westminster Abbey is planned in the Autumn, when he looks forward to doing splendid things with his old mates at Samuelsons.

But if Expo is a melting pot in the global village sense, it is also one in the literal sense - it gets damned hot! As much as 55 degrees. Centigrade in August, and 34 during our May visit. The inventive Spanish, who are used to the problem and solve it by withdrawing at midday for siesta until well into the afternoon in buildings made naturally cool by both the shade of trees and the building materials used, set about creating an outdoor air conditioning system for those of us less resilient mortals. What they have done is to create a micro-climate by providing large shaded areas, introducing vast numbers of trees and other plantings, diverting the available breezes and using humongous amounts of water to lower the temperature by just a few degrees. A technique, called micronization, is used extensively to create fine water sprays which create evaporation and heat absorption. In some cases this is even done in the trees themselves! And if none of that works you can always bathe your aching feet in one of the innumerable shallow pools.

Otherwise, you could immerse yourself totally in the 21,000m² artificial lake which is the centre of the night life at Expo. The focus of attention here is the nightly, and originally titled, 'Espectaculo del Lago' which features considerable UK input, alongside French and American participation. This is the show which Fisher-Park made such strenuous efforts to achieve. The final result is a very much watered-down (pun intended) version of their grand scale visualization and one from which they would wish to distance themselves. Nevertheless, from a much reduced spend, enough has been salvaged to capture the public imagination and the show can claim more, larger and even more impressive water screen projections, by ECA2, than Euro-Disney. Laser Creations provided the large frame Argons, deftly programmed by the ubiquitous Gino Malocca, and the show featured the first European outing of Syncrolites' 7kW Xenon automated searchlights. Though the visible output was not as bright as one might expect from such a highly rated lamp, the crew were experimenting with colour changers during our visit and eventually, I am sure, it will become a versatile and useful part of the outdoor scene. This melange of kit was coordinated and controlled by an Electrosonic time-cotte based show controller, from a command bunker

submerged in the middle of the lake. I have seen some bizarre control points in my time but this one took the cream cracker!

So the splendid wall of water, which is the main feature of Nick Grimshaw's design for the British Pavilion, is not just the pretty face of architectural vanity which gave us the Eiffel Tower and the Crystal Palace in the past. It also provides a cool atmosphere for the permanent and lengthy queues of people, between ten and twelve thousand daily are claimed, patiently waiting outside the edifice in the hope that inside it is just as exciting. Not so I am afraid, though I take nothing away from the efforts of Media Projects, David Hersey and others for their slick presentations. No, it's the interior of the building and the display area, in particular, that's a real let down. When you've got 'em all tee'd up for the kill, as the result of the skilful efforts of the aforementioned, a handful of limp displays from M&S, Royal Doulton, Land Rover and others just served to confirm the 'damp' image this country is seeking to shake off. This is the negative aspect of commercial sponsorship which demands its pound of flesh. Wouldn't the cause have been better served by an exhibition of the competitively selected output of British art schools and design colleges which could have provided that extra stimulus and recognition so lacking recently in that area? And wouldn't the resulting contest have proved even more valuable public relations for an enterprising sponsor?

One aspect of architectural arrogance which had a direct impact on our sphere of interest, were the poorly designed performance spaces, where a total lack of the right experience, and the refusal to employ theatre consultants, has resulted in the Palenque and the Auditorio in particular being very difficult spaces. The Auditorio, by far the worst example of this mal de desin, didn't even have provision for a dimmer room, nor for suspending the lights at an appropriate level (it was left to Siemens and ADB to resolve this in the most practical way possible after the author had bolted). Since this was the venue to be lit by Durham Marengi during British Day for the Andrew Lloyd Webber fiesta, we asked Tom Donnellan to see what transpired and to give us a brief report which appears later in this feature. Nevertheless, among all of these missed opportunities, there was one sparkling gem. The Teatro Central, had

received the benefit of articulate and pragmatic technical performance requirements, from a trio of experienced theatre people headed by Juan Gomez-Comejo, from the very beginning. So impressed were we with this infinitely flexible facility, which incorporates a considerable Hoffner install, that we intend to cover it at greater length in a special article in the next issue of L+SI, together with the Palenque.

Another high point was Fujitsu's highly realistic 3D graphical AV performance using Imax-Solido. For this Omnimax 48 frames per second transmission, visitors wear goggles that are LCD flip-flops, alternately blanking each eye, as the film does the same. Thus is the eye tricked into the deception. Based on a Japanese mannequin show, with caterpillars, ladybirds and a variety of other brightly coloured bug-eyed monsters, the film has a strong educational message. The kids in the audience were completely enthralled, especially when a giant chameleon with a long red tongue appeared to lick their noses. And the adults were just as entranced. The only disappointment was the simultaneous translation which was by separate headset, and incomprehensible over the sound track. In fact, strangely, the only people who seemed to have this recurring problem beaten were the Japanese themselves in their own pavilion. Here, the transmission was selected from your seat and delivered through the side-cheeks of the headrest. So directional was this that you had to move your head a great distance before you could even hear the general soundtrack.

The approved sound suppliers to Expo were Ramsa-Panasonic who, if they didn't always have a speaker suitable for the purpose designed and made one to fit the bill. While this wasn't always entirely successful, and there was inevitably considerable resistance to such restriction of choice, especially among the theatre technicians, in general the results were acceptable to my poor ears. Similarly, the PA system around the lake, the lampposts for which were physically very intrusive, did seem to deliver acceptable levels to the public, though the professionals again expressed their doubts. In individual pavilions a variety of the world's PA speakers made an appearance.

The following quotes from various returning visitors give a fair overview of Expo '92: 'Hours of tedium punctuated by seconds of sheer brilliance'; 'I am AV'ed out'; 'Immaculate conception, flawed execution'; 'It seems as though money has been lavished on the buildings at the expense of exhibit content'; 'When dealing with the Latin mentality, you should hope for the best, expect the worst and accept anything in between'; 'In my next life, please may I be a Spanish-speaking secondhand monitor salesman'.

Our prize for the best conception and implementation goes to the New Zealand Pavilion, not just for their hospitality either, their 'experience' was also extremely well executed. Better yet, their ingenuity in shipping the entire shebang from down-under and building it entirely with their own crew, which resulted in their pavilion being the first national structure to be completed, speaks volumes.

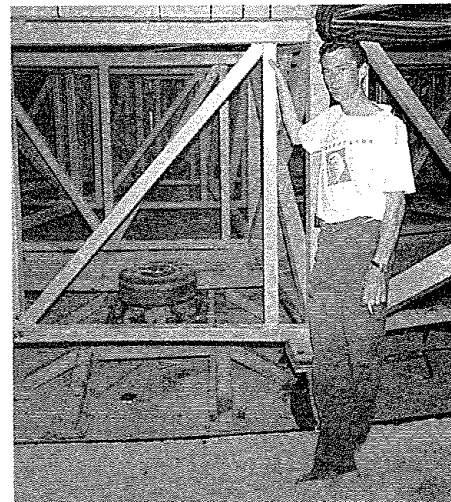
And so to the pavilions themselves . . .

15th Century Pavilion

In a way the thing which gave us the most pleasure here was seeing dear old Tom Donnellan, lighting designer extraordinaire, happily settled for the duration of Expo after a long struggle trying to get other projects together on site, and in charge of the technicals in this exciting venue. Produced by MQ Productions of Madrid the main show is a mixed media

performance with live mime artistes in the style of the pod shows in the British Pavilion.

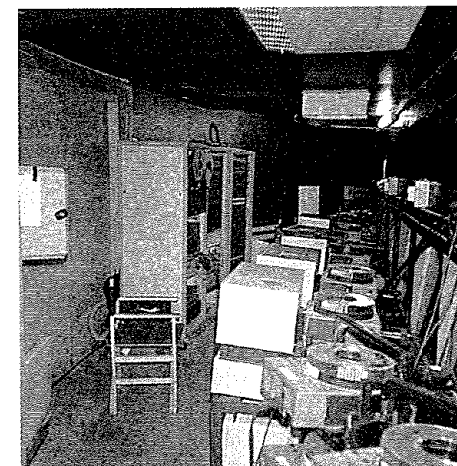
The historically-based pre-show, known as the clock show, is reminiscent of the Cathedral in Wenceslas Square in Prague, with lots of mechanical figures popping in and out of windows and some very nice projections mixing gobos with slides from 50 Kodak SAV2060 carousels controlled by Dataton PAX. It all had a nice Renaissance feel about it. Inside, the audience are treated to a beautifully lit theatrical performance using various Strand lanterns and Colour Faders all controlled from a Lightboard M and supplemented by 12 Hardware for Xenon DHX-1000 and the same number of Carousels under the command of another Dataton. The audio is all Soundcraft into Bose 802s.



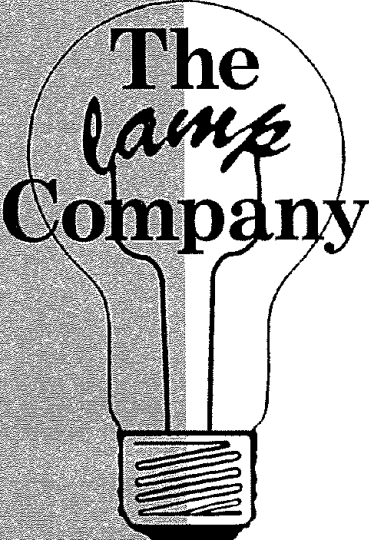
Tom Donnellan with the revolve drive below the 15th Century Pavilion.

The most striking thing about this minitheatre is that the audience is imperceptibly revolved through 180 degrees during the performance, so that one exits into a totally different area - very disconcerting and disorienting! Now that we have seen the revolve mechanics we can see how it was done. Suffice to say the mechanics are massive, not dissimilar to the silent drive on the Paris Metro. The problems are likely to come later, according to Tom, because the electrical cables which turn with the revolve are cut too short, his last minute arrival on the scene being too late to take avoiding action.

Indeed, this kind of problem is widespread at Expo, this not being the only pavilion (Australia being another) which is 56cm all round smaller than the architect's drawings. (The amount of materials saved in this way must add up to a considerable sum). One last and amusing touch was the cherrypicker backstage used for prepping, which is on hire, but too big to get out of the building unless it is sawn in half. Nice one for the hire company.



The rear of the AV equipment.



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New Zealand Pavilion

It seemed to us that the Kiwis had got it all about right and without spending £30m. Anyway, they certainly got our vote for the best and most pragmatic performances before, during and after the event. Before, because hearing on the bush telegraph that things might not be quite as efficient as the PR made out in modern Spain, they shipped their entire pavilion lock stock and AV shows from NZ - and the crew to build it. In which knowledge, you may feel that it is significant that it was the first of the foreign buildings to be completed!

The exterior facade is a rocky cliff face inhabited by a small colony of pneumatically controlled animatronic gulls, with water features and a 15 minute cycle of sound effects and bird noises giving the feel of a sea edge experience. The ubiquitous moisturizers are here also since the designer, Logan Brewer, is very concerned to keep his audience, waiting in the queue outside, cool both mentally and physically. The exterior certainly succeeds in this sense, the added gauze awning helps also, and the birds, though rather kitsch to look at, certainly attracted a lot of attention.

Cool is the motive inside also where, in the chilled and darker environment of the pre-show area, two groups each of eight Sharpe LCD video projectors provide an atmospheric 360 degree overhead display of visuals in the domed ceiling sampling the sights and sounds of the geography, anthropology and discovery of the Southern Hemisphere. Sources are eight Laserdisc players and three compact discs and the surrounding artefacts are effectively lit with synchronized lighting.

Then you move to one of two theatre scenarios, where a wide-screen 35mm back projected film of New Zealand's greatest export (after lamb and kiwi fruit), Kiri Te Kanawa, sings a Maori poem to music. The unexpected element of this performance, and a clever touch by any stretch of the imagination, are the secondary screens, in the shape and form of sails which emerge from a downstage pit. As the sails move about as if in water, different 35mm movie images are projected onto them. At first we thought these were supposed to be windsurfers, which just shows how the media images of the sub-continent stick. In fact, they represent in one

case an ocean-going Polynesian canoe, a mid-nineteenth century migrant ship and a state-of-the-art racing yacht.

In the second theatre, three interlocked Kineton endless loop 35mm cine projectors, as used in the previous room, play onto animated Multiscreen consisting of 144 movable elements, which is programmed by PC to make various combinations and patterns. The movie, which is naked national propaganda (and why not, it's the Government's money after all), is still easy viewing and jazzed up to be really exciting by the moving screens. Apparently, it is intended to portray New Zealand as 'clean and green, selling meat that doesn't glow in the dark (French nuclear testing notwithstanding - author's note), water you can drink and offering the romance of a Pacific paradise.' Show control in both theatres was by Siemens PLC through POL Microdrive.

Sound throughout, which had considerable presence but was inclined to bleed a little between venues, was Altec Lansing. So, accolades during and afterwards also, not just for the ingenuity of the shows with minimal hardware and fuss compared



The multi-media AV show in the British Pavilion.



Xylo and Turbine combine to create 'Spain Today'.



Espectaculo del Lago - a nightly occurrence at Expo.



The dramatic approach adopted by Imagination in the EC Pavilion.



ADB equipment features prominently throughout the site. Here one of their desks is employed at one of the many small performance areas.



Laser Creations lasers pan out from the top of the French Pavilion.

with others, but also for the best audience flow control at Expo and for the welcoming and friendly attitude exhibited by all concerned. And all of this came without any Disney charm school fake smiles.

Yes, on a value per dollar basis the New Zealanders certainly earned our accolade as most deserving and effective pavilion at Expo '92.

British Pavilion

If AV has a high profile at Expo, and it does, the British Pavilion is no exception. Visitors to Nicholas Grimshaw's £30m architectural tour de force see two major audio visual shows, though the second is strictly a mixed media performance. Both have been engineered by Electrosonic's Systems Division. First stop is a six minute video 'sculpture', outlined with vibrant blue neon, where 288 monitors of various different sizes, supplied by Electrosonic, are arranged in two back-to-back 'random' displays. Each is fed by eight videodisc sources simultaneously fed by Electrosonic Picbloc image processing equipment and controlled by their C-Through computer programme.

Visitors are greeted by two 'navigators' who usher them into one of two 200 seat welcome areas, a gathering technique typical of the crowd control systems adopted throughout Expo, where they are seated on either side of the double-sided display. The presentation, produced by Line TV, is designed to overcome some of the, so-called, myths and pre-conceptions of the great British people which had been thrown up, apparently, by DTI research: Britain as an enclosed society, an unemotional race, a place where it continuously rains. To combat these stereotypes, sepia tinted archive images were juxtaposed with short bursts of current and contradictory material, culminating in a short dedicated video, with original vision and soundtrack edited and coordinated by Line's Tynm Lintell.

Visitors leave the Welcome Show by travelator past a central sculpture which receives kinetic



Artist's rendering of the first of New Zealand's theatre scenarios.

treatment from rows of 150W 4000k Arcstream lamps mounted behind perforated grilles set into the floor. Action Lighting, who supplied the lighting for this feature, modified the Microlite fittings to act as an adjustable uplight and the light beams are then slightly diffused to feather together, with a set of soft diffusion glasses. For more 'organic' movement within a haze created by integral smoke machines, banks of aircraft landing lights are sequenced into a flickering pattern via an Electrosonic dimmer system.

Visitors subsequently arrive at one of two identical theatre 'pods', apparently suspended in space, to see the multi-media presentation. These shows were conceived by Neal Potter of RSCG

Conran Design, who was also responsible for the interior design of the pavilion, and were produced by Media Projects. Potter specifically wanted a theatrical, rather than architectural, feel so Malcolm Lewis, creative director of MPI, brought in David Hersey of DHA as the lighting designer, Ted Tuersley for the stage and set design with SAV's Tony Frossard as sound consultant. The backdrop to Tuersley's 2m deep performance area, described as an 'electronic tapestry' is a 32 screen Electrosonic Procube 2 videowall sourced from four Sony CRV disc players. Initially, this is viewed through a 7 x 3.5m gauze screen covering the whole of the front of the stage which, in turn, serves as a front projection medium for a 35mm projector.



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Throughout the 11 minute show, Media Projects' imagery is a seamless combination of studio and location filming supplied footage, conventional and computer graphics and traditional animation. The combination of cinemascopes and high quality back-projected video gives the show a '3D' look. The 35mm projector is locked to the video using a synchronizer and electronic drive, and the film carries timecode on its optical sound track to ensure frame synchronization.

Later, in a change of spatial perception, the gauze screen flies away, using a rather elegant version of 'garage door' mechanics engineered by McAndroids. Unusually for this type of show a live mime actor is featured who, in his routine, conveys the message of Britain communicating internationally, which involves interaction with the projected images and a number of other effects including McAndroid's robots which, with monitors for heads, a Lightwave Emulator in the neck and pneumatic bodies, are city dealers in one scene and android sisters in another.

Many other effects are dependent on the elaborate lighting system conceived by David Hersey. Because of the tiny performance area, the lighting rig had to be compact and selective with every inch of space utilized, including from below the wire-mesh floor. Cross light comes from four Leko profiles per side (with scrollers), backlight from sections of moving M16 battens and uplight from banks of 500W floods, whilst the stage rim detail is picked out in fluorescent. The gauze is uplit with recessed Par 36s and washed with M16 batten units on motorized yokes. Crammed in around these items are numerous 'obedient' luminaires such as Clay Paky Mini and Golden Scans as well as Dataflash dimmable strobes, fibre optics and a series of animated gobo and effects units.

The C-Through control system links the various dedicated controllers (Masterpiece, Emulator, Dataflash) and also controls the house lighting via Electrosonic's Sceneplanner. A strong and specially composed soundtrack produced by Tony Frossard is delivered by the multi-channel sound system using Bose drivers augmented by their Acoustic Cannon sub-woofer.

The whole show is a challenge of wholly integrated design, ably met by Media Projects and the associated specialists, but sadly let down, in our view, by the poor finishing to the sales pitch demonstrated by the sponsors' feeble efforts in the apres-show exhibition area.

Spanish Pavilion

The host country has the largest pavilion of the participating nations, commanding an imposing position on the edge of a huge artificial lake, which is also the fulcrum for Spain's numerous regional buildings. The national itinerary takes visitors through eight different halls, which use a gamut of audio-visual techniques and special effects in an attempt to create an overall picture of Spain.

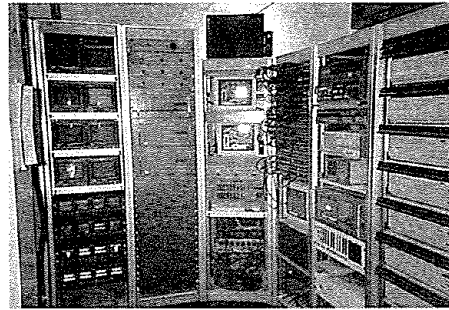
The main feature dome houses a 'Feel-o-rama' cinema with a spherical 700mm projection system and which features Iwerks' motion simulation seating synchronized with the filmed images produced by Summerhays Films. So the audience enjoys full participation. Sadly, not so the journals, who didn't have time to indulge in such frivolous activities. In the next five areas, one passes through a whole series of AV trickery, including two different multi-image shows, a sound and light display with animatronic monks, a video and a 6x3 cube Philips Vidiwall.

The room which interested us most, however was 'Spain Today' where British video technology company Xylo were pivotal in the show. The automated performance, an intense ten minute experience in the round with video screens which flip up to reveal animations, combines Catalan production company J.G. Burriel's design with Xylo's show control and expertise. Nineteen video projection screens and 34 TV monitors, coupled with robotic animations, moving screens, lasers, LED displays and surround sound are all orchestrated by Xylo's new Turbine control system to create an orchestrated electronic and

mechanical presentation.

The Turbine edits the 53 channels of video simultaneously and in real time. Xylo say that this is the only practical way to achieve the complex video effects used in the show, precisely synchronized with mechanical, lighting and sound effects. The Turbine system controls every aspect of the complex show via a multitude of different interfaces and protocols.

Three Turbine CPUs run on Xylo's own real-time network. (Although the area show does not call for it, the real time multi-layer structure of the Turbine allows full interactivity of any or all elements of a



Xylo control equipment in the Spanish Pavilion.

multi-media show). In the event, interactivity was used extensively during the brief but intense period of on-site show programming (a story universally echoed over the entire site). With only hours to go before Expo opened, Tim Davies and his Xylo crew were still 'playing-in' the lighting cues using the Turbine's real-time record function.

20 laser disc players, a Betacam SP and digital effects are all independently controlled via RS232, RS422 and time-code signals. Each video signal is routed through a 32 x 64 high speed video matrix and the video elements of the show are created in real-time to realise precise and technically complex multi-screen effects.

For example, the high speed train that rushes around 11 screens is edited from four laser disc masters. While the audience watch the sequence, the laser discs are being shuffled and routed at high speed to create another illusion.

Audio sources comprise six channels of digital sound from laser disc, an Akai DD1000 sampler and an Eventide Harmonizer. Audio signals are controlled through two 16 channel Xylo VCAs and a 32 x 32 Akai digital patch bay. These various devices are individually controlled by the Turbine via MIDI, RS232 and bursts of time-code, ensuring that the psycho-acoustic effect of the sound emanating from the right place is maintained.

Nine moving screens, eight mechanical animations and six mechanically actuated 3D 'psychograms' are also actuated by 24 volt relays from Turbine. Although the internal timing of the animations could also be controlled by the Turbine, in this case they have been pre-set by animator.

96 channels of lighting, controlled by two Strand MX 48 channel desks are cued by the Turbine via MIDI, though for a while they didn't seem to be speaking the same MIDI. Three separate Laser Media Purelights controlled by an Imagen unit are also cued.

Altogether, it involved an impressive amount of gear and technology in a really very small space. Shame about the massive columns which block the sightlines... and if you are not too exhausted after all of that, there is an interactive display area to follow.

French Pavilion

As would be expected of the nation which gave us La Defence, the Pyramid at the Louvre and Jean Michel-Jarre, the French pavilion is an architectural coup. Visitors enter under a seemingly unsupported 2,500m² 'ciel bleu' canopy over a glass-paved esplanade decorated with the logos of all the French sponsors (that's the way to do it) and underlit by fastidiously prepared fibre optics. To one side of the esplanade is a sleek two-storey mirror-glazed building housing, amongst other facilities, the most infinitely detailed architectural

models of les quartiers Parisienne through the centuries. Reconstructed from old maps the vast landscapes are presented in a most unusual way in several tiers through glass floors, so that whichever level one is on, you see the reflection of the later or earlier version of the city in reflection alongside.

The concourse is, in fact, the roof of the main pavilion which is underground and this is where the state-of-the-art technology is on show. You can sample this area on a subterranean traveler, passing through concealed stainless steel clad entrances, which are mechanically revealed during the day and retracted at night. This takes you across the top of a vast Image Well sunk several storeys into the floor below, with a 500m² screen located at a depth of 20m and using IMAX technology. The French were the laughing stock on the site when they were digging this hole, which of course nobody understood at the time, because, as with the EEC pavilion, the high water table ensured that it filled up with water. Now, however, they have the last laugh. For the French have really achieved something extraordinaire and typical of them to turn it all on its head and still come up trumps. In fact, if we hadn't selected New Zealand for their pragmatic approach on a more limited budget, La France would have got our Prix d'Or, as it is, it must be a close second.

The 15kW (normally 2kW) Imax projector, together with Telescans and other theatrical luminaires is, in fact, mounted on a platform slung below the traveler bridge, employing a unique vertical tilt projection axis. The walls of the well are covered in Mylar mirror foil that reflect the images into infinity and create a kaleidoscopic effect. Sound is four track digital. Of course, le pont is not the place to view the resultant show, but from the perimeter of the well, the effect was truly spectacular. Surrounding this box of delights are the displays of the French regions and other major sponsors and very well done too, making us quite ashamed of the feeble British attempts at the same thing. Best of all was a small interactive booth using hundreds of Sony Watchmans embedded in the walls, fed from numerous video sources and selectable by touch. The massed miniature video images were really intriguing. Ingenious.

And the concourse became a focus for activity at night. There always seemed to be music playing and plenty of eager Spanish youngsters ready to get down and boogie the night away, until dawn if they could. Unfortunately, there were also numerous killjoy Guardia Securitas who had quite a different idea. From the top of the glass building Laser Creations are doing their stuff nightly and on the occasion of the visit of President Mitterand, through their French Connection 'Link', they also supplied the AV equipment for the official opening. Six 20 watt Spectra Physics lasers and ten Clay Paky Golden Scans were utilized to produce effects during a specially choreographed show which involved acrobatic dancers abseiling down the side of the vitrined structure. Strong beams of Argon light were also projected until 4am over the Expo site. Sound and lighting, together with generators and crew, were also supplied by Laser Creations.

EC Pavilion

This pavilion consists of a walk-through exhibition of sets, models and artefacts tracing the evolution of modern Europe from Renaissance to present day. This dramatic approach was adopted by Malcolm Clark and his team at Imagination in the knowledge that it would be unusual in Seville in its dependence on traditional theatrical devices rather than the latest AV technology. Starting with the sights and sounds of yesteryear, in a sole concession to current communication techniques, it concludes with a theatre-style videowall presentation of the Community today. Proudly billed as a low tech theatrical presentation of images and icons, it had a feel of the heritage experience museum about it: like Yorvik, but without the cars. Since the exhibition area is underground, this added to that impression and it also ensured that the site was still flooded until four weeks before the opening. Imagination did well in a very short time frame,

though they probably wish they had opted for a biblical theme!

As the 3-dimensional displays are basically like theatrical sets, it seemed sensible for the lighting to follow suit, the general aim being to light each icon in such a way as to enhance its shape, and texture. It was also decided to keylight an element on each model as a major iconic feature.

Imagination's lighting specialists Hugh Vanstone and Steve Latham used low voltage MR16 lamps as the main light source for the displays, because heat was an anticipated problem, and low voltage fittings are far more efficient in terms of lumens per watt of heat produced. In general they chose Microlights' fittings which have integral transformers making the wiring easier and eliminating the worry about accommodating separate PSUs. The selected Microlight luminaires also came with colour runners and frames providing a theatrical look to the lighting of the 3-dimensional elements of the sets. The low ceiling height also had a part to play in the choice of the smaller-sized fittings.

As with many pavilions, additional difficulties resulted from the building not being exactly to the architect's plans, which caused services to be in unexpected places and which necessitated adaptation and modification of the design on several occasions. These problems were not entirely unforeseen by the technicians from Imagination and, as a result, the lanterns were all hung from Unistrut to allow flexibility of positioning, with each lantern having a 2m tail and its own socket. Despite the flood, when the Imagination crew arrived on site, all the electrical installation of sockets, Unistrut and sound positions had largely been completed to the drawings and specifications. They thought they were ahead and, indeed, they had done a remarkable job in the time, until they realised they would be without a permanent electrical feed until four days before the Expo opened. A generator was hastily arranged.

All the lighting information was entered into Lightwrite to facilitate easier communication between Imagination's London office and the on-site crews. Lighting control was provided by the ubiquitous System 12 Electrosonic dimmers, 10 in all, split over three control rooms with integral Sceneset control and an Electrosonic show computer.

Audio for the pavilion, designed by Imagination's John Del'Nero, is sourced from digital audio tracks on laser disc using Pioneer 4300D disc players synchronized so that the sound is a continuum from display to display, and spot sound effects are replayed from Eprom using Electrosonic ESTA digital stores. Amplification is by Amcron MA600 to Bose 101 loudspeakers in the exhibition areas and MA2401 and 1201 to Hackney Cab drivers and Apogee AETs in the finale auditorium. The latter system was supplied to Imagination by Orbital Acoustics with all sound processing equipment installed in glass-fronted, sealed and air-conditioned racks. Music in the pre-show has to accommodate flexible running times corresponding to the rate of flow of visitors, and this was achieved with a long continuous loop of music sourced from one laser videodisc player with a final sequence, accompanied by programmed lighting and special effects, that automatically crossfades at the appropriate time via the show control system. To overcome the usual problems of sound spread between adjacent areas the music was composed to conform to a basic melody and each of the three stereo tracks was replayed in frame sync to maintain the continuity of melody throughout the space.

The auditorium show is the finale of the exhibition, developed by Malcolm Clark and Peter Brooks of Imagination R & D, and engineered in-house it features an unusual videowall comprising 98 Barco 28" video monitors connected to six laser disc sources via a computer-controlled matrix switcher. This system allows the presentation of any one of six images, in any combination to the 98 monitors, changing in synchronization at up to 25 switching operations per second.

Instead of adapting the usual route of digitizing single images across many screens, this technology

facilitates extraordinary combinations and repetitions of patterns of images, using wipes and dissolves on the recorded software, with programmed switching cues performed by the hardware. Six digital audio tracks were utilized to provide the multi-channel music track.

Espectaculo Del Lago

As our readers will be aware, water spectacles are all the rage, an idea which has been heavily promoted by Disney at Epcot and more recently at their Euro park (see L+SI May 1992). Since water was an essential ingredient in creating a successful microclimate in the baking heat of Seville, and since the close proximity of the Guadalquivir River ensures a ready supply, it was always likely that the Expo organisers would go for something similar. The artificial lake, which was created also as a setting for the Spanish and their regional pavilions, is intended to be the focus for the revellers of Expo Noche, when the admission prices tumble to an almost acceptable level for the locals.

The fact that this has not been entirely successful is not the fault of the lake show, which certainly pulls the crowds when it kicks off at around 20.30 at night, but more to do with the poor standard of the food and beverage concessions lakeside. Your two intrepid scribes were subjected in this area to some of the world's worst fast food, including two of the most inedible pizzas (from a company called TelePizza) that we can ever remember.

The concept for the light show had been greatly diluted over the months of planning as the result of endless commercial machinations, and now owes very little, if anything, to Fisher Park's original and ambitious design. Nevertheless, it is still a substantial feat and, despite the disappointing lack of water sculptures, stands up well to the Euro Disney model witnessed just a few days previously. Controlled from a command bunker submerged in the middle of the lake (it's true, believe us), the laser, cinematography and all the control equipment, to say nothing of the technicians are literally up to their necks in H₂O. If they look out of the horizontal gun slits the water is, in fact, just a few inches below their sightline.

The show, which is supposed to depict the triumph of good over evil, but for us only conveyed the power of entertainment technology over adversity, involved the following elements: laser video projection by Laser Creations, Cinnemeccanica 70mm cine projection from ECA2 of Paris and adapted by them for the purpose, slide projection by Hardware for Xenon, 35m wide by 17m water screens by Aquatic Screens, Pyrotechnia Caballer supplied the fireworks, searchlights are Synchrolite Synchronics Xenons, and the show control was provided by Electrosonic. Siemens Espagna were responsible for the mains power installation, which must have been enormous using five megawatts of juice, and they also provided the perimeter lighting control, and Ramsa Panasonic the official Expo sound suppliers delivered the power audio.

So the bunker is housing a mass of equipment, three laser video projectors each with two 30W 400W Argon lasers and one dye laser, six movie projectors and some of the 12 5k slide projectors plus the Electrosonic control racks which house the following gear: a line of racks containing two 16 track 1" tape recorders, two video players and one video recorder (Betacam SP), timecode synchronizing equipment, timecode distribution amplifiers, programmable audio matrix switcher, programmable VCAs, patch panels, audio distribution amplifiers, data transmission equipment, interfaces for source control, and intercom master station.

A control console that extends over two sides of the room incorporates: master show computer, pyrotechnics control station, big image control computer, CCTV monitors, video source monitors, status and signalling lights, manual override controls, wind speed display, perimeter lighting control computer, searchlight control console, central feature lighting console, and intercom stations.

Out on the lake there are lit fountains surrounding the bunker, numerous pyro platforms,

six giant water screens and an inflatable 'man in the moon'. Around the edge of the lake there are nine Xenon 7k searchlights which will have gel changers added, and the rest of the Xenon projectors. All of this combines to create an impressive performance, largely focused on the giant water screens, with images so clear and powerful that we were able, for the first time, to take successful colour pictures of the phenomenon. At the same time the Hardware projectors are also used to dramatize the face of buildings surrounding the lake which, with lasers fired across from the top of the French pavilion, provided a tapestry backcloth to the main show.

The Electrosonic show control is a standard 386 PC running their BSC program, which issues cues and or time-code to all the other video and audio source equipment and sub-systems and generates MIDI commands to the Celco Navigators which control the searchlights. The many different data links are optically isolated and re-transmitted at each location, using RS422 and 485 transmission, but this still presented a problem of gargantuan proportions. Data not only has to reach the bunker, but also be transmitted outwards to the numerous searchlights and projectors. The distances underwater, and the fact that power is derived from diverse feeds, conspire to create serious ground to neutral potential differences, even ground to ground differences. All of this adds to the excitement underground and ensures that despite all the control technology there is still a considerable element of unpredictability!

Snapshots en route

The other pavilion, both with a revolve in the main theatre and a building which was pre-shrunk in the construction, is **Australia**. In their desperate attempts to prove that the Aussies are not like the soaps, though they claim to wash with it contrary to the macho myth, their display area is a long spiral climb through the building with a live jungle complete with trees and exotic birds running right through the stairwell. It's really effective and atmospheric. The main show in the turning theatre is in the round with six IMAX-type cine projectors providing a seamless 360 degree panorama, with slide projections added. This is quite a strenuous performance, with much of the film taken from helicopter, and your two correspondents discussed at considerable length, and without conclusion, as to how such a film was made.

Siemens also did a good job with a revolve, which turns three and a half times per show (and we are not just saying this because they gave us a very nice lunch. Gracias Luis.) Their multi-image show employs 63 projectors onto the curved wall surfaces and onto cut-out shapes which are set in three dimensional positions within the transmission area, doubtless all controlled from their 386 show control programme, with lighting by ADB. Some thought this the best AV presentation of the lot.

We had expected **Norway** to be impressive, sited as it is inside a tube. Yet, although they had overcome the technical problems of projecting throughout this awkward shape, their audience management and sound control was so poor that everyone was totally confused and baffled and simply walked straight through. If you paused for a look, the person behind was treading on the backs of your heels.

Denmark gave official blessing to the missionary position, or perhaps it was just a concession to the essential role played by the church in converting the New World, discovery being the theme of Expo. Their main AV presentation was only viewable by lying on your back!

Upstream Productions did a good job of conveying the message by 'silent screen' technique in the **United Nations** pavilion with a series of sync'ed shows with lighting chases between to keep the flow going.

These were only the ones which caught our eyes, but there are more. If you go, wear a hat and sturdy shoes. And don't forget your credit cards!

We will cover the other theatres, namely the splendid Teatro Centrale and the open-sided El Palenque, together with any others we may have forgotten in a succeeding issue of L+SI.



The Auditorium.

El Auditorio

This is the one where the dish ran away with the spoon, or at least the architect allowed his vanity to run away with him, then he ran away before people realised that he had created a disaster of a performance space. Designed to be a 5,000 seat open-air arena, it shows a complete lack of input from a theatre consultant, or any one with any knowledge of the technical aspects whatsoever. Even the geometry of the structure is wrong from a technical standpoint, indeed it seems that the only concession to the needs of the specialist services, is that a control cabin is provided front of house and there is a large backstage area, though whether the former was in the original plans isn't even clear. But not a dimmer room in sight: quite a problem with the site being designated as a major venue for such names as Jose Carreras and Placido Domingo, to say nothing of being the major concert venue of the British National Day.

When Adam Kushner, Auditorio's technical coordinator and his team finally assembled, rather too late in the day, they realised immediately that they had a major problem to overcome. They threw the problem at Siemens Espagna, where Luis Ruiz had gathered a crew of experienced techs, including our friend Graeme Pusey, who between them cut rather an unconventional look about the Siemens office. Suits and ties are, of course, anathema to these guys. Never mind, this kind of

problem was meat and drink to them and they set about it with true rock 'n' roll dedication.

What they did was to cover the performance stage (30 x 20m max) with a grid and catwalks suspended well below the structural spans, from which they have slung a series of independent 4.5m long open-ended box trusses, made by Total Fabrications, in double rows and all of which can be reached by chain hoist dollies which can be moved laterally across the grid. The chain hoists are on extension arms so that the top truss in each case can be dropped out without moving the one below; a nice modular system for easy prepping. All 600 luminaires were supplied by Siemens' associate company, ADB of Belgium, as were the 800 Eurodim dimmers. These are housed in one of three portakabin dimmer rooms, two of which had to be craned to the very top of the structure and the third, described as mobile, is sited backstage. All of this involved nearly 15km of multicore cable.

Lighting control is by either ADB S28/11 999 channel desk or an Avolites QM Diamond wired, using the 'back-up-DMX line on two parallel DMX data links, so that the two boards operate on a highest takes precedence basis. It was felt that a concert touring board would be a necessary requirement of visiting crews.

Sound is all Ramsa Panasonic, basically consisting of six clusters, each of four Ramsa triple driver full-range cabinets and one further with two of these enclosures. Two more and 25 wedges are



View across Ramsa desk to main stage.



From left to right a Siemens foursome - Jorge Sanmartin, Graeme Pusey, Germinal Ruiz and Luis Ruiz, with ADB's sales manager Richard van der Stichelen.



Birds eye view of the Auditorium from the overhead catwalks.



Preparations underway for British Gala Day.

used for monitoring. Ramsa's own processing equipment is used, with some Yamaha effects units and BSS noise-gates, and control is from their WR-S852 36/8/8/2 mixing desk and a WR-S840 for the monitors. The system involves 10 DI boxes and 72 mic lines and various Technics and Revox sound sources. A Clearcom MS 812-12 command console runs the communications system.

For an impression of how well the lighting system has overcome the inherent problems of the original design, and how the system performs in practice, we asked lighting designer and resident Tom Donellan to shadow Durham Marengi's efforts for the Andrew Lloyd Webber concert on the evening of British Day. His report follows.

Lighting Equipment included:

- 72 x fresnels 2,000W
- 108 x Parcans 2,000W
- 24 Parcans 1,200W
- 128 x cyc lights 1,200W
- 24 x fresnels 5,000W
- 64 x ellipsoidals 2,000W (10-25 degrees)
- 32 with gobo, 16 iris
- 127 x ellipsoidals 2,000W (16-32 degrees)
- 66 with gobo, 32 iris
- 24 x Svoboda 2,250W (9 lamps)
- 400 x Par 64

The Turbine from Xylo

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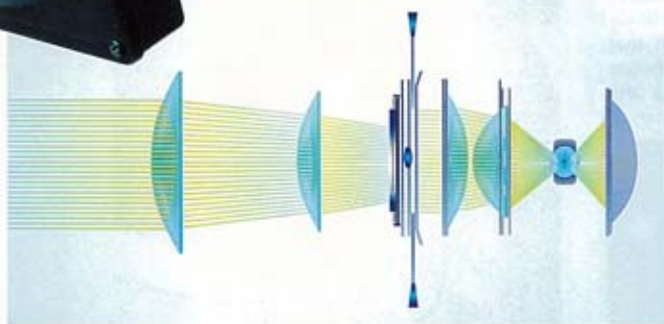
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30m x Aircraft Landing Lights section of 8/Par 64
for Light Curtain
4 x Niethammer 2500 HMI followspots
4 x JEM 6500 smoke machines
Eurodim Digital Dimmers

Royal Gala British National Day

L+S asked Tom Donnellan, resident lighting designer in Spain to follow Durham Marengi's attempt to tame the Auditorio for the Andrew Lloyd Webber finale to our national day. Here is his report:

It looked as though Carlos and Diana had brought the weather with them during the morning of May 21st - grey, windy and threatening rain - but as the day grew longer the sun was revealed and everything, at least outside the auditorium, was set up for the gala.

Four hours prior to 'curtain up' Unusual Rigging were still flying around at 20 metres between the speaker clusters, Autograph were swapping around dead Andalucian wedges whilst Durham Marengi and Vari*Lite wizard Richard Knight were trying to squeeze a show onto paper using what remained of the mega rig.

The problem was discovered at 03.00 hours on the morning of the gig as the focusing session was terminating. The promised set up comprising an Avolites QM Diamond desk with ADB racks was missing the vital link - the electronic patch. The outcome was a limit of 512 channels at the desk resulting in a loss of approximately 50% of the rig. Clearly the losses had to be suffered in the more creative areas, the flourishes and rich details that are the hallmark of design. We lost the Svoboda curtain, the complete and extensive cyc light battery, the illumination of the entire white flying grid structure that is the dominant - and omnipresent - architectural element of the building and many more things that I never got to discover.

What was doubly upsetting about the situation is the fact that even though there had been a series of on-site liaison meetings to facilitate a smooth and efficient fit up, this 'detail' was not discovered. Unfortunately, it would appear that the advances - and there are very many - of Spain 92 are still not sufficient to correct or even better avoid unforeseen situations such as this. The solutions are various: station a small bi-lingual experienced production crew on-site for the weeks leading up to the gig, or at the most extreme truck out your own venue.

The show was wonderful. A capacity audience, a capacity stage complemented with a finely controlled sound design by Martin Levan that excellently achieved the difficult balance between the Royal Liverpool Philharmonic Orchestra and



Gala Performance at the Auditorium.

choir and the rock organs, guitars and drums so loved by Andrew Lloyd Webber.

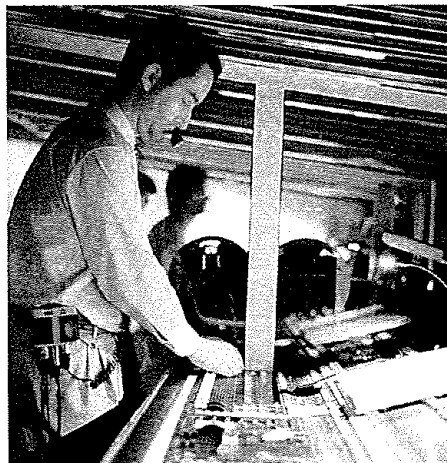
Hats off to Durham for a grand display with some interesting innovations under the most arduous circumstances. The many fine washes that covered the stage worked well, even for the more classical pieces - it was pleasing to watch for its lack of excess. The most interesting effect for me was the way that the QM allowed Durham - as usual he also operated - to scroll the wash from side to side or from the centre out to the sides backfilling with the next wash as he went. He did explain to me how it all worked after the show, but the champagne and views of the Expo and the company frosted my memory somewhat! The key to the images was achieved through the visually simple grey gauze 'helmet' created by set designer Will Bowen. It was a giant structure that enveloped virtually the entire stage giving an optimum surface for the gobos and

chases of both Durham's Sky Trackers - located at floor level either side and in the centre of the stage below the orchestra and conventional rig - and Richard's ample array of VL4s, 2s and 2Bs. The combination of the variety of technology in the design assured us, even without a large part of the rig, a vivid new image for each song.

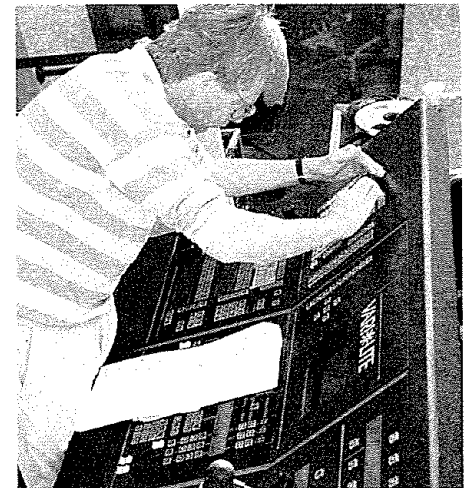
Even though we were all sandwiched into the tiny control box, the presence of Graeme Pusey of Siemens with his mobile phone was a godsend - the desk crashed just before the house opened. Graeme and mobile along with the ever-patient Durham got the desk back on line and completely reprogrammed in a record breaking 25 minutes, just as the Royals walked through the door . . .

Well done the whole team - it all looked and sounded fine - another typically efficient British gig.

Tom Donnellan



Durham Marengi, lighting designer, at the Avolites QM Diamond desk.



Vari-Lite operator, Richard Knight.

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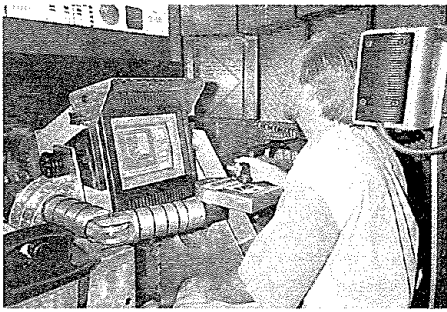
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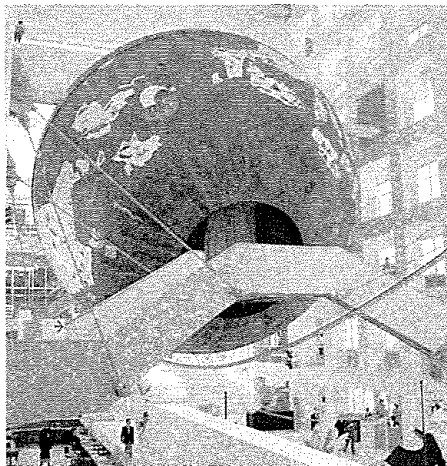
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Graeme Pusey gets down to it in the Italian Pavilion.

Italian Pavilion

A rotating globe designed to recreate the world before 1492 when the Earth, according to Galileo, was considered to be the centre of the universe (wasn't it also flat before that?) is supposed to be the main attraction of the pavilion. Unfortunately, it was not ready during our visit. However, apparently, inside the globe a continuous audio visual presentation for an average of 6,000 visitors per day will, eventually, take place. A Laser Creation's RGB Laser Video projection system, based on the now defunct Dwight Cavendish development and using a large frame Coherent 30 watt argon I-400 Argon and dye laser, is the main source of their visuals. This is supported by four 1.2k Panis. The video itself is directed by Antonioni. The special wide angle version of the Laser Video Projector is sited beneath the floor of the 10 metre spherical dome to project constantly focused video images onto the dome area.



The globe housing the AV show Italian-style.

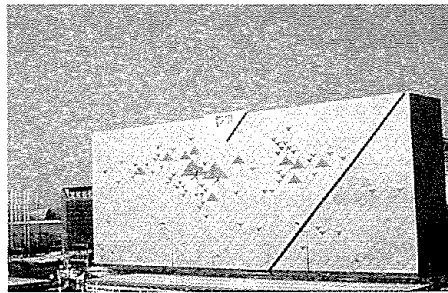
The sound system in the globe is delivered by 16 Celestion speakers, arranged in three tiers, and four sub-woofers with Yamaha audio processing controlling the system.

Moving through the confused and labyrinthine layers of the rest of the pavilion, one exhibit of particular interest has three 3 x 3 rear projected videowalls each connected to an interactive computer graphics 'flight simulator' system which Graeme Pusey enjoyed a great deal, as witness our photograph. Another area features an 80 screen back-projected videowall, in far too narrow and light a space to be viewable, using Picbloc 3 and Hantarex projection cubes. Overhead a Laser Creation's Purelight laser scribed images from its precious beam table.

Canadian Pavilion

The Canadian Pavilion is easily identified from a distance because of the large 'Canadian' signs on the main facades, which are covered with 50 tons of pre-weathered zinc sheets. Arranged in diamond-like squares they are meant to subtly change colour during the day, depending on the sunlight.

Visitors climb a glass-sided ramp to arrive at the pre-show collection area in which, with backs against bum rests (we weary travellers were struck by how many exhibitors found it necessary to provide seating in the welcome shows), they view



The Canadian Pavilion.

the first of two movies. 100 video monitors relay this short film, which actually suffers somewhat from an excess of ambient light, which is a pity.

The main show is IMAX but, at 48 frames per second, this is Imax with a difference. At twice the speed normally used for movies, movement is more natural and the screen brighter. It is riveting - but not for the travel sick! 700mm, 15-perforation IMAX-HD uses the largest film frame in motion picture history (ten times the size of conventional 35mm) and one of the most advanced projectors built, with a unique 'rolling loop' movement. Audio is a six-channel, high fidelity motion picture sound system supplied by Sonics with a supplementary 'sub-bass' and a digital sound track reproduced using SampleLock technology. Many of the 'flying' clips seemed familiar; had we seen them in their pavilion at Epcot?

Following the main show, there is an excellent Way Out exhibition area enlivened by a load of lighting effects, including side emitting fibre optics and dozens of Clay Paky Polycolors which seemed to be over spec'ed, together with a fun video which generated Pepper's Ghost.

Telecommunications Pavilion (POET)

This is the one with the massive Electrosonic 850 monitor videowall, 34 twenty one inch monitors wide and 25 high, the idea being that each monitor is a 'pixel' in a map of the world. And we've still got cricks in our necks to prove it!

In fact, the pavilion presents a sequence of shows on the theme of communications, from papyrus to satellite, in three theatres, all of which rely heavily on audio-visual technology and all of which have A-V engineering by Electrosonic. The main show is presented on the massive videowall, almost certainly the world's largest. It is built as a largely self-supporting steel frame, complete with four levels of rear access platforms.

It was neither practical nor economic to use conventional monitors, so custom-built RGBS analogue units are used and are fitted with large

locating pins that 'plug-in' to the main uprights. To service the monitors front access is required to slide them out and apparently this necessitated abseiling down from the top of the wall until a scissor lift was commandeered!

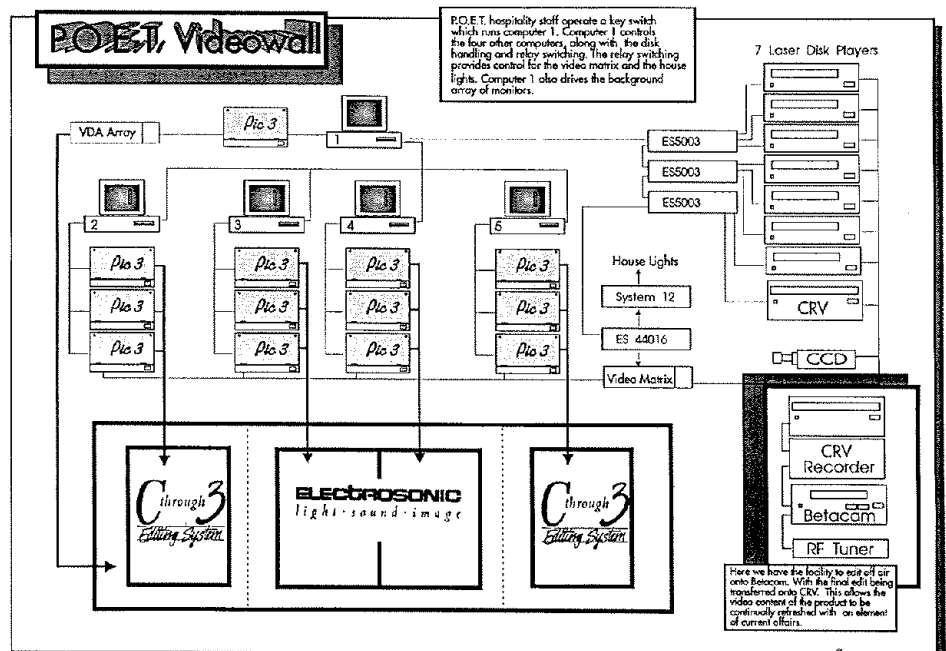
Electrosonic described the system as follows: "Conventional videowalls use image processing equipment to 'split' an incoming video image across a number of screens. While it would have been technically possible to split one single image across the entire wall, this wouldn't have worked as the audience sit so close to the screens that in order for them to take it all in, image magnification is limited, and the show depends on multiple imagery. For control purposes the videowall is divided into five main sections. Four of these are full multi-source videowalls complete with image control and splitting, the fifth is background. The show is run from six standard laserdisc players, together with a CRV disc player that allows the introduction into the show of up-to-the-minute images. Image processing is carried out by the Electrosonic Picbloc 3 system which offers, amongst other effects, a nice 'wipe' source change which gives the effect of a series of overlapping images sliding up and down the videowall.

"As far as possible the complete system was engineered from standard equipment. In particular the computer program for programming the videowall effects is the standard Electrosonic C-Through 3 program. It would have been technically possible to use a single computer to control the entire display, but this would have been a high risk approach because it would have required the development of special software.

"Five computers are used. Each computer is fitted with a number of Electrosonic communications cards that provide the required high speed communications to the image processing equipment, and provide synchronization to timecode. Four of the computers deal with the four main image areas, and the fifth computer is used for programming the background effects, video switching and source control. This fifth computer is also the 'master' computer. It is a feature of the C-Through computer program that it is easy to run several computers in synchronization using one as a master."

The second show combines live action with video, and the third has a 96 projector multi-image show with video. In the new technology area, through which one walks on leaving the AV presentations, Motorola have sponsored an effective Pepper's Ghost exhibit.

Due to the extensive reporting on Expo '92, the promised feature on the Wild West Show at Euro Disney will run next month.



Electrosonic schematic for the POET videowall.

LOOKING INTO THE LIMELIGHT

Graham Walne looks at followspots

The development of stage lighting has always been concerned with a desire for greater control, but, along with that has gone an increase in intensity as the theatre has acquired the latest light source, usually produced for some other industrial purpose. No other century has seen the increase in intensity of light as great as the 1800s which opened with candlelight, increased through gaslight and increased again with electricity. The introduction of the 1000 watt lamp, and the ability to control the light (in the sense that we would understand) led, in the early part of this century, to a re-think of set design as the brighter lights ruined the illusion of the flat, painted drops.

The new school of set design relied upon the new spotlights' ability to create real, not painted, shadows and significantly to concentrate light at the focal point of the stage picture. In fact for some years this technique had been developing; the first recorded use of followspots is at Covent Garden in 1837 (at a rental of £1-10s per spot per night - a considerable sum in those days). The light emitted from this device was produced by burning a small piece of quicklime, a technique which had been developed for surveying. The light output was 37 times greater than that from the Argand Lamp, the then brightest light source, and, at a test at Purfleet in 1830, a shadow produced from the device could be seen on a wall over 10 miles away. Theatres adopted the lime as the main source of illumination of the principals (hence the expression being 'in the limelight'), although it was also used for creating powerful shafts of moonlight.

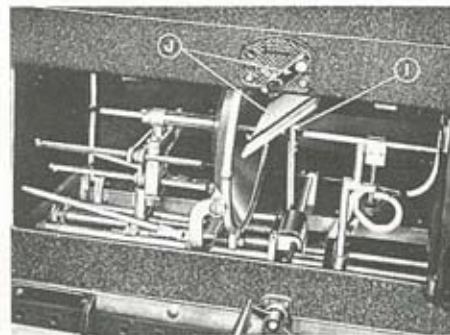
It should be noted that the limes (as the whole device was known) were not positioned in the auditorium, but backstage where as many as 12 could be employed on a single production, usually positioned in the flies where their high side light gave crisp outlines and enhanced the costumes. A vital acting position was the downstage area, lit by limes balanced on small platforms built specially into the back of the proscenium arch. Today this lighting position is still known as the 'perch' and has remained an essential location, often supplemented by other spots in the upper side boxes. The lime ultimately acquired a lens, and in 1893 a patent was taken out on a semaphore colour change device, the forerunner of today's system.

An interesting facet of the 1800s is the way that different sources of illumination existed side by side, hence electricity was often used as a point of ignition for gas light and the carbon arc existed alongside the lime for the rest of the



Lime-light men operating in the fly gallery. An illustration from 'The Graphic' in January 1874, reproduced from 'Theatre Lighting in the Age of Gas' by Terence Rees.

century. The arc is a device which produces an intense spark as the current jumps across a gap between two carbon rods. The arc was the first followspot to be positioned in the auditorium (at the Paris Opera in 1846) where the noise of the spluttering carbons frequently interrupted the production. By 1910 the arc had almost totally replaced the lime and in London the arc meant a rented one, with operator, from Digby's (later acquired by Imperial Lighting) who



A 100 amp AC arc showing dower (J) to protect mirror lowered and positioner (I) to set arc gap (photo courtesy Strand Lighting).

subsequently were acquired by Strand Electric in 1949.

Strand were the suppliers of the Sunspot arc which existed until comparatively recently as did the Sunspots' main rival, the Stelmar. This arc relied on an excellent optical system patented in 1929 and the first Stelmars in use in the UK are thought to have been at Covent Garden in 1934. Arc operators have ever since been divided into Sunspot camps and Stelmar camps.

I am a Stelmar man from my days at the Palladium and I am fortunate to have worked on the famous show 'Sunday Night at the London Palladium' in the days of live television. The relevance here is the black-and-white electronics could not cope with the light of two Stelmars coming together and thus one had to fade off without this being visible to the viewers, hence operation in those days became an art. The Stelmar had many advantages not immediately apparent on today's equipment including both separate horizontal and vertical shutters. This meant that a pickup could be made with vertical shutters as an artiste emerged from behind the pros and it appeared as though the artiste was bringing the light on with him - much more subtle than snapping a large circle approximately in the corner. Another Stelmar asset was its balance; it would hold its position without being touched and indeed before the days of radio mics the Palladium Stelmars were weighted to stay at the centre rising microphone, haunt of a top-of-the-bill comic for an hour or more. This smooth balance meant that the Stelmar was guided and not held as it moved, another feature rare these days.

With the advent of colour television and a greater intensity again, the Stelmar ultimately gave way to other kinds of arc, those encased in tubes of gas. Today there is a wide range of these light sources from xenon, to MSR, CSI and CID, dramatically reducing the current consumption by comparison with the old carbon arcs, and delivering a good colour; more recent models have also eliminated flicker and some models also filter out UV. In theatre the use of spots has declined alongside the decline of variety and music hall, but there has been an increase in the use of followspots on concerts and rock shows. The pages of L+SI are full of examples, but a glance back a few years will reveal that where once dazzle and smoke obscured the concert performer, today the concert LDs use theatre techniques to reveal and focus the audiences' attention precisely where they desire. The followspot is the essential tool in this and the concert LDs have been able to add what the



Strand Lighting's Solo CSI followspot.

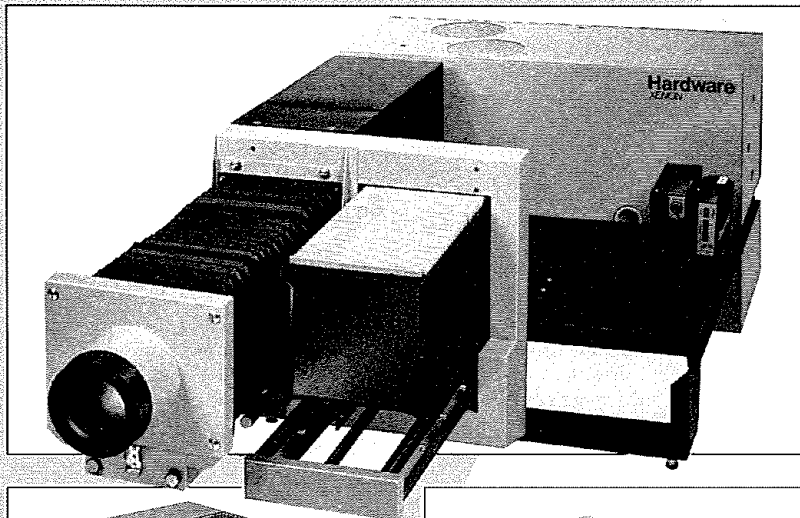


The Pani HV2002.

Hardware Xenon

High power projection

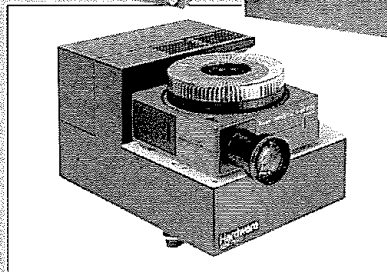
SLIDE PROJECTORS FROM 600 TO 5000 WATTS



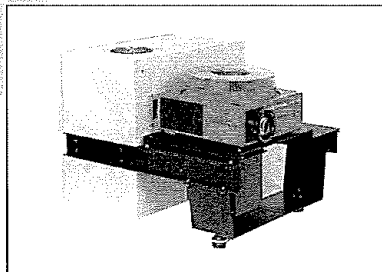
All Hardware Xenon projectors are portable and entirely automatic. The DHX models are also compatible with multi-image dissolve systems.

◀ **5000 Watts Xenon - 75000 lumens**
18 x 18,5 cm slides

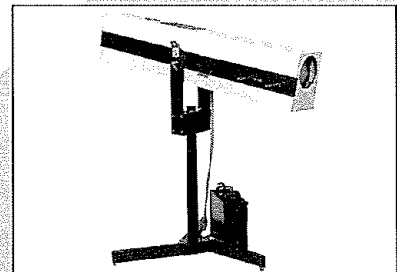
Image up to 40 metres wide.
Designed for giant image projection in large auditoriums, onto monuments, châteaux, inflatable structures or any background created for special events.



▲ **600 Watts Xenon - 4000 lumens**
24 x 36 mm slides
Image up to 7 metres wide with this compact projector. Black-out not required, allowing ambient light to be used for note-taking during seminars.



▲ **1000 Watts Xenon - 8000 lumens**
24 x 36 mm and 6 x 6 cm slides
Image up to 10 metres wide, with a popular 24 x 36 mm version for multi-image use in conferences, sales conventions, etc...



▲ **XENON FOLLOW SPOTLIGHTS**
• high quality definition, thanks to 5-element lenses;
• optimized cooling of coloured filters, iris and gobos.

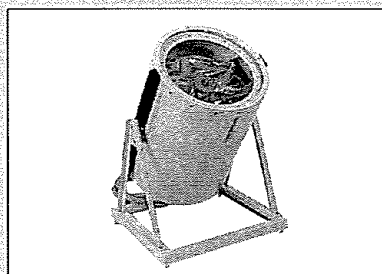
2000 Watts Xenon
Use range from 15 to 150 metres.

5000 Watts Xenon
Use range from 15 to 300 metres.

◀ **SKY LIGHTS**

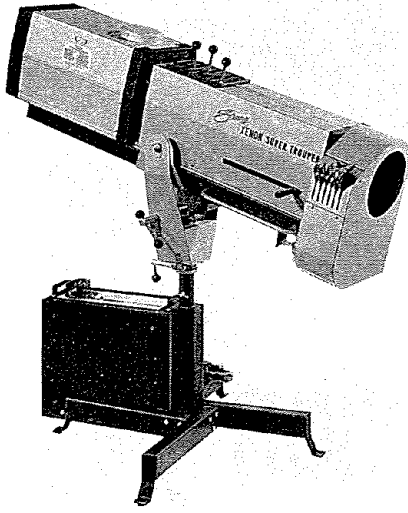
Hardware Xenon Sky Lights are either fitted to mobile mountings slaved to microprocessors, with obturator and colour change commands from 0 - 10 volts, or to a DMX 512, or fixed to adjustable supports.

2000 Watts Xenon
5000 Watts Xenon



**Hardware
Xenon**

**SALES AND
RENTALS**



Strong's Xenon 'Super Trouper' short throw.

theatre found difficult, a rear followspot. Additionally, the use of diffusers has led to the erosion of the traditional high box position for soft-edged beamlights, just providing a slight lift where it is needed.

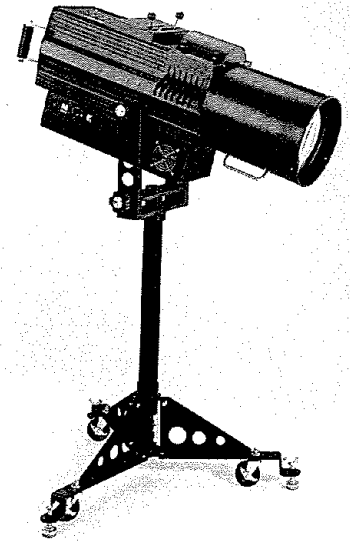
Today's LDs use followspots creatively, not as a blanket (and often flattening) the source of illumination of the star. Although the use of followspots does enable the LD to be more adventurous with the general lighting, the angle, balance and colour of spots are carefully selected and their use, especially in the concert world, forms a design on its own. Good operators are perhaps born with a natural sense of balance and aim, and an awareness that being 150' away from the stage is not to be remote from the production but rather closer to it than



The Talento S75 MSR from Teatro.

many others. Good spot operators have saved many a production, in my case the crew both at the Bolshoi and Covent Garden lifted my efforts onto another level, and no article about followspots would be complete without a mention of the Palladium's legendary Lynford, producing magic well into the 1970s from his 1930s Stelmar.

Before looking at the table I should first define that we concerned ourselves purely with purpose-built followspots, and not with profiles which could be used for this purpose. Our survey has produced more items than certainly I thought available and I am sure that there are more. We have tried to reach all the manufacturers but if there are any we've missed they can be included in a follow-up.



Lycian's 1209HP takes a single-ended 575 HMI lamp.

Perhaps some brief explanation and comment on the questions would be useful. The table is intended to be a guide rather than a Consumer's Association test, (perhaps we should have taken all the units to Purfleet although I doubt we could see 10 miles uninterrupted today!). In question 1 I asked what the light source was rather than the output of the device simply because not everyone measures such things the same way and at least the light source is some indication. The current consumption is given as for 240V but the US equipment is measured at 120V although almost all the manufacturers' literature states that conversion to 240V is possible; conversion from 240V to 120V is also possible in most cases. The 120V stated current consumption would of course change at 240V.



"Kupo 2kW Xenon"
as
supplied to
The London Coliseum
May 1992



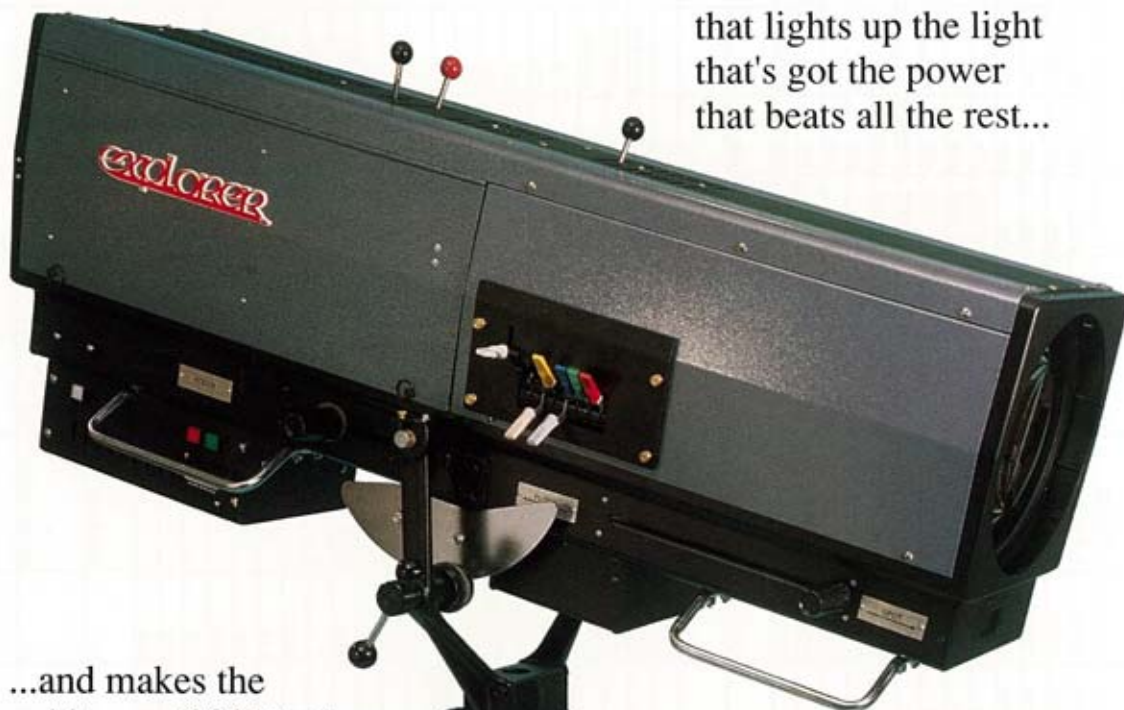
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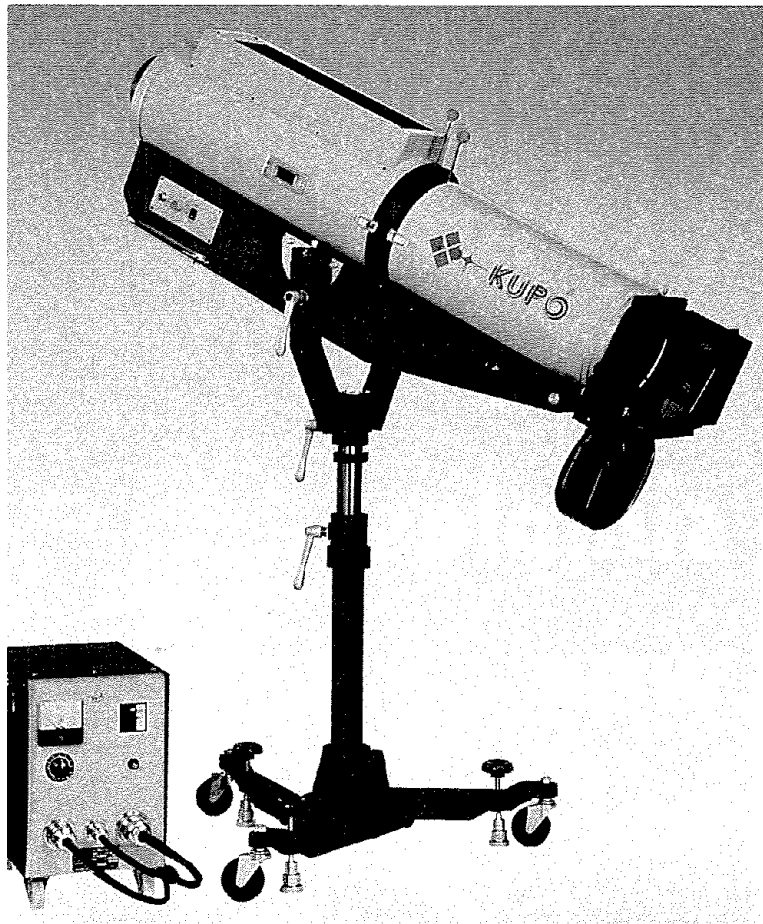
ALTMAN

T H E Q U A L I T Y O F L I G H T

Altman Stage Lighting Company, Inc., 57 Alexander Street, Yonkers, NY 10701, 914-476-7987 or 212-569-7777, FAX: 914-963-7304

manufacturer or agent	spot name	light source T= time counter	current	beam angle	variable zoom	colour mag + size	dimming	iris to B/out	inbuilt shutters	shutter type	inbuilt fan	hold balance	L&R op	special stand	truss mounted	list price	notes re price
question no.			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CCT	Minuette Pursuit	T27 650w	2.7 amps	6 - 10	yes	option/4	electronic	no	yes	4 shaping	no	possible	yes	no	yes		ex lamp price
CCT	discharge followspot	MSR 1k2w HMI 1k2w CSI/CID 1kw T	13.3 amps	11 - 20	yes	option/4	move reflector dowser and electronic	yes	yes	letterbox	yes	no	yes	no	no		ex lamp price
KUJPO	KSX -2000WL-3	2kw xenon	9 amps	6 - 16	yes	option/6	dowser and electronic	yes	yes	beam shaping	yes	yes	yes	yes	yes		£8550.00
TEATRO	Talento 1200TH	CP93	5.4 amps	8/ 12/ 15	yes	option/6	mechanical	option	option	4 framing	yes	yes	yes	no	yes		£770.00
TEATRO	2000 TH	CP72/79	9 amps	10 - 17	yes	option/4	shutter/blackout	option	option	4 framing	no	yes	yes	yes	yes		£915.00
TEATRO	575 MSR	575MSR + ballast	3.8 amps	8/ 12/ 15	yes	option/6	mechanical	option	option	4 framing	yes	yes	yes	yes	possible		£2140.00
TEATRO	1200 MSR	1k2 MSR	8.5 amps	6 / 8 / 12	yes	option/6	mechanical	option	option	4 framing	yes	yes	yes	yes	yes		£2340.00
TEATRO	2500 MSR	2k5 SHA (slim)	15.5 amps	7 - 13.5	yes	option/4	shutter/blackout	option	option	4 framing	yes	yes	yes	yes	no		£4285.00
STRAND	Cantata FS	1k2w T29	?	11 - 26	yes	option/4	?	yes	yes	4 beam shaping	no	yes	on right	yes	yes		£620.00
STRAND	Solo 2K	2kw CP79	?	9 - 15	yes	option/6	?	yes	yes	rotatable	no	yes	on right	yes	yes		£1369.00
STRAND	Solo CSI	2kw CSI/CID	?	9 - 15	yes	option/6	external shutter	yes	yes	slit shutters	no	yes	on right	yes	yes		£2389.00
PANI	HV2002	2kw halogen	9.1 amps	9/16/19/23/27	no	option/6	via dimmer	yes	yes	4 shutters	yes	yes	on right	standard	yes		ATS 20,872.00
PANI	HMV1202	1k2w HMI	7 amps	7/12/15/19/20	no	option/6	mechanically	no	yes	4 shutters	yes	yes	on right	standard	yes		ATS 63,948.00
PANI	HMV2500	2k5w HMI	15 amps	6 - 16	yes	option/6	mechanically	no	yes	rotatable mask	yes	yes	yes	yes	no		ATS 177,080
STRONG	Trouperette 111	1kw FEL	9a (120v)	7.2 - 21.5	yes	built in/6	dowser	no	yes	horizontal	yes	yes	yes	yes	yes		US\$1110.00
STRONG	"575"	575w HMI - T	7a (120v)	5.6 - 16	yes	built in/6	dowser	no	yes	horizontal	yes	yes	yes	yes	yes		US\$4975.00
STRONG	Xenon Trouper	700w xenon - T	2.4a (120v)	6.8 - 22.7	yes	built in/6	dowser	no	yes	horizontal	yes	yes	yes	yes	possible		US\$7400.00
STRONG	Roadie	400w HTI	7a (120v)	3.7 - 7.9 or 6.7 - 23	yes	built in/6	dowser	no	yes	horizontal	yes	yes	yes	yes	yes		US\$5250.00
STRONG	Gladiator 11	2k5w xenon - T	23a (120v)	3.7 - 7.9 or 7.2 - 28	yes	built in/6	dowser	no	yes	horizontal	yes	yes	yes	std	-		US\$12,500.00
STRONG	Gladiator 111	3kw xenon - T	25a (120v)	3.2 - 10.3	yes	built in/6	dowser	no	yes	horizontal	yes	yes	yes	std	-		US\$13,500.00
STRONG	Trouper	1k2w HMI - T	1.4a (120v)	4.6 - 13.7	yes	included/6	dowser	no	yes	horizontal	yes	yes	yes	std	possible		US\$7400.00
STRONG	Super Trouper	1k6w xenon - T	2.4a (120v)	7.15 - 23.17	yes	included/6	dowser	no	yes	horizontal	yes	yes	yes	std	possible		US\$10,230.00
STRONG	Super Trouper	2kw xenon - T	2.4a (120v)	3.7-7.9or7.2-23	yes	included/6	dowser	no	yes	horizontal	yes	yes	yes	std	possible		US\$10,230.00
LYCIAN	1207 Midget	2kw BWA/CVX	20a (120v)	8" to 8" at 40"	no	built in/6	dowser	no	yes	horizontal/gobo	yes	yes	yes	yes	yes		US\$1364.00
LYCIAN	1206 Midget	1kw FEL	10a (120v)	8" to 6.5" at 40"	no	built in/6	dowser/dimmer	no	yes	horizontal/gobo	yes	yes	yes	yes	yes		US\$665.00
LYCIAN	1236 Clubspot	FLE Quartz	4.5a (120v)	8" to 10" at 40"	yes	built in/6	dowser	no	yes	sep. horizontal	yes	yes	yes	std	yes		US\$5385.00
LYCIAN	1271 Starlite	1k2w HMI	20a (120v)	16.5" to 4.5" at 40"	yes	built in/6	mechanical	no	no	?	yes	yes	yes	yes	yes		US\$1765.00
LYCIAN	1267 long throw	400 HTI	10a (120v)	10" to 15" at 100"	yes	built in/6	mechanical	no	yes	horizontal	yes	yes	yes	std	yes		US\$10,230.00
LYCIAN	1266 std throw	400/24 HTI	9a (120v)	10" to 12" at 40"	yes	built in/6	mechanical	no	yes	horizontal	yes	yes	on right	std	yes		US\$5126.50
LYCIAN	1209 Midget H	575w MSR	9a (120v)	6.5" to 7.5" at 40"	no	built in/7	dowser	no	yes	horizontal/gobo	yes	yes	on right	std	yes		US\$4531.50
LYCIAN	1278 Superstar	2k5w /HMI/MSR	25a (120v)	1.25" to 2.5" at 100"	no	built in/6	mechanical	no	yes	horizontal	yes	yes	on right	yes	no		US\$8401.26
LYCIAN	1275 Superstar	1k2w Metal Halide	15a (120v)	6.6" to 16" at 100"	yes	built in/6	mechanical	no	yes	horizontal/gobo	yes	yes	yes	std	yes		US\$6500.00
LYCIAN	1272 Starlite 111	1k2w HTI/MSR	?	?	no	built in/6	mechanical	no	yes	horizontal/gobo	yes	yes	yes	std	yes		US\$4995.00
LAMPO	ISO1	T/11	5 amps	?	no	?	no	no	?	?	no	no	rear	yes	yes		£360.40
LAMPO	TE30	T/11	5 amps	9 - 17	yes	option/6	no	yes	yes	4 yes	no	no	yes	yes	no		£837.97
LAMPO	TE31	CP43/72	10 amps	9 - 17	yes	option/6	no	yes	yes	4 yes	no	no	yes	yes	no		£897.02
LAMPO	TE32	MSR400	7 amps	8 - 14	yes	option/6	no	yes	yes	4 yes	no	no	yes	yes	no		£1282.62
LAMPO	TE33	HMI575	7 amps	8 - 14	yes	option/6	no	yes	yes	4 yes	no	no	yes	yes	no		£1408.81
LAMPO	TE34	MSR700	11 amps	8 - 14	yes	option/6	no	yes	yes	4 yes	no	no	yes	yes	no		£1591.66
LAMPO	TE36	MSR1k2	13.8 amps	8 - 14	yes	option/6	no	yes	yes	4 yes	no	no	yes	yes	no		£1696.42
LAMPO	TE37	MSR2k5	15 amps	8 - 14	yes	option/6	no	yes	yes	4 yes	no	no	yes	yes	no		£4697.85
NIETHAMMER	HW11	1kw GX9.5	4.5 amps		11	yes	electronic	yes	no	n/a but gobos	no	no	no	no	yes		?
NIETHAMMER	HW209	2kw GY16	9 amps		9	no	electronic	yes	no	n/a but gobos	yes	no	no	no	yes		?
NIETHAMMER	HWU	2kw GY16	9 amps	208 = 8, 213 = 13, 218 = 18	no	yes/4	electronic	yes	yes	4 and gobos	yes	yes	no	?	?		?

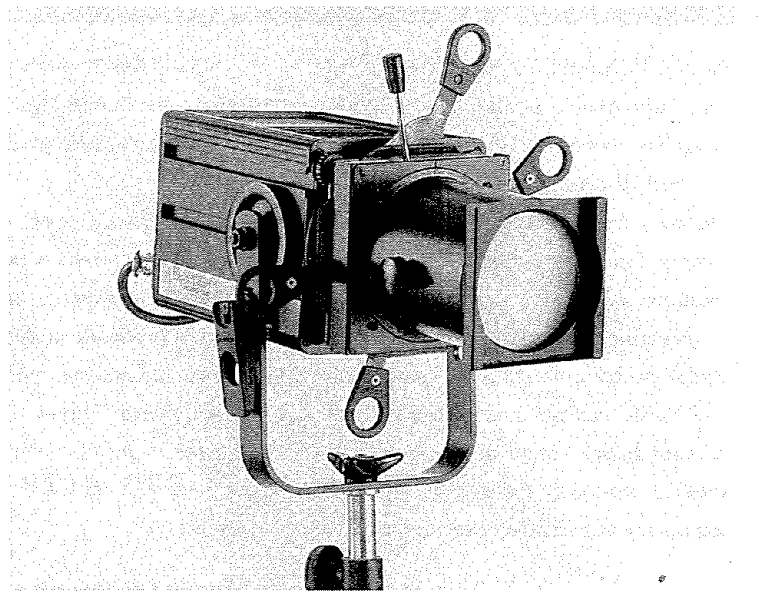
NIETHAMMER	HZU 208	2kw GY16	9 amps	8 - 17	yes	yes	electronic	yes	yes	4. and gobos	yes	no	?	?	?	
	MVU	1k2w HMI - T	?	108=8, 113=13, 118=18	no	yes	B/out	yes	yes	4. and gobos	yes	no	?	?	?	
NIETHAMMER	108/113/118	1k2w HMI - T	?	6 - 17	yes	yes/4	mechanical	yes	yes	4. and gobos	yes	no	?	?	?	
NIETHAMMER	MZU 106	1k2w HMI - T	?	8 - 14	yes	yes/6	electronic	?	yes	4/shaping	no	?	?	?	?	
SPOTLIGHT	Vedette 2500H	2/2k2w	?	9/39 in steps	no	?	elec/B/out	?	yes	4/shaping	?	?	?	?	?	
SPOTLIGHT	Piccolo	1/1k2w TH/HMI	?	7 - 13	yes	accessory	mechanical	no	yes	4/shaping	yes	?	?	?	£1023.00	
COEMAR	Testa 1k/1k2 al	T30/T31	4-2 amps	7 - 13	yes	accessory	mechanical	no	yes	4/shaping	yes	?	?	?	£1509.00	
COEMAR	Testa 2k al	CP43/72	8.4 amps	5.5 - 12	yes	accessory	mechanical	no	yes	4/shaping	yes	?	?	?	£1780.00	
COEMAR	Testa MSR 575	MSR 575W	4-6 amps	7 - 13	yes	accessory	inbuilt	yes	yes	4/shaping	yes	?	?	?	£2243.00	
COEMAR	Testa MSR 1k2	MSR 1K2w	8.5 amps	6 - 13.5	yes	accessory	mechanical	no	yes	4/shaping	yes	?	?	?	£4210.00	
COEMAR	Testa 2k5 sha	sha 2k5w	15.2 amps	7 - 13.5	yes	accessory	mechanical	no	yes	4/shaping	yes	?	?	?	£673.00	
COEMAR	Insee 1k al	TT19	4.2 amps	8 - 22	yes	accessory	mechanical	no	no	n/a	no	?	?	?	£1134.00	
COEMAR	Insee 1k2 MSR	MST 1k2w	14 amps	8 - 22	yes	accessory	mechanical	no	no	n/a	yes	?	?	?	?	
COEMAR	UltraArc 1/long	HTI 400w - T	8 amp(120)	1' to 8' at 50'	yes	in built/6	dowser	yes	no	n/a	yes	no	?	?	?	
PHOEBUS	UltraArc 1/short	HTI 400w - T	8 amp(120)	15" to 7.5' at 20'	yes	in built/6	dowser	yes	no	n/a	yes	no	?	?	?	
PHOEBUS	Ultra Quartz	360w ENK/FLE	4 amp(120)	5.3'to 13.1' at 40'	yes	in built/6	?	yes	no	n/a	yes	no	?	?	?	
PHOEBUS	MightyArc 1/1/s	HTI 400w	8 amp(120)	2.2'to 5.4' at 35'	yes	in built/6	dowser	yes	no	n/a	yes	no	?	?	?	
PHOEBUS	Titan Long	1k2w HMI	15amp(120)	30"to 8' at 50'	yes	?	?	?	?	?	?	?	?	?	?	US\$995.00
PHOEBUS	Titan short	1k2w HMI	15amp(120)	2'8"to 6' at 20'	yes	?	?	?	?	?	?	?	?	?	?	US\$3900.00
ALTMAN	Comet	300w MR16	5 amp(120)	7.2 - 12.2	yes	in built/6	dowser	no	yes	horizontal	yes	no	?	?	?	US\$3950.00
ALTMAN	Satellite 1	575 HTI	8 amp(120)	7.3 - 20	yes	in built/6	dowser	no	yes	horizontal	yes	no	?	?	?	US\$4950.00
ALTMAN	Voyager short	400w HTI	10amp(120)	1.75 - 17.5	yes	in built/6	dowser	no	yes	horizontal	yes	no	?	?	?	US\$6950.00
ALTMAN	Voyager	400w HTI	10amp(120)	? - 9.5	yes	in built/6	dowser	no	yes	horizontal	yes	no	?	?	?	US\$6950.00
ALTMAN	Explorer short	1k2w HTI	13.5 a(120)	1.75 - 17.5	yes	in built/6	dowser	no	yes	horizontal	yes	no	?	?	?	US\$6950.00
ALTMAN	Explorer long	1k2w HTI	13.5a(120)	5.7 - 7	yes	in built/6	mechanical	no	yes	horizontal	yes	no	?	?	?	US\$6950.00
ALTMAN	?	400HTI/1k2HMI	18/14(120)	4:1 range	yes	in built	dowser	no	yes	horizontal	yes	?	?	?	?	US\$5976/72282.00



Kupo's 2000W Xenon followspot.



Checking out the Phoebus Titan at LDI in Reno.



Piccolo, the latest from Spotlight of Milan.

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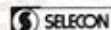
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Almost all the manufacturers' literature concentrates on safety and most of the units have safety cut out switches and others which kill the power automatically if the unit's housing is opened. Most units also have a time elapsed meter to monitor the lamp life, especially useful if the spot is being used for that vital gala when you do not want an old dull lamp which might be about to fail. The manufacturers should be consulted about restrike times; many do not offer 'hot-strike' and require a cooling off period if the lamp is switched off for some reason.

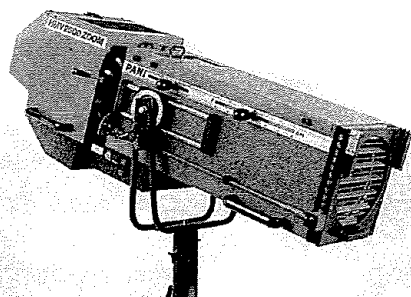
I did ask about fans but not about noise level. In my experience few manufacturers have this data (only Pani quote their quietest fan noise - 40dBA) but this area is worth checking, I was unable to use many spots in the auditorium at Boston Opera because the fan noise was clearly audible in the quieter passages, consequently the spots were restricted to the projection booth, a very flat angle.

The beam angle of the spot is taken at its hardest edge and is variable by the adjustment of inbuilt lenses, ie on the zoom principle, and this is given in the table as 7 - 15, although some Pani equipment and Teatro require interchangeable lenses in which case the figure would be given 7/15. Lycian also offers a spread lens which increases the horizontal angle. It is worth checking to see if the two lenses of the zoom system are synchronised like those on the Phoebus Ultra Arc range, otherwise a variation in beam angle might not be smoothly obtained during operation. The stated beam angle is taken as being that obtained with the iris fully open and it is worth noting that the US manufacturers also state the beam angle with the iris at its smallest aperture.

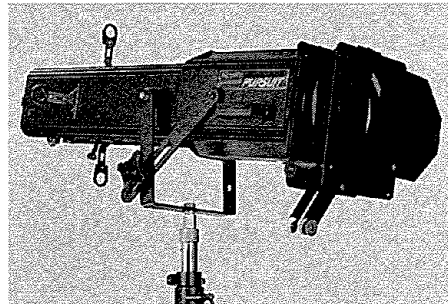
Colour changers are an option on all spots except for most of the US designs where the device is inbuilt. Some colour changers offer six semaphores which means that useful diffusers can be added to colours in different combinations. Dimming in almost all cases is via some mechanical device rather than by varying the line voltage and undoubtedly some devices are more sophisticated than others, inbuilt dowsers and louvres being preferred to a blackout sheet in the colour changer which in some cases on being pulled in causes the reflected light to illuminate the locality and distract the audience.

I suspect that there was some confusion in the answers over the question of how the iris closes and thus readers should take care here. I asked if the iris closed completely to blackout, meaning that this should be achieved in a single movement (albeit with a linked blackout disc) without also having to operate a separate device such as the dimmer. A similar confusion arises over the shutter area, partially because of the different nomenclature of different countries. The Stelmar had a fast action blackout shutter which could be used slowly as a horizontal device quite separate from the aforementioned vertical shutter. Most spots seem to have at least a horizontal shutter and some also beam shaping shutters and gobo slots.

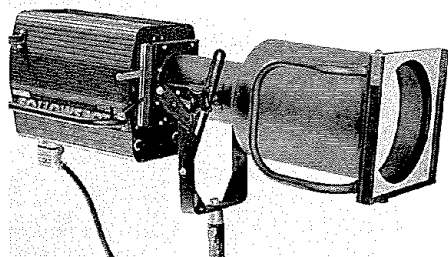
To my question "will the spot stay where aimed if unlocked and unheld?" nearly all manufacturers said 'yes' although only Strong acknowledged that this would apply within set angles of tilt, and Lampo straightforwardly said no for all of their range. Some manufacturers offer adjustable balance points and this is worth checking if your position offers particularly acute angles. In terms of position of the unit I asked if a special stand was provided, meaning that an ordinary stand might be flimsy or shaky and also if the unit could be truss mounted. Some replied that it was unusual but that it was possible. I did ask about the provision of handles and I should have asked if the unit could be operated from left or right. I have added this information into



Pani HMV 2500 Zoom.



CCT's Minuette 'Pursuit'.

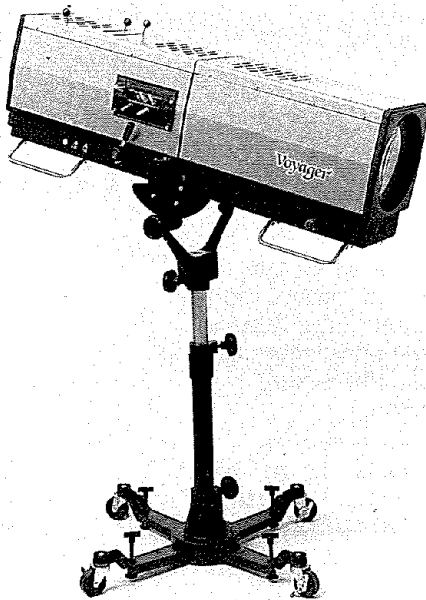


The CCT Discharge followspot.

the table where it is stated in the manufacturers' literature but where this is omitted the reader should not assume the unit is for single right side operation only. It is worth noting that not all colour changers can reverse like those from Teatro even if the spot's controls can! Some manufacturers put the spot controls on top, others state that this makes the unit difficult to operate.

I am grateful to all the manufacturers especially for stating their list prices, which should include stand and colour magazine in all cases unless stated otherwise.

I hope that all this information is useful and that it helps the reader to further the marriage between intensity and control.



Altman's Voyager followspot.

FOLLOWSPOT CONTACT DIRECTORY

ALTMAN (USA)

Tel: 914-476 7987 Fax: 914-963 7304.

UK/Europe: A C Lighting

Tel: 0494 446000 Fax: 0494 461024

CCT (UK)

Tel: 081-770 3636 Fax: 081-643 9848

COEMAR (ITALY)

Tel: 376-779336

Fax: 376-780657

UK: Coe-Tech Limited

Tel: 0604 785878 Fax: 0604 786606

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Tel: 2-8360870

Fax: 2-8341006

UK/Europe: Action Lighting

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PANI (AUSTRIA)

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UK/Europe: A C Lighting

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TEATRO (ITALY)

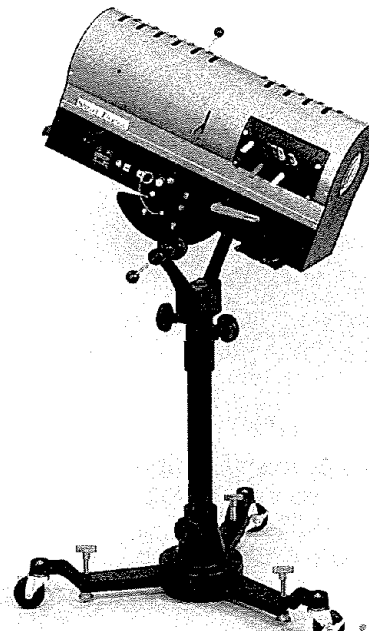
Tel: 376 780702

Fax: 376 780888

UK: Action Lighting

Tel: 081-965 6800 Fax: 081-965 0950

Note: A C Lighting offer the 'Vision' 1200FS followspot world-wide in their own right. It carries an MSR 1200W lamp, has variable beam spread and zoom 10-19 degrees. For full details contact A C Lighting (details as above).



The short throw Voyager.

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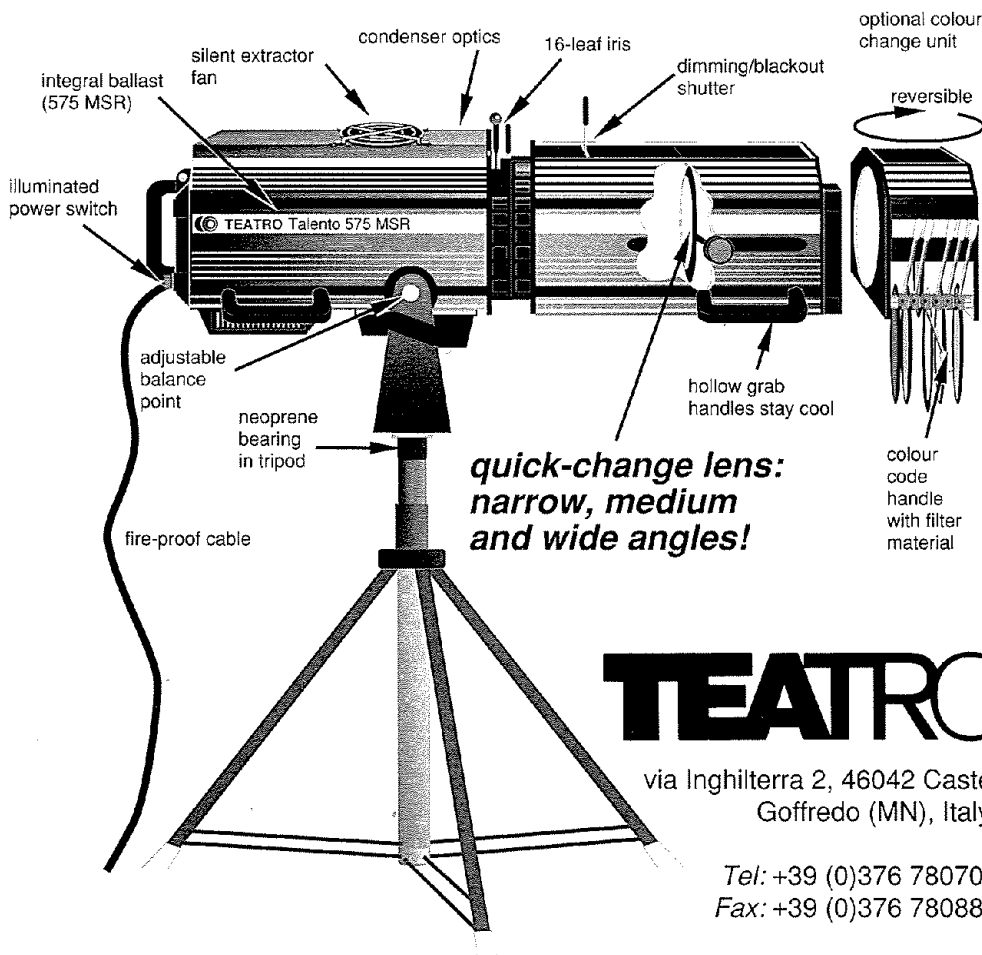
*TONY GOTTIELI,
Lighting & Sound
INTERNATIONAL - May '90*

"Mike Lowe applied his own sure touch to Teatro's new range of followspots and came up with what may well amount to a mini revolution in the science. He recognised that zoom is probably a nonsense when it comes to limes. . ."

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"The best product award went to the 'Talento' followspot from Teatro. As an ex Palladium Stelmar operator I approach all modern followspots with in-built scepticism, but the Talento does have a good mechanical dimmer and should prove very popular with small to medium venues."

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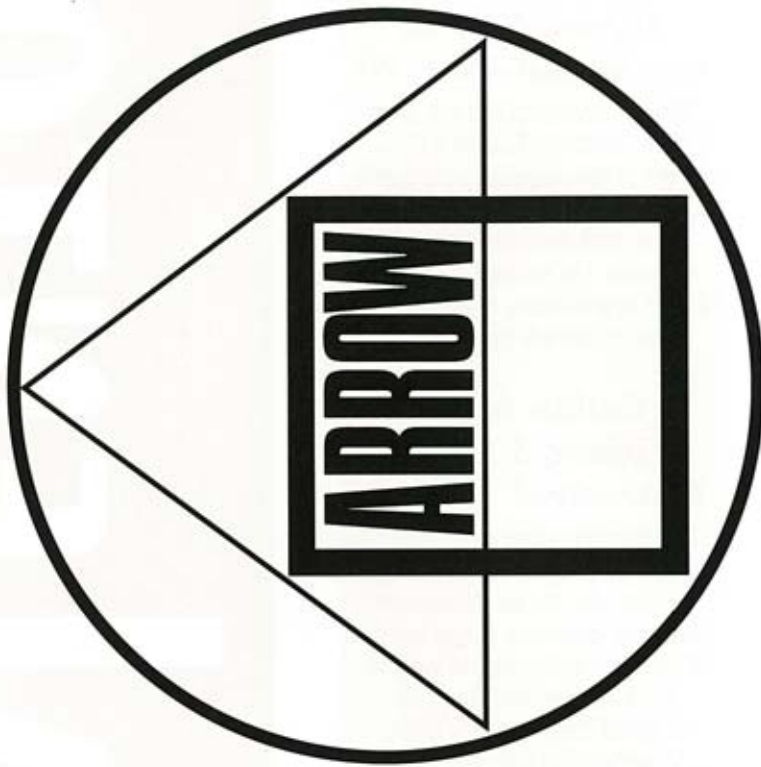
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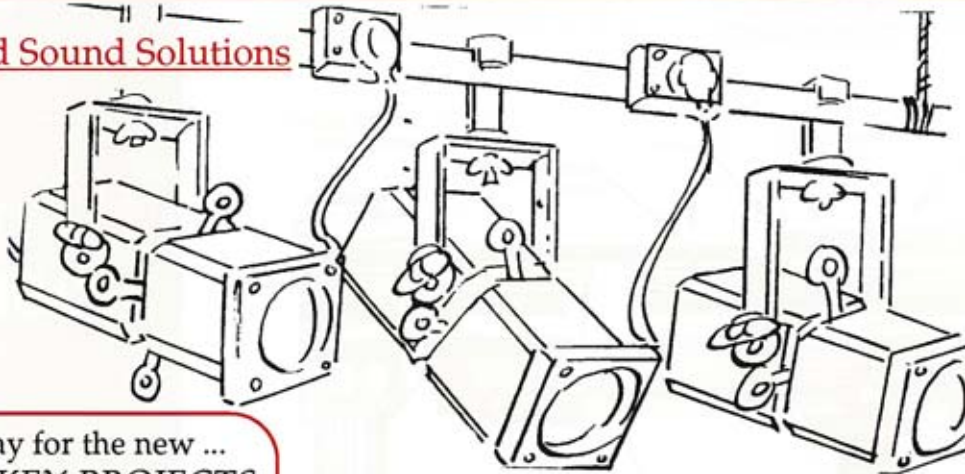


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DANCING DOWN UNDER

Catriona Forcer takes part in Sydney's Night Scene

I arrived in Sydney with article ideas swimming erratically around my head and one such idea was a disco review. Now somehow I could not imagine your typical Aussie tarding himself up on a Saturday night to strut his funky stuff at the local disco. The image just was not there but, like many things in Australia, I was pleasantly surprised. What I had forgotten was that Sydney has a gay population on the same ratio as San Francisco and consequently a thriving gay disco scene. Also the European immigrants, especially the Italians and Greeks, have retained a lot of their culture which includes dressing up on a Saturday night to go out. The Polish Club in Sydney - Vibrations - was designed by Total Concept Productions 11 years ago and still attracts in excess of 1000 people every Friday and Saturday night. In fact, over the years, the ethnic community clubs have been quite sizeable and have had fairly sophisticated discos.

One of the major differences between the nightclub market in the UK and Sydney is that Australia does not have publicly owned leisure companies heavily investing in the market. There are some privately owned nightclubs but most are either related to hotels or the registered club market. Apart from the ethnic clubs, there are the football clubs, working mens clubs and the Returned Services League clubs. The RSL clubs originally catered for ex-servicemen but with their members growing older every year they have worked hard to gain community usage, usually by adding a disco or nightclub. The registered clubs have an advantage over the pubs/hotels because as well as having extended licenses they do not have the commercial restraint of having to return a profit. Any money



Disco action at Sydney's Parramatta League Club.

earned is ploughed back into the club and consequently they can offer attractions like 'dollar a drink' nights. Also the clubs tend to be more isolated from residential populations than the pubs so there are not so many problems with noise late at night and there is more space. These clubs tend to be the major form of entertainment for the 18-30 age group and the further west you go from Sydney, the more likely they are to be the only source of entertainment. The outer suburbs of Sydney have grown extremely rapidly

over the past 30 years but the infra-structure has not grown with them. The result is that there are not enough entertainment facilities, so where nightclubs have sprung up they have been extremely successful.

"In the middle of this recession we are still finding clients eager enough to start a new club venture," said Andrew Brajbisz, production consultant with Total Concept Productions. "Most of the work is found not in the major cities but on the outskirts and in country towns seeking



Sydney Mardi Gras Party 1992.

photo: Peter Elfes.

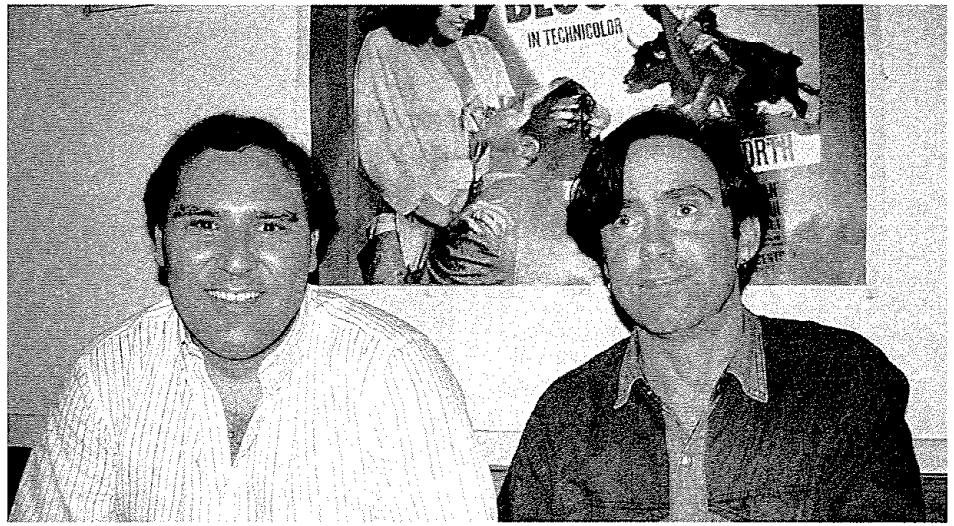
an alternative to the registered service league and sporting clubs."

With this background knowledge of Australian clubs, I ventured forth into the Sydney nightclub scene chaperoned by Jonathan Ciddor and Peter McKenzie of Lightmoves Technologies. As well as being at the forefront of nightclub design, Lightmoves Technologies are also suppliers of Teatro, Theatrelight, Celco, Image Pro, Martin, Dynalite, Jem, Clay Paky, Le Maitre, Rosco and others. They also run a successful hire department. Three clubs were on the itinerary and they could not have picked a more varied clientele.

The Marouba Seals was a rowdy surfers club where drinks were only one dollar and when a competition to stretch a condom over your head began, I was hastily escorted to the next club. This was the Midnight Shift, a gay club situated on Sydney's notorious Oxford Street and it was a prime example of one of the most common problems in Australian nightclubs - the low ceiling.

As most discos are not purpose built, the lighting designers have to install their systems in rooms with incredibly low ceilings compared to clubs in the UK. The Midnight Shift has a vast amount of disco lighting crammed onto the ceiling and, although the effect can be quite stunning, you do tend to feel the need to duck your head! The last club we visited was the Parramatta League Club where Lightmoves supplied and installed the lighting, audio, video and decorative trussing for the Kicks nightclub.

Parramatta is a few miles west of Sydney and the club caters for the 18-22 age group. Known as 'Westies' in Sydney, the clientele is comparable to our Sharon and Tracys. The lighting system, run by John Meyers, includes six Coemar Brio intelligent light fittings (Australia's largest installation) and features an Enigma



Jonathan Ciddor (managing director) and Peter McKenzie (sales director) of Lightmoves.

lighting controller. It was interesting to note that in the DJ and lighting booth all work surfaces were set at an angle to deter people from putting their glasses near equipment. Beer spillage in lighting desks appears to be a bit of a problem in Australia.

"We also installed a Jem 428 smoke machine which, with the Coemar Brios, is fairly important," explained Jonathan Ciddor. "Unfortunately, the club never addressed the problem with smoke detectors in their air-conditioning so whenever they use the smoke they bring out the fire brigade and land a \$200 fine. It'll cost them about \$4000 to change the smoke detectors and the priority they've given the whole thing is such that the smoke machines are never used. So you've got 16 intelligent lights and a whole pile of other equipment sitting there not doing a lot. It works,

and it works quite well, but you don't get that 3D effect that a smoke machine would give. We've only got what cigarette smoke is around but, with the efficient air-conditioning, there isn't that much. It's sad because we designed the whole rig around the Coemar Brios and a huge amount of smoke."

The nightclub scene in Australia has been steadily falling behind for numerous reasons, especially the introduction of random breath testing. Club goers have opted for the Dance Party scene instead, where they can enjoy themselves for longer without the threat of an early closing night. The warmer weather also assists in allowing the late stayers to party all night. Unusual outdoor venues are popular, one I heard of was in a valley where natural rolling fog was used instead of smoke machines. Unusual indoor venues include a rave called

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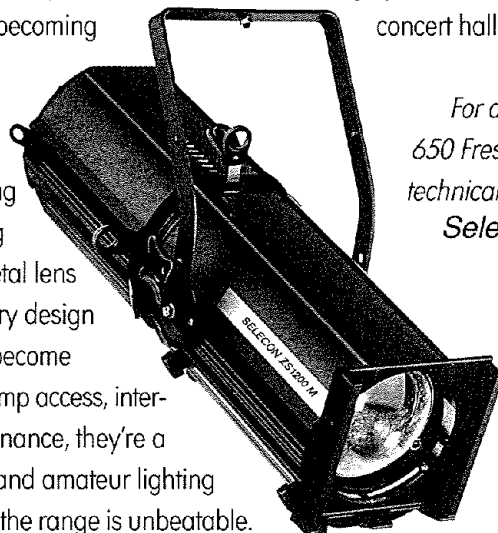
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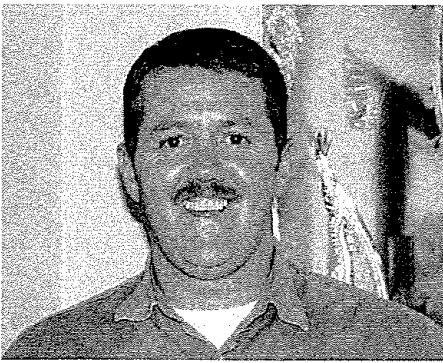


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Allan Parkinson: LD for 15 years.

'Squid' held in Sydney's impressive walk-through aquarium. It gives a whole new meaning to 'Sole' music.

Sydney's reputation as the dance party capital of the world was well and truly established long before the English rave scene began. The night some people from England's trendy ID magazine visited a Sydney dance party, it rained and the crowd, in Sydney terms, was extremely small. It turned out to be the largest dance party the Londoners had ever seen.

In 1990, dance parties reached their peak with one held every Saturday night at the Hordern Pavilion attracting thousands. Although the authorities are fairly lenient in Sydney, sound restrictions were imposed in that area and the parties are not so much dying a death but constantly changing. Unlike DJs here in the UK who can be annoyingly obscure and too trendy with their musical selections, DJs at Sydney dance parties play an extremely varied choice of music. Trends like acid music do not last long in Australia.

Allan Parkinson, originally a hairdresser, has worked as a lighting designer in Sydney nightclubs for 15 years. He has also done a lot of dance parties and, in the past 12 months, he claims to have worked on 95% of them. With his room-mate, Allan also owns a dance party company called Big Boys(!) They finance, design and stage about three parties a year, the last being on Australia Day when they flew in a band from London.

"Nightclubs here have never been at such a high standard as overseas and I still think 'how come' and 'why?'" said Allan. "Even ten years ago when I was living in New York I was going to four million dollar clubs, then I would return to Sydney and have to go to twiddly old dance bars and think why, why, why? I think people thought investing in the nightclub scene was too much of a gamble. In Sydney there is nothing on the scale of London, although there is in Melbourne.

"There's a strip in Melbourne called Nightclub Heaven and there are five nightclubs on that strip that all cost four million dollars. There's a big difference between Sydney and Melbourne when it comes to the nightclub scene. Sydney has never had it. It's had clubs that go all night but with tacky sound and lighting systems compared to Melbourne. So when the dance party scene started people went crazy. People prefer to go to dance parties and four years ago the clubs really felt the pinch.

"There aren't as many dance parties now compared to a couple of years ago although there's an English rave held every Saturday night. Die-hard dance party people don't go to them because the production they're used to just isn't there. They're not going to be happy with just a couple of strobes. The raves spend little money, get a lot of people there, and make a lot more money.

"The people in this city have become very spoilt, they can look at a lighting rig and know if you've used Vari*Lites, Roboscans, Golden Scans, etc. They are used to the best. Even at an

ordinary Saturday dance party we spend maybe \$18,000 just on lighting. Every show that I design myself I try to go up one step from my previous show. If you're going into a venue someone used the week before for a dance party, the crowd expect it to be transformed beyond recognition. Whatever party I design, if I'm using Vari*Lites I run the console.

"When it comes to sound, the councils are lenient. We've learned that if you're going to put on a dance party you can't put in a cheap sound system because, eventually, you'll get closed down. You've got to work with good sound companies. Jands are fantastic, they've done all the venues and know what to put in sound-wise. You don't have to change it as it's been perfected."

Several times Allan Parkinson has been chosen to light what must be Sydney's biggest dance party - The Gay and Lesbian Mardi Gras - which is traditionally held on the last Saturday in February. It starts with a large street parade, attracting 500,000 spectators, and culminates at the Show Grounds for a massive party for 17,000 people which lasts well into the next day.

The Show Ground comprises three venues - the Royal Hall of Industries, the Hordern Pavilion and the Dome Banquet Hall - and each houses a different style of music and lighting. Each venue goes until about 10am, then they shut down one by one until the whole party ends up in the RHI.

Overall the Mardi Gras festival costs around a quarter of a million dollars to stage, with a lighting budget of \$65,000 and \$30,000 for sound. This year Allan tried to break away from 'twiddly disco things' so he used rock and roll technology as much as possible, with Jands as the main supplier.

The theme for the main hall, the RHI, was the song 'Somewhere Over The Rainbow' and the main lighting feature was a moving truss with three universal joints which enabled it to bend into a rainbow shape. Rigged on the trusses were 24 Vari*Lite VL2Bs, 12 Molemags, 64 Pars and eight super strobes. Control was via a Celco Gold.

"We flew a large cyc on the edge of the dancefloor onto which the Vari*Lites projected gobos and chase colours. At the given point, we moved all the Vari*Lites off the screen, the horizontal rig transformed into a huge rainbow and the Vari*Lites came on in all the different shades of a rainbow. They flashed about so that when you looked up you were under a rainbow of light. It was quite amazing. Because we could move the Vari*Lites we started swinging the rainbow around the room. Huge balloons were also pushed out over the crowd and at the climax to the song, pyrotechnics went off all around the room."

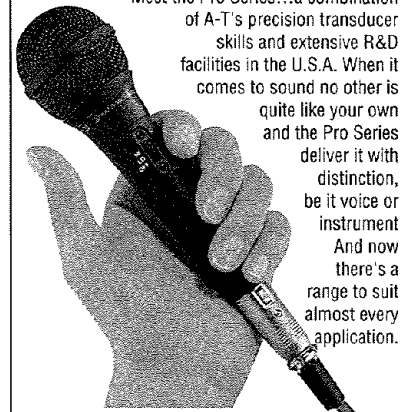
In the Dome Banquet Hall there was a basic Vari*Lite system, whilst in the Hordern Pavilion Allan dispensed with rigging by using three scaffold towers instead. These towers were 28, 24 and 20 feet tall respectively and covered in mirrors which effectively reflected the two eight watt, three colour lasers supplied by Total Concept Productions. Also used were Par cans, scanners and strobes.

Although some people predict the demise of dance parties in Sydney, there certainly seemed to be a great deal happening, along with raves, whilst I was there. A free magazine, easily picked up, advertises forthcoming events with special emphasis put on the lighting effects that will be deployed.

Party goers in Sydney are very aware of lighting and hence a high standard has been reached. Until the clubs start putting in as much effort as independent party promoters, people will stick to warehouses, port-a-loos and all.

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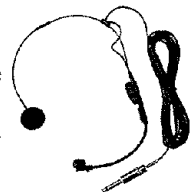
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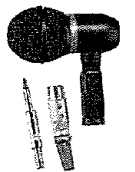
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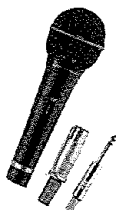
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TAKING THE MUSIC MARKET BY STORM

Tony Gottelier visits Wharfedale

Wharfedale has been a name synonymous with domestic hi-fi since Gilbert Briggs built his first loudspeaker in Ilkley in the early thirties. The image was maintained through the ups and downs of corporate ownership (by the Rank Organisation for 23 years) and, during the last ten years through a succession of private hands. Now happily settled within a consortium of entrepreneurial city institutions, Wharfedale are poised to bring their expertise and solid reputation into the commercial arena with a range of higher performance speakers principally structured for the smaller entertainment package. The market so strongly staked out by, and often identified with, Bose.

Yet some of these cabinets are finding their way into surprising places, the Theatre Royal, York, for example. To find out more about what was going on, I travelled to Leeds at the invitation of Steve Halsall, since 1990 Wharfedale's Professional Audio Group product manager; an opportunity also to avail myself of the chance to see how their speakers are made.

First, to get the product succession into perspective I talked to Gary Orrell who, as professional sales manager, has seen the gradual drift towards higher performance enclosures over the last five years which originally led to the 'Programme Series'. "CD juke boxes were really the first catalyst," Orrell explained. "They created an immediate need in commercial environments for a better quality speaker to match the improved reproduction of source material. First, we saw Bose ML2 boxes finding their way into fun pubs and cafe bars, while Wharfedale's tiny 'Diamond 3', our best selling domestic hi-fi speaker, started to appear in restaurants. These unplanned applications were closely followed by a demand from Bass Leisure, and others, for something more robust." Wharfedale's response, implemented by Walter Mirauer, sales and marketing director at the time, was to introduce the 'Programme 20', basically a 'beefed-up' version of the Bose antecedent. (Here, of course, was the link with Bose, since Walter had previously been a driving force in their UK operation.)

While the 'Programme 20' collected a clutch of awards for its performance as a hi-fi speaker, the range was expanding rapidly first with the 'Programme 30D', essentially a commercial version of the 'Diamond 3' (only 225mm high, but with added protection and better base response resulting from reflex porting and a large magnet mid/base driver), and Link 600 an active version of the 30D. The demand for wider dispersion systems, fuelled by the Karaoke craze, was satisfied with the 'Programme 2100' marque, which features baker-effect arrays developed in Wharfedale's R&D department, and provides a full-range model and a diminutive mid-range unit which can act as a satellite for the series' compact sub-bass enclosure.

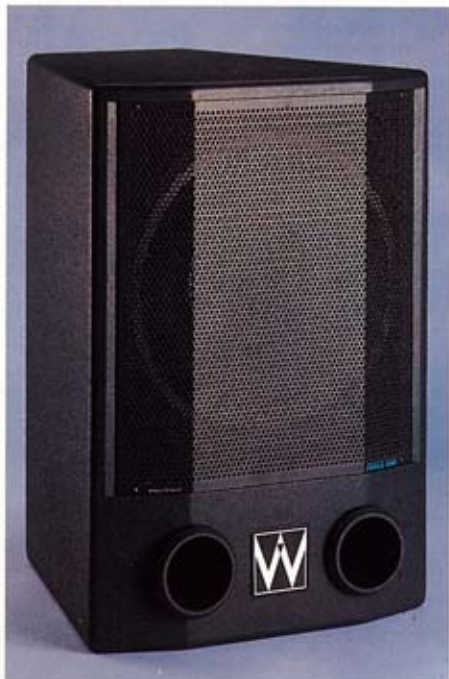
Guess who was pushing for these introductions from the customers' viewpoint? None other than Steve Halsall, then responsible for technical installations at Bass Leisure, which had developed into a major supplier of entertainment systems to the pub, club and leisure market. Perceiving that higher power handling developments at Wharfedale could go still further, especially with his close knowledge of the vast music venue market in the UK, Steve was delighted when he was offered the opportunity to join the company in a role which enabled him to be responsible for a group of products, from inception to market, and in which he would have a real influence on the shape of the final product - a true marketing role, for which sadly too few companies see a need these days.

Taking the success of the Bose 801 and 301 as benchmarks in the designated market sector, Halsall astutely identified price as an equally important factor alongside performance. Having established these and other parameters he immediately implemented discussions on his 'wish list' with Richard Lee, Wharfedale's pragmatic R&D man, to examine the practicality of achieving those aims. From these feasibility studies came specifications and a product brief for a range of higher performance sound reinforcement products which, they believed,

would give Bose a run for their money.

"One of my prime requirements was for a compact high performance universal loudspeaker, suitable for diverse applications from disco to live PA," Steve remembers. "But at a price as far below £1,000 as possible. It was quite a challenge for Richard Lee and his team, but one which they appear to have taken on with some confidence and resolved with considerable flair, and which culminated in the emergence of the 'Force 9', one of a range of 'storm force' enclosures which made their first appearance at the Frankfurt Show earlier this year. Clearly, Wharfedale were able to take advantage of the superior power driver technology, which came as part and parcel of the Fane acquisition, by now fully integrated into the production facility in the Leeds factory. Price and performance were resolved at a stroke, by the resultant crafty design of a coaxial driver, sharing the flux of a single magnet between the 300mm base and the 45mm HF compression driver. They also managed to get the low frequency transmission down to around 50Hz, a reasonable target for a full-range cabinet, the brief for which excluded the mandatory use of a separate processor on cost-competitive grounds. And the final retail price? £749.00.

The conical, 60 by 60 degrees dispersion, which is achieved with this design, makes the 'Force 9' an ideal speaker for small audience use, such as live or disco," Steve Halsall states with conviction. In fact, the faceted enclosure has also been shaped to gain maximum advantage from these equal dispersion characteristics, the trapezoidal design of which enables mounting in any orientation. And while we're on cabinets there's more: Steve had wanted the boxes to have an industrial look. "Something more than just another wooden speaker box, something with some aesthetic design and practical advantages beyond the normal cabinet." This concept looked as if it would be sidelined, when it was thought that only injection moulding could solve the problem for which the tooling would have required a massive commitment. Subsequently, rotational



The low blow. Wharfedale's 'Force 9' sub-woofer.



Stackability. The 'Force 9P' polymer cabinet facilitates stacking, and interlocking arrays are a piece of 'Lego'.

moulding was proposed, which has resulted in a handsome, lightweight high impact enclosure, especially suitable for touring. Weighing in at 12.5Kg, five kilos less than its unidentical twin, the 'Force 9P' not only looks sexy, but also provides the added advantage of stackability. Interlocking fins have been incorporated into the package, enabling arrays and stacks to be constructed like 'Lego'.

To complete the 'Force 9' range, and to provide the possibility of sustained high volume levels at even lower (40dB) frequencies, the 'Force 9SB' is a designated sub-woofer enclosure designed to deliver that crucial extra 10dB of punch which you feel at gut level, the acceptable version of the 'low blow'. Last, forging a vital link between the full-range 'Force 9' cabinet and the SB, and completing the picture in terms of system integration, comes the aptly named bass extender 'Force 9BE'. This line level sub-bass processor allows the running of high-power bass drivers to the limit of their excursion, but no further. It is claimed that this electronic device can boost output by as much as 4dB, while the overload detection circuit protects against damage. Unusually, and perhaps uniquely in such a unit, trim pots are provided to allow the high and low frequencies to be balanced to suit the space in which they are to be installed.

Finally the series is completed, for the time being at least, by a small full-range speaker, the ultra-compact 'Force 5'. Its broader, but still conical, dispersion pattern (90x90) and physical size make it particularly useful as an infill speaker, though it will doubtless find a role in speech and vocal applications. In the Force 5, base response below 65Hz is rolled off to facilitate the possibility of high SPLs without compression and in-built EQ and auto-reset protection circuitry is another useful feature.

"Nine out ten listeners in a blind test preferred them," cracked Walter Mirauer, who had come along for the ride. This was an allusion to some listening tests Steve Halsall and Richard Lee had carried out in the Wharfedale 'living room' as developments progressed. I have to say that, though not submitted to the blindfold myself, I was pleasantly surprised by the demonstration of the 'Force 9' system in Wharfedale's sparse demo space.

And so to see how the speakers are assembled in the 63,000 square foot factory. At this point



Close attention. Precision gluing requires a steady hand in the Wharfedale factory.

readers can relax as I have no intention of subjecting them to a blow-by-blow description and explanation of the making of a speaker. I will let the pictures (thank God they came out for once!) and their captions do that for me far better. Suffice to say that I was staggered as to how manual the operation still is, apparently only car speaker production can justify full automation, and how very dependent on the individual skills of the work force and the latest adhesives. So it is perhaps not surprising, in an operation which is so people dependent, that they have found that the application of the requirements for BS5750 recognition has helped to change attitudes and that the workforce has responded well to the challenge.

Both operations manager Kevin Dobson and Richard Lee told me that because nobody makes machinery specifically for the manufacture of speakers they have to look out for equipment made for other purposes, but which can be adapted to perform a useful task for them. Hence the 'pie oven', normally seen in plastic cup manufacturing, but here used for the drawing of speaker cones. Nevertheless,



The 'pie oven'. Normally seen in plastic cup manufacture.

Wharfedale believe that they have the most productive speaker line in the hi-fi business and are constantly looking for improvements. Here again the Fane involvement has been mutually beneficial. They were first to use epoxy resin as the base for their coils and now a combination of the glass fibre with aluminium will enable new winding machinery to produce all of these in future. And the production team are particularly proud of their test facilities, run in software on IBM compatible PCs. Richard Lee: "As far as we are aware we use the most sophisticated test procedures of any manufacturer, with accuracy to within 1dB. Other companies are very jealous of this."

"During my time at the company I became aware that the Wharfedale 'Force 9' system had been adopted for an interesting project at the Theatre Royal in York and I thought that this was worth following up. At the instigation of the Music Technology Group at York University, a department set up in 1980 to exploit the combined expertise of both the Music and Electronics departments, the theatre is presenting its annual cycle of York Mystery Plays



The 'Force 9BE' line level sub-bass extender/processor.



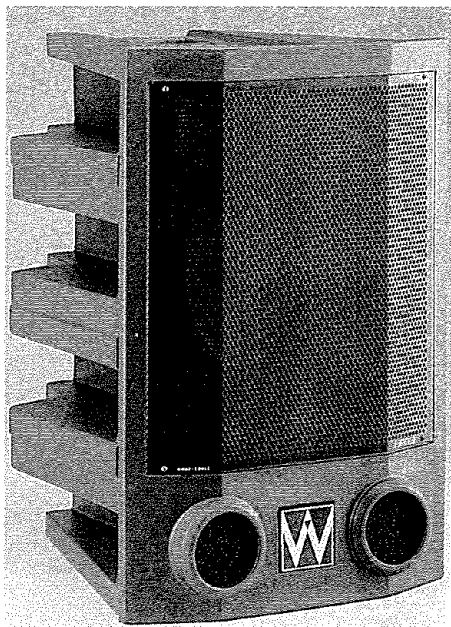
The ultra-compact 'Force 5'.



The Theatre Royal in York where the 'Force 9' is to be used in an Ambisonic environment.



Close-up of flown 'Force 9' part of the Ambisonic set-up at the Theatre Royal in York.



A close-up of the 'Force 9P' clearly showing the tough moulded polymer enclosure which has touring advantages.

in '3-D Ambisonic surround sound'. Apparently, this sound projection technique requires speakers which have a point-source characteristic with a well controlled, even dispersion pattern at all frequencies and, according to Dave Malham of the University who designed the system, "the Wharfedale Force 9 speakers are one of the very few which meet those requirements - besides which their efficiency means that the 'Voice of God' will be more than adequately loud!"

The system for the Mystery Plays will consist of 16 main speakers - arranged in three rings of four at Dress Circle, Upper Circle and Gallery levels, two more at Stalls level and a further two in the ceiling - to form a sphere. Two 'Force 9SB' are also used. The programmable Ambisonic decoder, designed by David Malham based on technology first available in the 70s, drives this array and feeds the speakers with data to enable sounds to appear anywhere within the theoretical sphere. Hence the 3-D effect.

While the Uni. will also be supplying specialized hemisphere pan pots and other controllers for moving sounds around, Malham's colleague Andy Hunt will provide the 'MidiGrid' computer system which will not only do the usual MIDI stuff with synths and samplers, but will also enable them to respond to sensors placed on stage which will be triggered by the location and proximity of the performers. (Shades of the early Live Wire system, this). L+SI readers will be interested to know that the Music Technology department at York already runs an eponymous postgraduate course and will shortly start an undergraduate course. It seems to me that the work of this unusual department could be of great interest to our industry and certainly deserves our encouragement and curiosity.

Wharfedale have done well to become associated with this particular project. Indeed, if you will excuse the pun, it could be said that they have been 'forcing' the pace in speaker development since the very beginning in 1932 and are once again forcing the pace into the 90s. Yet, with the domestic hi-fi industry in disarray due to the continuing recession, as witness recent problems at Kef and Celestion, their long term future may be more a matter of whether the city backers keep their nerve in the short term.

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FOR THE EMPIRE NOW READ EQUINOX

L+SI Reports from Leicester Square

The Empire, that tired old lady in Leicester Square, has finally been given the radical facelift which that famous site has always justified. Under the close scrutiny of city analysts - it is often suggested that it is the only discotheque in the country, other than Annabellas, that the money men have ever heard of - publicly quoted entertainments group First Leisure has been reluctant in the past to take operational risks with such a sensitive site. Several previous refits made little impact, and competition from the adjacent Hippodrome made its mark.

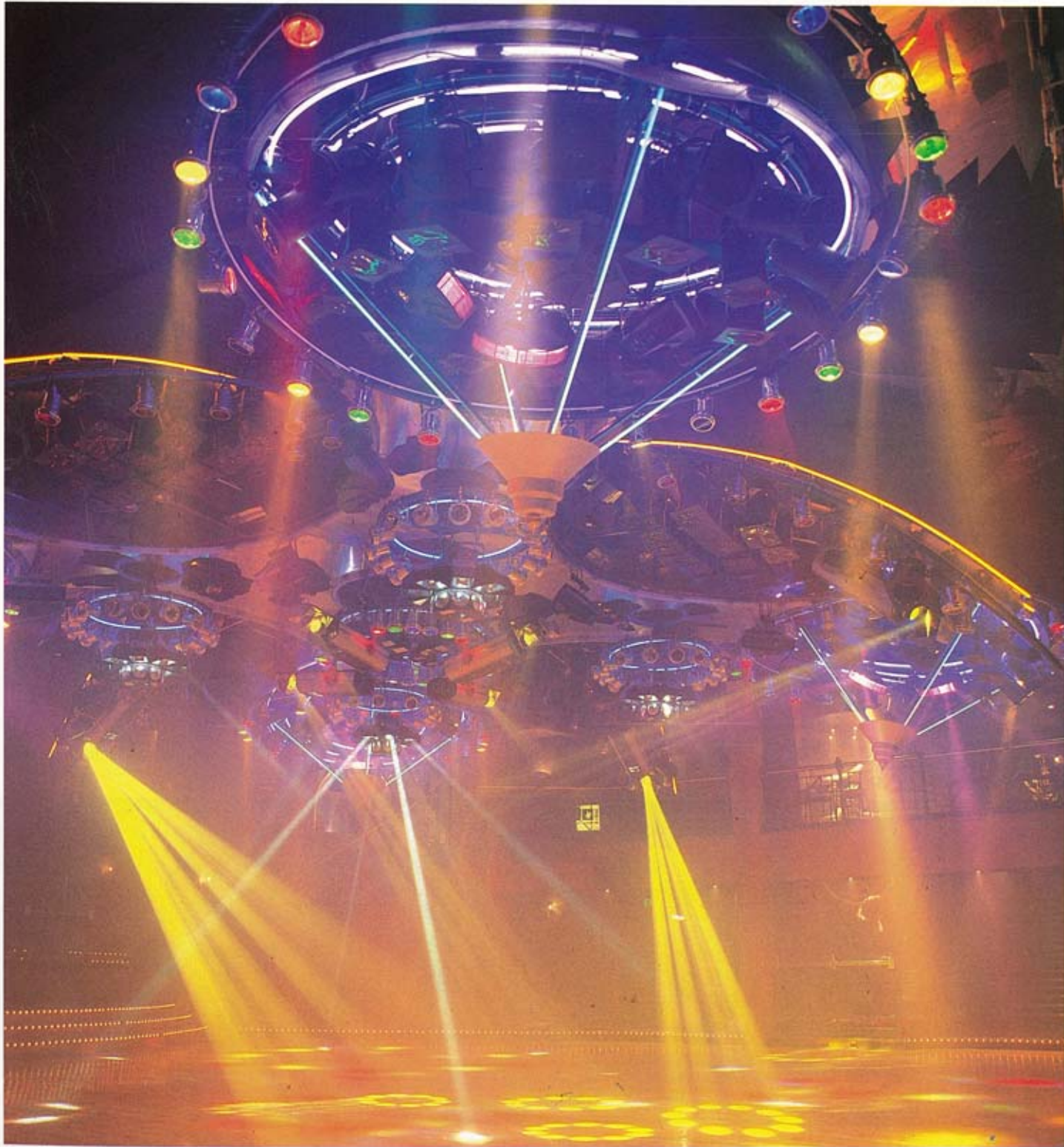
Now, however, Dublin-based architects McNally Duffy have given the place a very

different look and a new name to go with it - Equinox. Facelift is a convenient description, since giant theatrical masks have been selected by the designers as the emblem for the new concept and these are a prominent decor feature - half black, half white, reflecting the climatic and climactic theme invoked in the new name where light and night have equal dominance.

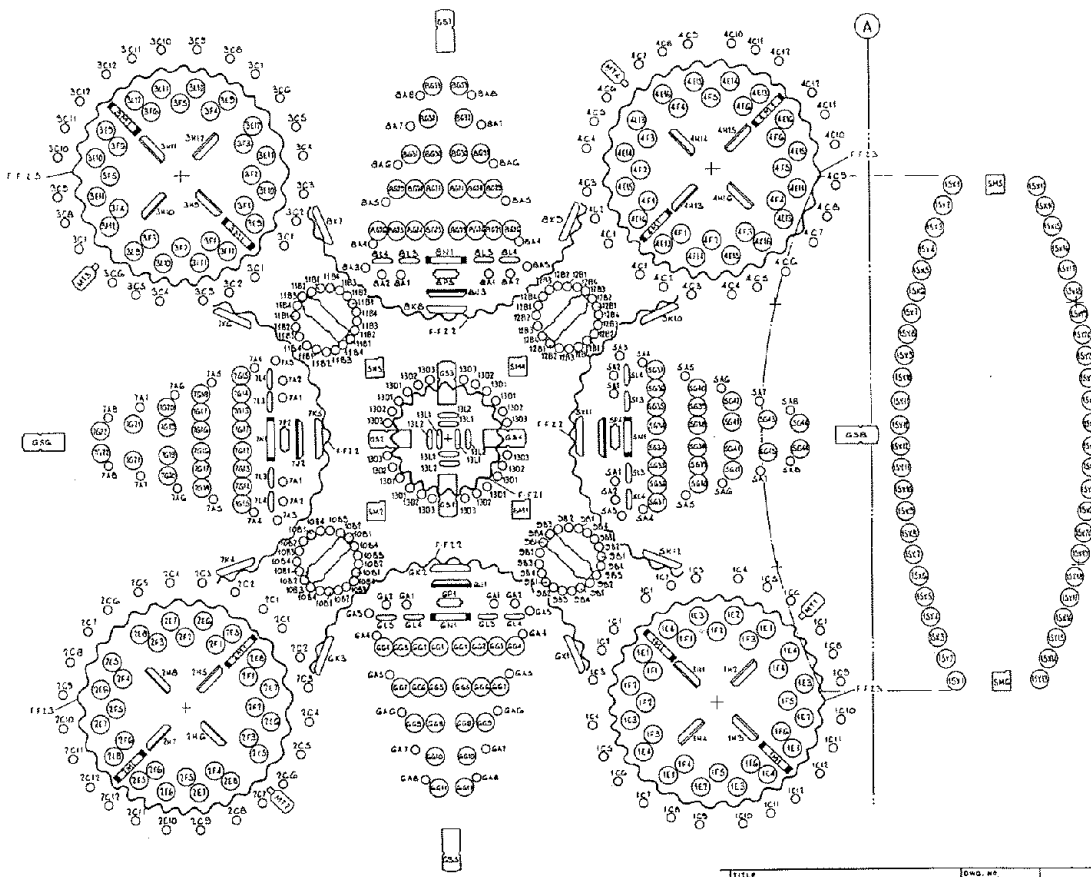
Yet, the changes go further than just cosmetic surgery and would be more aptly described as a heart and lung transplant. McNally have succeeded in giving the whole space a completely different feel by opening up several

previously closed-off areas, and by adding linking bridges and open stairways at differing levels, they have transformed the whole area into an open piazza in which the public move like movie extras.

The technical changes would not be considered so radical, but they have made a considerable difference nevertheless. The sound system has been repositioned and re-equalized, probably as much in an attempt to improve its overall performance as to suit the new layout. This has certainly been successful and the new equalization yields a vast improvement in both audible quality and acoustic stimulation.



The 'decaying bio-mechanical alien vessel' - centrepiece of The Equinox.



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As part of the re-jigging of the space, the old stage with its revolve has been removed and replaced by an open performance area with a bar behind. A separate lighting set-up is provided for this, consisting largely of Parcans controlled by a small Celco desk. From behind this bar, hidden within the massive emblematic mask of the backdrop, is the retained Laser Grafix Purelight laser, requiring a complex system of mirrors to provide a route into open space to achieve beam visibility amongst all the new lighting hardware over the dance area.

This new lighting rig by Light Angles, who won most of the prizes in First Leisure's rather limited lighting contest for this year's refits, replaces its predecessor with an altogether more imaginative concept. Although the shaped structure which has been adopted does little to reflect the architect's interior look (it is described as "a decaying bio-mechanical alien vessel"), the elemental movement and degree of lighting action which it provides certainly heightens the

dancing experience in a way that was out of reach of the previous system. Several of the original lighting instruments have been recycled and successfully given a new look within this scenario and the same ALS Enigma control system drives it, but many new luminaires have also been added as can be seen from the below list. Project architect John Duffy commented to L+S: "In the final analysis I was pleased with what we had been able to achieve from a much reduced budget and in a very tight programme. Although I have to admit to being a little disappointed with the way the lighting rig affects the sightlines from the gallery."

Equinox has been chosen as the venue for the DJ awards ceremony at this year's PLASA Light and Sound Show.

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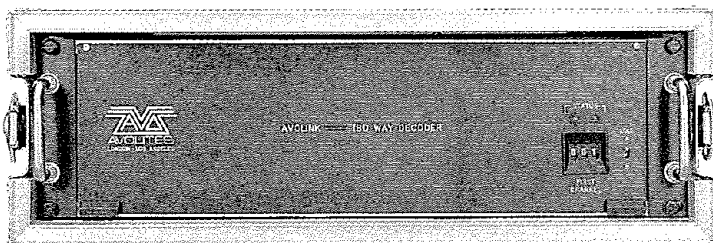
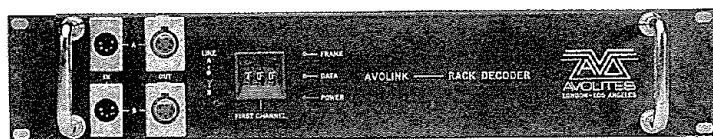
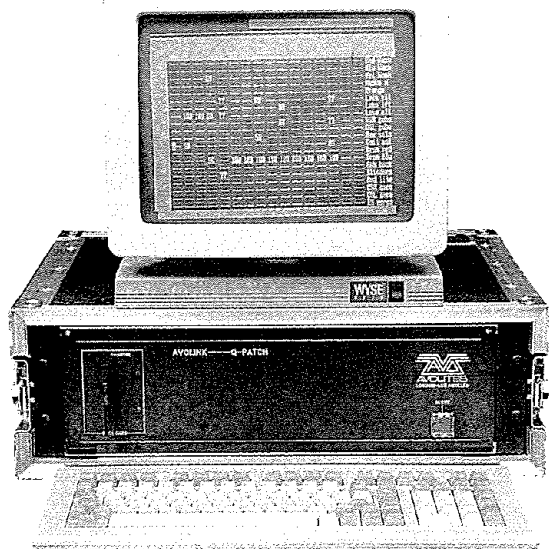
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AVOLITES LTD PRODUCT PROFILE DATA

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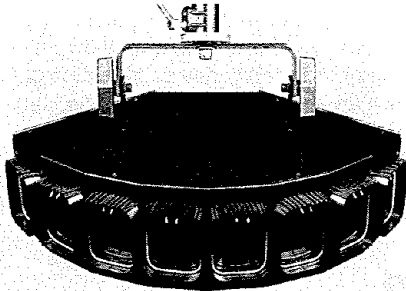
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FROM ROCK TO OPERA - AVOLITES MAKING LIGHT WORK

EQUIPMENT *News*

Lightwave Multiflash

Lightwave Research has introduced the Multiflash (pictured below), a high quality, low priced multiple lens flashlamp projector with optional dichroic colours. Eight separate focused beams of strobed light fan out from a single xenon linear flashlamp, covering more than a 90 degree angle. The beams produced by Multiflash can project up to distances of over 22.5 metres (75 feet). The unit's on board microprocessor reads incoming serial data to determine intensity and rate.



An air-cooled fixture, the Multiflash is digitally addressable by means of DIP switches located on the rear of the fixture. Connection to the data lines is accomplished by a standard 3 pin XLR connector. The fixture can be controlled by a Dataflash controller or the new Dataflash Mini-Controller. Standard colours of dichroic filters include blue, aqua, purple, green, red, light magenta, orange and yellow. The special xenon lamp used in the Multiflash is mounted on the removable lamp door for easy access.

The Austin-based company have also recently added the low voltage Color Pro EX to their line of colour changing spotlights. Featuring three 4000 hour, 12 volt, lamps, the Color Pro EX is suitable for any application where lamp replacement cost is a concern, according to the company. The dichroic colour changing luminaire has self-contained dimming and is pattern capable. The Color Pro controller has 16 addresses (or channels) and outputs serial data via a 3 pin XLR data line. Controllers can be slaves for larger systems. A protocol interface can be used with RS-232, analog, and DMX-512 controllers.

For more information contact Lightwave Research in Texas, telephone (512) 836 2242.

Intellagobo

Los Angeles-based Towards 2000 Inc. have introduced a new gobo wheel for the Lightwave Research Intellabeam. The Lightforce gobo wheel includes seven of the standard Intellabeam gobos etched in the wheel to match up with stock fixtures and three replaceable gobos slots. The company has also made available a full range of miniature gobos manufactured specifically for the fixture.

Towards 2000 have also introduced Rentquick, a commercial version of their in-house sales and rental tracking software. The program provides rental allocation information on all rental inventory as well as providing separate inventory control for sales. It features a full customer/vendor database and calendar scheduling system. An accounts receivable package is included with general ledger and accounts payable modules also available. The program is written in Foxpro and uses DBase compatible DBF files. For details contact Towards 2000 in Hollywood, telephone (818) 769 5622.

15A Plugs and Sockets

Stanmore-based Clipsal have released a 15A plug top, and sockets to suit, which is aimed at sound and lighting installers.

The plug is moulded from impact resistant polycarbonate. Its base is moulded in clear polycarbonate, a unique feature which enables the wiring and fuse size to be checked without disassembling the plug, and also features insulated live and neutral pins.

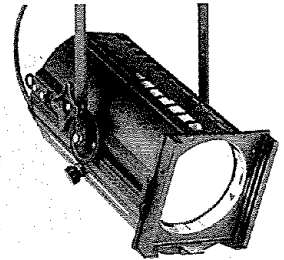
Also released are 15A switched and unswitched sockets, moulded in polycarbonate. Completing the 15A range is a single gang metal clad socket which features impact resistant polycarbonate insert, and grey epoxy powder-coated metal face plate. Further details available from Clipsal in Stanmore, telephone 081-204 9494.

B.K. Flight-Cased

B.K. Electronics are taking-off with flight-cased loudspeakers. As UK distributors for IBL, B.K. are commencing by launching three full range models. These include 12" 100 Watts RMS, 12" 200 Watts RMS and 15" 200 Watts RMS. All models are fitted with wide dispersion horns and include grilles, factory-fitted to the die-cast aluminium loudspeaker chassis. For further details contact B.K. Electronics in Southend-on-Sea, telephone (0702) 527752.

Selecon PC1200

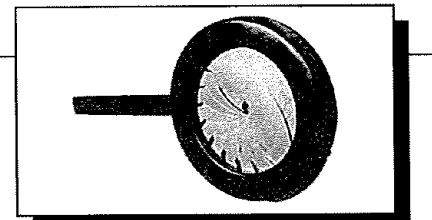
A new lens to enhance the unique beam characteristics of the plano-convex spot has been custom-designed by New Zealand-based Selecon.



According to the company the clarity and even quality of the beam is due to the optically ground rear surface of the lens. Manufactured from Pyrex (R), the front convex surface of the lens has a diffusion pattern moulded into the glass to provide a soft edge beam similar to a profile beam with 114 Hamburg Frost. To partner the Fresnel 1200 Selecon use a 175mm (7") lens to maximise light output. Focus action is fast with Selecon's posi-slide movement. The housing is constructed from aluminium extrusions and die castings. For further details contact Selecon, telephone (64) 9 360 1718.

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Toa have recently launched the BA-800 Series background music system as a successor to the BA-400 Series. The new range incorporates improved frequency range, Dolby sound, extended cassette deck, autoskip facility and stereo capability. Top of the range is the BA-823 stereo double cassette play amplifier with 30W + 30W stereo operation. The BA-806 (60w) and BA-803 (30w) are both mono double cassette play amplifiers. The BA-800 double cassette player offers two output modes, either 10K ohm-10dB unbalanced stereo output, or balanced, transformer isolated output for 600 ohm load operation. For more information contact Toa in Brentwood, telephone (0277) 233882.



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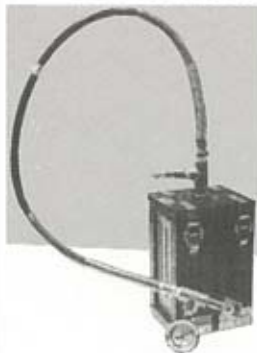


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ARROW AND THE FLYING CARPET

John Offord discovers the Magic of Computerised Motion Control

Out in East London, not far from West Ham football stadium, Arrow Rigging have set themselves up in a dusty yard that belies their status as masters of motion control technology, let alone rigging experts of anything you might like to dream up. In fact, you have to be a bit of a tracking expert yourself to even locate their base, U-turning over railway bridges and negotiating wall-lined back alleys.

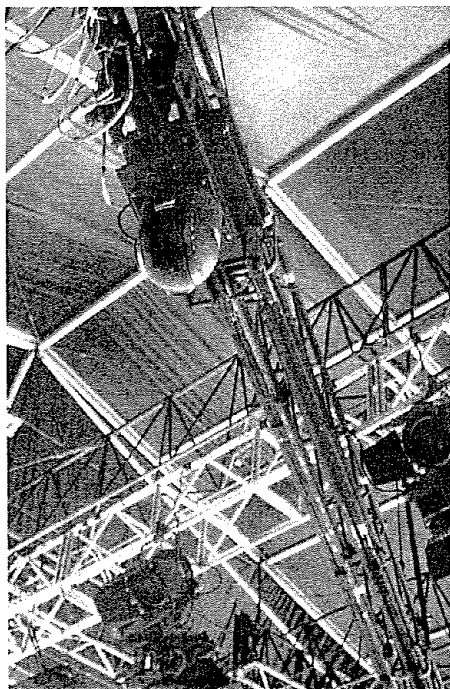
The company's director duet of Steve Colley and Eddie Campbell has been out on its own for four years now since leaving Unusual Rigging, one of the original impresarios in the field. They are now firmly installed as one of the team of British companies who excel in the art of flying and hanging scenery, lighting, AV and sound equipment - or whatever gets thrown at them from devious designers in the world of presentation and entertainment.

Arrow's art goes further, however. For the past two years or so they've been hard at work developing their in-house and highly exclusive technology in the area of computer-driven motion control. And their lead in the field is manifest in several ways, most obviously in their Camtrak TV camera tracking system.

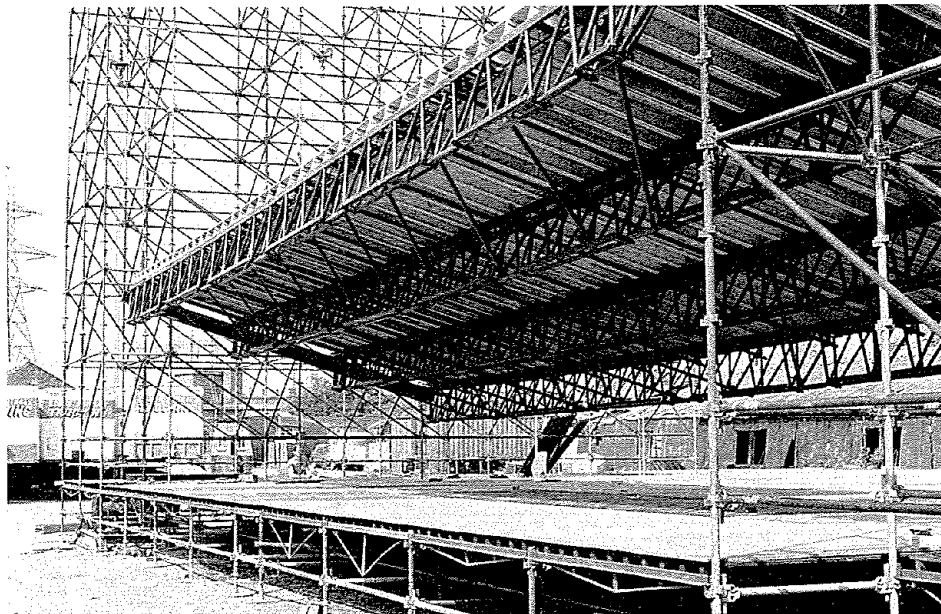
I asked director Eddie Campbell how the process had begun. "It was all conceived as an idea for a hoist," he explained, "and the beauty of it was that you could lift something at variable speed, at variable rates of acceleration and deceleration, coupled with accurate positioning. That's where we were looking, and that's what we were trying to achieve."

The development road has been long and hard. "It started with playing about with two tiny little motors and a piece of string and A4 card that was moved up and down," continued Eddie. "We put in the bonus of a small hand-wheel that was an en-coder. By turning the wheel the piece of card would move proportionately."

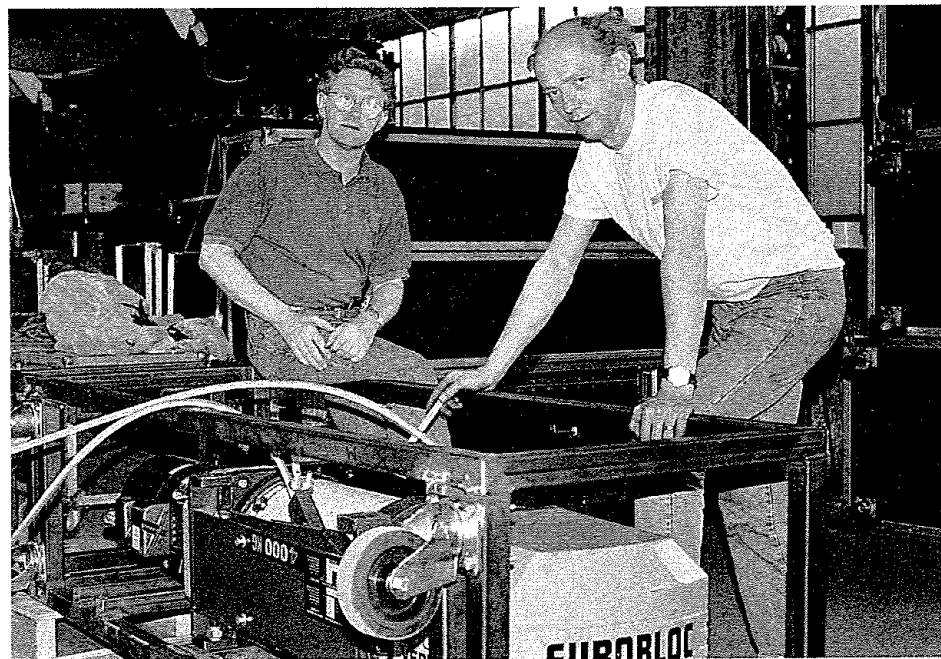
It got scaled up, of course, and neatly fitted a gap in the market. "The crux of it all is the variable speed ability. Then came the added bonus of pre-programming and positional accuracy. It's been a long and hard struggle to get it there."



Camtrak for Pavarotti in the Park, Hyde Park, London, July 1991.



The UK/Europe version of Michael Jackson's motion-controlled stage set up in East London. Below, Eddie Campbell and systems manager John Kersley check out one of the motor units.



Eddie is the first to admit that the system is largely a hybrid. "A lot of it is taken from the robotics industry," he said. "The motors are 'off-the-shelf' - but nobody had taken this particular combination of motors and control and put them together. Our secret is that each motor has its own little computer so that it gives intelligent data to one processing computer - rather than have one computer trying to control everything. From there we built it all into a normal travelling format, and put a set of wheels on it..."

The control system that has resulted is easy to organise and flexible in use. The Camtrak system comprises a robust track, highly stable silent-running carriers and comprehensive cable management systems. It operates at variable speeds and positioning can be pre-programmed. Acceleration and deceleration factors are such that positioning is accurate within 3mm. The compact lap-top control console, manual or programmable, is consistent with industry standard remote control consoles, and the control software is continually being developed

to provide more sophisticated movement and positioning. The track operators work alongside the remote control camera operator and have extensive film and television production experience.

The system had its debut on a Citroen car launch in Monte Carlo where a group of Vari*Lites was moved as a tumbling mirror effect. "The car drove down a ramp, downstage, with Vari*Lites following it as if it were rolling over and over," said Eddie. "It triggered a lot of interest as it was quite spectacular."

The uses the Camtrak tracking system has been put to since then are widespread, and it came of age very quickly. When Nigel Mansell walked back to the Silverstone pits in tears in the 1990 British Grand Prix, Camtrak recorded it. It took a long time to convince the authorities, but the track system used at Silverstone is cantilevered out from the main pit building so that the tracking cameras can home in from above on the action as it takes place, and right on cue for the TV director.

A 40 metre track was installed high above the



Arrow's Steve Colley was rigging consultant for British Gas AGM at the NEC for Commercial Presentations. Truss was TAS Stage MK4 and Slick Lite Beam, lifting gear was Verlinde and control systems 1 x 16 way and 1 x 12 way with remotes. The tab track was 110m and 672m of black wool serge was involved.

auditorium at London's Royal Albert Hall for a performance of Beethoven's Ninth Symphony at the Last Night of the Proms. What the cameras were able to put on screen was an astonishing revelation for millions of television viewers - a totally new angle on the performance below.

Paul McCartney used Camtrak on his 1990 World Tour and lighting designer and video director Marc Brickman was able to use the

gyro-stabilised cameras as an integral part of the live show. The lenses could sweep the audience, picking out individual members or groups of the audience projecting them on to large screens on stage.

The latest trickery from Arrow is being used in the Michael Jackson tour, just beginning in the US. A huge full-size stage, weighing in at 12 tons, lifts and goes up to a height of four metres above

the normal stage level to reveal a set underneath. "He'll then come down, work in that set, and then go back up and work on the top while it moves," explained Eddie Campbell, not quite sure of what else they might do with it, as it can move and tilt in in rhythm. "Four four-ton hoists, located in special lifting bays, are involved, which are all rated well over capacity for safety reasons." They have been specially designed by



Camtrak at Silverstone: the 'over pit' view is provided by cameras tracking on the cantilevered system.



Venue: a municipal gasometer, Vienna. The disused circular building was used by Opel for a presentation. Trussing was TAS and scaffolding Kwik Form. 20 Verlinde motors and 15 Felco hand chain blocks were employed. Rigging consultant was Eddie Campbell of Arrow Rigging.



Arrow Rigging's managing director Steve Colley (left) pictured with Philip Pescod, rigging chief for the Rolling Stones Steel Wheels tour.

Arrow to be driven by intelligent motors, and fitted with extra safety features in line with stringent insurance requirements. The lifting speed is 14m per minute and the system works to a positional accuracy of plus or minus 4mm.

Back to earth from the 'flying carpet' I brought up the subject of tracking luminaires. They have been much talked about over the past few years as the next dimension in lighting technology. Would this be the next area of development for Arrow Rigging?

Eddie Campbell had a very pragmatic view of the situation. "If it arrives it will evolve from research and development in other fields. I don't think anybody can work on it specifically because of the huge development costs involved. Unless a large touring act comes up with some big money, the television camera field is potentially far more lucrative," he said.

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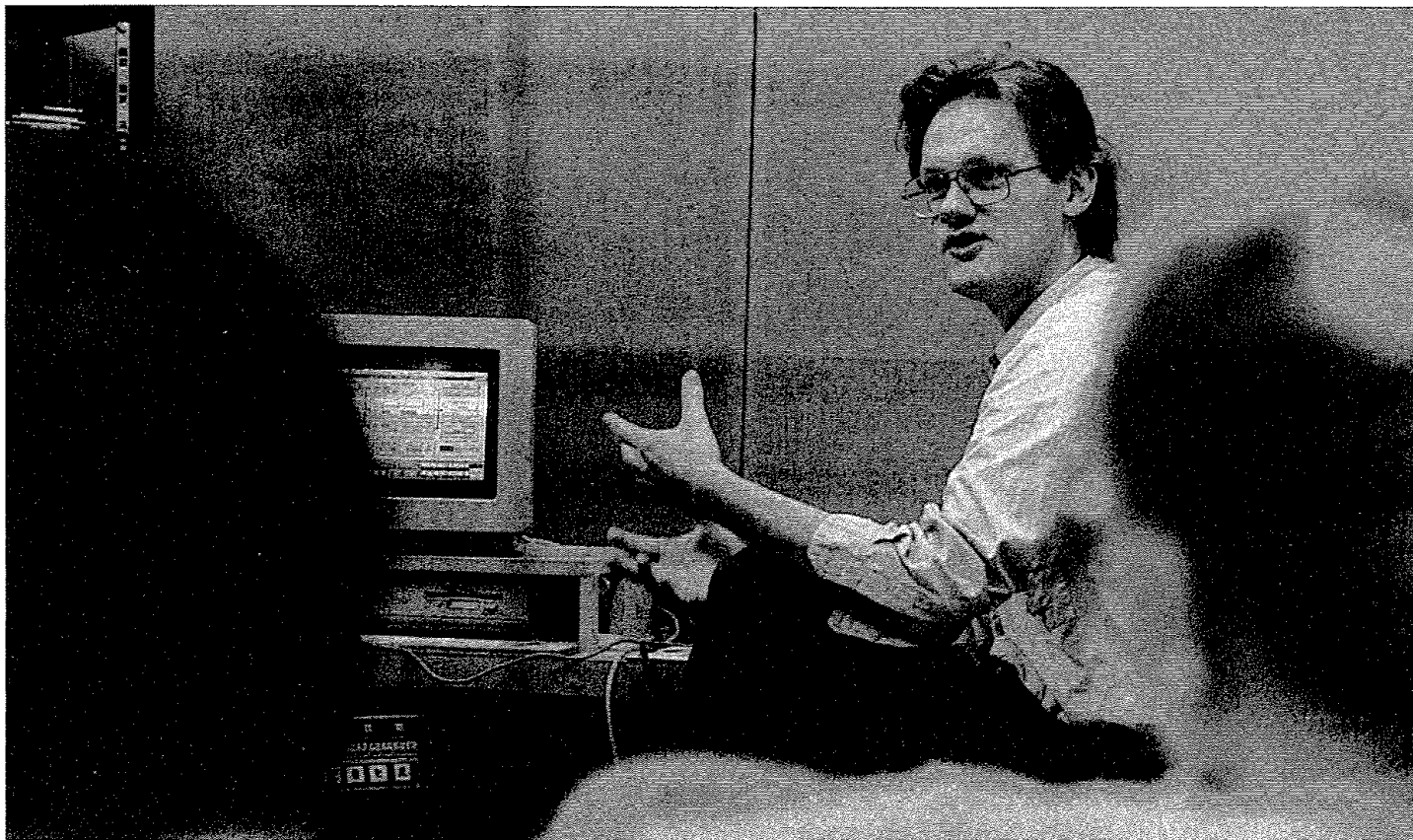


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TAPELESS SYSTEM WORKSHOP

David Taylor reports on the HMYPT seminar at the Royal National Theatre



Paul Groothuis, sound maestro at the Royal National Theatre, in action.

photos: Amrando Atkinson

The dynamic, but horribly under-funded Half Moon Young People's Theatre, ran a great series of lighting seminars, workshops and lectures in 1991 as part of a programme of educational sessions aimed at mid-career professionals and those earlier in their working lives who wanted to know more about a specific subject (colour, unconventional light sources etc) in a low-pressure laboratory environment. This year the HMYPT discipline was sound, and an interesting syllabus of short one-day or weekend courses was put together with characteristic efficiency by training coordinator, Dipak Mistry.

As a lighting designer and theatre consultant I was wearing my latter hat in 'mid-career' training mode and my former beret to allow me to be really ignorant when I participated in the Tapeless Sound Weekend, hosted by the Royal National Theatre and supervised by the National's resident sound maestro Paul Groothuis. The course was aimed at theatre professionals who had knowledge and experience of tape recording, editing and playback in performance environments and offered the chance to transpose the motivation for these skills to using tapeless digital sound.

Groothuis began the day by emphasizing that we were going to investigate the architecture of sound - that the workshop would not be about electronics alone, but rather how to use digital technology in theatre sound. Samplers have come a long way since the early eighties when digital delay lines allowed musicians and engineers to scan and hold sound for the first time in a digital form and then spit it out a little later. The fall in memory cost and the advances in silicon engineering have allowed for a much higher number-crunching potential to become available to the music market and then



Author David Taylor gets 'hands-on'.

ultimately the paupers in theatre sound departments. The higher the sample rate, the better the sound recording and reproduction, but the greater the cost in memory.

The Akai samplers used at the National Theatre and made available for our experimentation during the workshop used 16 bit technology, and the algorithm of sample rate, sample length, memory and resolution soon became clearer as the 'problems' of digital sound recording, such as quantisation, harmonics and aliasing were identified, discussed and demonstrated by Paul Groothuis.

Sampled sound is ideal for effects playback in the theatre. The Akai S1100 digital samplers we used during the workshop were able to offer 190 seconds of 'tape'. Sounds could be sampled in mono or stereo (with memory overheads) and then edited using the unfeasibly small LCD screens on the front of the S1100. If lighting designers had to manipulate all their crucial data by staring at a three inch by one inch LCD panel we'd have thrown in the towel by now.

Having recorded the sound, edited the rubbish from the beginning and end of the sample and played it back a few times the digitally dextrous operator assigns the effect to a keygroup. Thus we scooted off into the wonderful world of MIDI - the system for the foreseeable future of coordinating and triggering sound, lighting and other effects in the theatre from a central processor. MIDI control was developed by musicians and thus is ideally suited to the manipulation of sounds and effects. The Akai only really needs a trigger switch, but adding a keyboard gives the potential for much more.

'Tuning' effects struck me as being the key advantage for digital sound in the theatre. Shifting the pitch of an effect is akin to dialing a colour with a remote-control effects spotlight -

one can shift the sound until it is exactly what the director wants. Sitting in the auditorium alongside the director with his 88-key MIDI keyboard the sound designer screams artiste with every move he makes. The MIDI piano is ostensibly only an 88 key switchbank but it does add cred to the sound designer that the lighting designer, thanks to Richard Pilbrow's numeric interface to the memory light console, sadly bypassed in favour of a more technical approach.

The MIDI sound designer marks up his keyboard with his effects groups - perhaps, as in our exercise for the workshop, with an octave of thunder, another octave of pealing bells and seven different dog barks available at the touch of a key - and assigns other properties such as routing and effect level to the keys. For playback in rehearsal or even performance the operator only has to touch the key to retrieve the digital effect at the right pitch, and correct volume level to a particular spot effect loudspeaker in the stage or auditorium.

Paul Groothuis subscribes to the school that even removes the sound mixer from the equation, relying on preset routing and volume set in the MIDI programme.

The second day was spent experimenting with the next plane of digital sound, where complex effects sequences are programmed into a micro-computer sequencer program. In this instance it was the RNT's Atari running Steinberg QBase allowing 16 tracks of sound effects each of which can be allocated with triggers, volumes, pan positions, routing and pitch (within the keygroup). We were able to mute tracks as if working with a mixing console, and were able to realise the dubious joys of quantising - teasing the effect or music into being exactly on the beat (Can we use this to process all those DSMs who always fail to get the 'go' on the right cue?).

Throughout our discussions and hands-on experiment Groothuis brought us back to reality with the question: "What is it I am trying to do here and will the audience understand it?" It has to work without doubt for all the audience or else it should be cut. Groothuis and the National sound team constantly rove the world recording real sound into DAT Walkman recorders. But most of their time is spent transposing, manipulating and teasing the sound into a form that works in performance in the theatre.

For playback we were advised against running sequences from the QBase sequencer. Groothuis will take the completed sample sequence - often a stupendously complex array of different pitched effects and sounds - and record the output of the S1100 back into the sampler as a stereo mix. This option or the mixdown onto tape cartridge or 4-track 1/4" tape reduces, he feels, the potential for sound effect disaster in performance. It is a last nod in the direction of conventional technology, but, despite this final insecurity, during our weekend workshop where we were able to learn enough to push the limits of our imaginations a little further in sound terms, none of us saw a single piece of conventional recording tape.

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CREATION AND COMMUNITY

Ruth Rossington visits multi-disciplined design experts Arf & Yes in Belgium



Lighting the launch of a new Apple computer.



Arf & Yes going live with the Om Te Zien TV Special, the studio version of which was featured in our March issue.

With Brussels the centre of the EEC, Belgium itself often appears to be the silent partner in the Community, perhaps because reticence is a national characteristic. Activities seem to revolve around the three major cities, Brussels, Ghent and Antwerp. The former is famous for being the home of the European parliament - flower-bed of EEC directives, but more significantly (in my book at least) for successfully marrying hop with water to create Stella Artois lager; the latter for its port, and Ghent, of course, for its burghers.

My undertaking in this industrial outcrop in northern Europe was to discover more about Arf & Yes, a company making rapid inroads into a number of markets, and in particular lighting for television. Surprisingly, Arf & Yes opted to steer clear of Brussels and settled for Ghent, and with good reason. Straddling numerous crossroads, it's an ideal location from which to operate an international business. If this weren't reason enough, the city has further assets. Unlike the major capitals, space in Ghent is not at a premium - Arf & Yes wanted space, and space is what they have. The offices are the second floor of a large warehouse on the west side of the city. A creaking lift delivers you from one world to another as the ageing facade is transformed into a very modern, nineties style office environment. The whole floor is open plan, there are no partitions, everyone can see and hear what everyone else is up to, and with deliberate motive. Arf & Yes have re-thought the business process and redirected it to concentrate on human resources rather than hefty management structures.

Under one roof the company combines several creative disciplines. The first is industrial design, the second lighting and set design, and the third the design and conception of corporate identity. This treble symbiosis, whilst it might appear to be a weakness in terms of diversification, is actually the strong point from which originates the skill to combine concepts with real practical knowledge. Before tackling the main interest of this magazine, it's worthwhile taking on the other facets of the company.

With product design, the company advises on product range, packaging and sales support of new products. Many of Arf & Yes's products are already in the marketplace, most notably their range of tennis racquets for Belgium manufacturer Snauwaert. Currently they're working on further enhancements to the tennis racquet and a redesign of the bicycle and, though my offers as test pilot were politely rejected for both, I wouldn't mind betting that these are going to become commonplace accessories for every sporting enthusiast.

On the corporate identity side, Arf & Yes acts as consultant to companies on the creation and promotion of image, advising on house style, product management, institutional advertising, external and internal planning and customer service. To namedrop for a moment, Winchester, well-known manufacturers of rifles and shooting accessories, have recently had their image revamped at the hands of Arf & Yes and have gone from John Wayne to high tech in one easy transition.

And then there's the lighting. But I'm going to save that for the moment, because there are further interests to probe.

What I haven't made clear in my preamble is that the company consists of just six people, with

an average age of 29, and with that comes the freshness of approach that you expect to accompany youth. However, this relatively tender business age is matched by a wealth of experience that can only be the result of an early start and a meantime of 36 hour days.

The key, if you're still desperately trying to unlock the combination, is to be found with the three partners who formed the company and who represent the three corners of the triangle. Giovanni De Schampheleire is managing director and previously worked as an independent consultant to various multi-national companies; Ignace D'Haese is a lighting designer whose apprenticeship was served at EML and Stageco, two of the largest entertainment industry companies in Belgium; and Ronny De Gruyter is an industrial product design graduate who worked for some years for various furniture and product design companies. Add to these three lighting directors Dirk De Clercq and Michiel

Milbou, and office anchor Petra Van den Wyngaert, and you have all the components in this most successful of equations.

My time in Belgium was divided between visiting the company's various lighting projects and learning more about the operation from Giovanni De Schampheleire.

Arf & Yes are well-known in Belgium for their work with lighting and this year alone have worked on many major projects for the two TV stations (one state-owned, one commercial). They have built up a tremendous expertise in the presentation of rock music on the broadcast medium and now aim to decant that knowledge to the international rock scene. Their workload covers at least five shows a week for the commercial channel, as well as the occasional special. Whilst in Belgium I travelled with Giovanni and Ignace to various recordings, both live and on tape, and what struck me most about the lighting and the operation as a whole is the

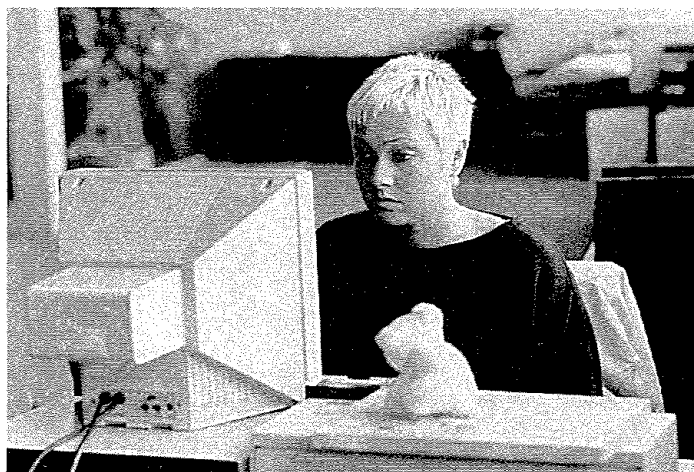
uniformity of approach, and the focused outlook that results.

In essence what they do is not that different to what most lighting companies do, but the attitude that prevails adds a different edge to their work. In terms of lighting this has meant that the company conducts the complete production from the basic idea to the logistics and realization. At presentations they don't submit an equipment list and a verbalised concept: they go armed with scale technical drawings of lighting and rigging mostly drawn freehand by Ignace, and renderings of the various staged lighting and set looks drawn by Ronny - in fact a presentation that is as close to the final thing as is humanly possible and all produced in-house.

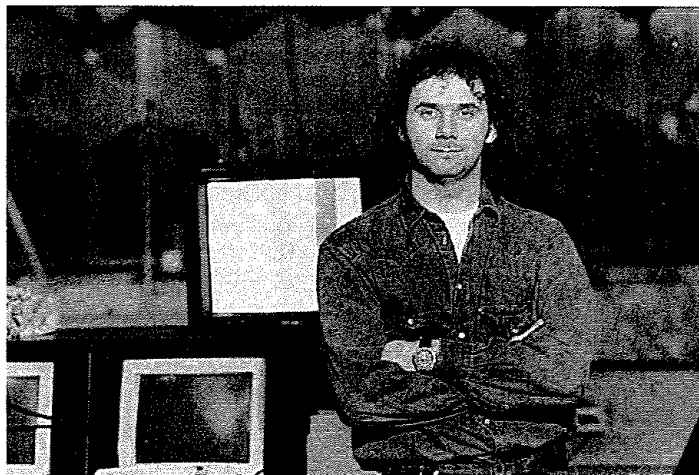
"We have to motivate clients to spend money, so we do the best we can," explained Giovanni. "A lighting plot costs a lot of money, but nobody can read it. The whole thing takes place within



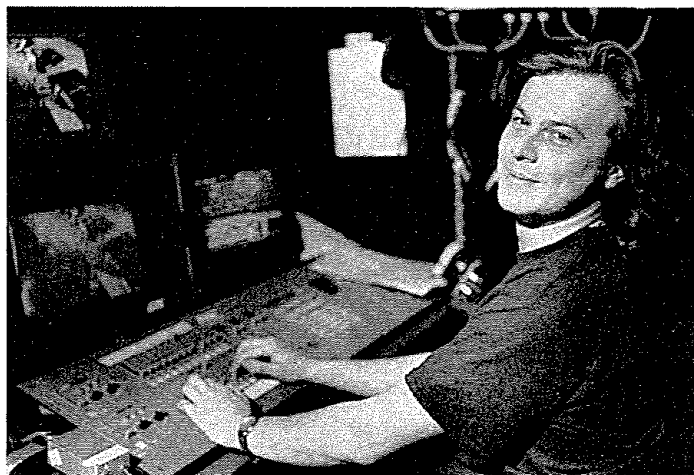
Giovanni De Schampheleire, managing director.



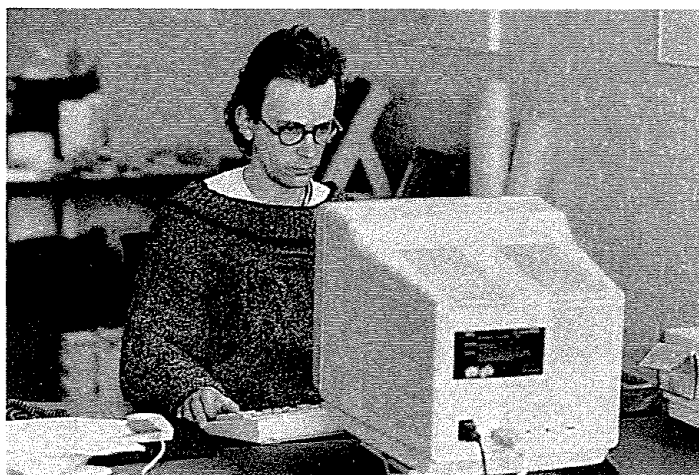
Petra Van Den Wyngaert, secretary.



Ignace D'Haese, lighting designer.



Michiel Milbou, lighting director.



Ronny De Gruyter, product designer.



Dirk De Clercq, lighting director.

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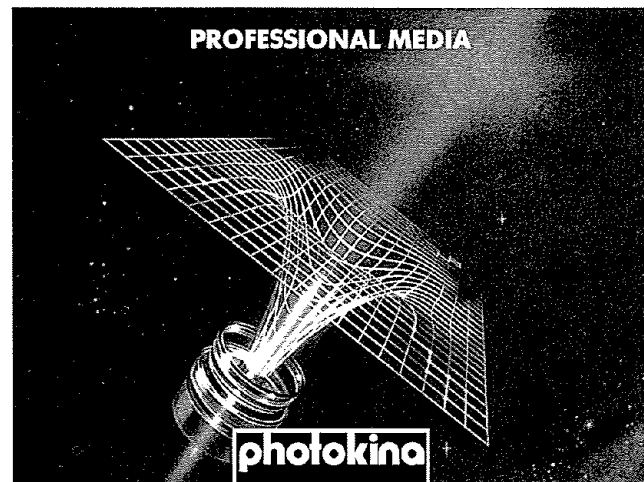
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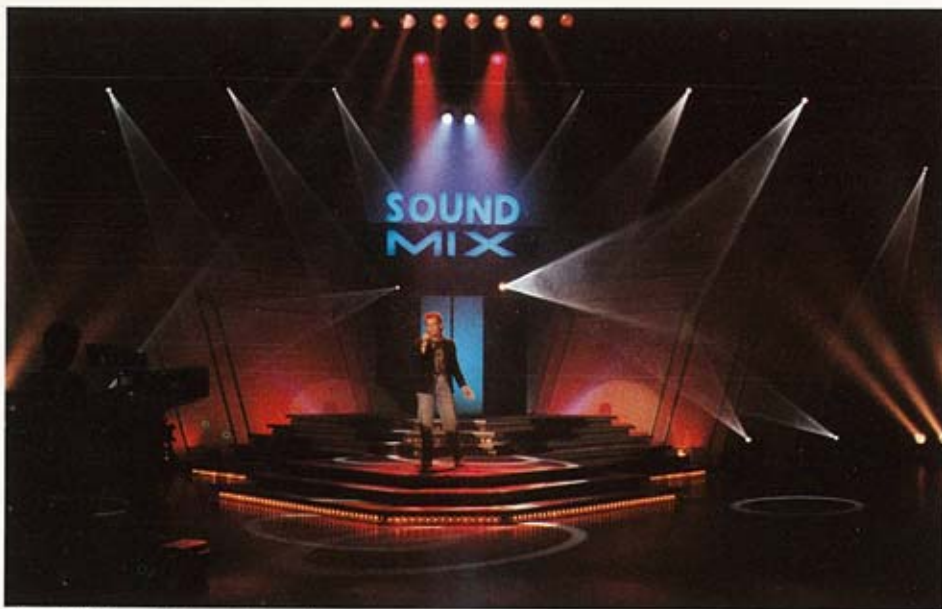
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'Sound Mix' - a Belgium TV regular.

a couple of days. Since very few people have knowledge of technical drawing, we do it all ourselves, because otherwise you never know whether it's good until you get there and then it's too late in our case." Ignace even plots all the rigging points himself to cut down on the unknown elements. They invest time and money and the return is often theirs for the taking.

Clearly there are differences between studio and live concert lighting. "With TV, lighting is very sensitive. It's not like a normal live situation, the distance and angle become much more important, and the colours and looks have to be geared to a different medium," explained Ignace. And yet Arf & Yes have managed to transfer the feel and movement of the live show to the relatively sedentary confines of the studio.

The company's lighting designs tend towards concentrated colour washes which create a very saturated, very strong look which is fairly uncommon in TV, but it works. For instance, the talk show 'Luc' is lit with very dark reds, blues and greens which make the UK talk show 'Wogan' looked washed out by comparison. On all the shows Arf & Yes work on, most of the equipment in use is supplied by EML who in turn sub-contract a certain amount from Samuelsons, including Vari*Lite's. Colormags, Super Scans and Molefays all feature in the inventory, as do Celco and Avolites boards. Any one of the three lighting directors will run the boards. Giovanni: "I don't believe that individuals can be creative constantly. It's good to combine creative input which helps maintain the profile much longer. The framework here offers diversity and flexibility without one individual constantly having to play star." Every piece of this jigsaw is as important as the next. The downside of this approach, if there is one, is that one person doesn't get away with all the honours. Still, egos aren't to be massaged at A&Y. Aside from that, the upside is that three lighting designers can work together and interchange roles and ideas. Through cooperation they are able to reach much faster conclusions.

It's clear that the company have developed their own corporate culture. Everybody is free to come and go as they choose, provided the work is done. Giovanni again: "If people are enjoying their job, it's good promotion for the company. Arf & Yes is about the right people with the right skills combining into a marketable product."

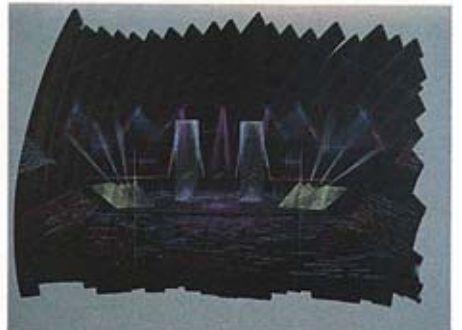
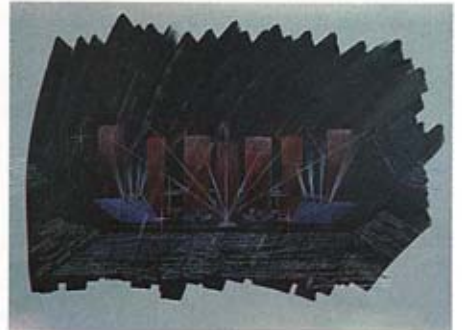
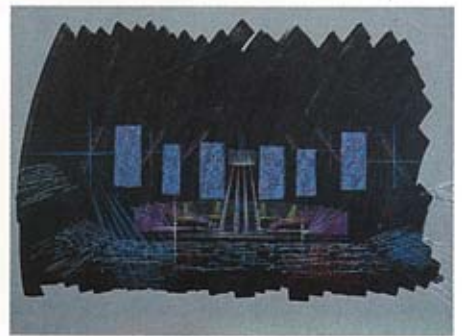
Behind the apparently liberal regime is a steely industrious spine, which is the pivotal feature from which emanates all things good. Put A and Y together and it spells creativity - which

is what they excel at, and more annoyingly for us talentless plebs, in every area. In many of their lighting projects, they'll have designed and even built the set. Most of the furniture in their office has been designed and made by them, including the main oval-shaped conference table which sits on a raised platform in the centre and is designed so that everybody can see everyone else, without leaning round others, right down to the television/video stand which remains upright courtesy of its webbed feet, and which is now available for sale in Belgium. Piles of photographs sit in a corner - a well documented record of their work and the output of the company's own photographic studio.

Isn't this all too much for six people? "You can try to do too much and diffuse your efforts. We have to be as free as possible to design and create, therefore we have a need for people who will free us to do this, and that's why our actual bookkeeping is done elsewhere." Giovanni feels that the creative process wouldn't be so one-directional if financial concerns were continually represented, albeit in human form, in the office. But don't be fooled into thinking this leads to a naivety about money. "Everybody should be active in the process of making money. People are our biggest asset."

One of the main features of the company is languages. Everybody understands at least three or four languages, a versatility which is again part of the corporate philosophy. To sell the concept of creativity in a third or fourth language is quite a feat - and not to be experimented with if you don't know your yahs from your elle beau.

The interesting part of this company (apart from its name, the criteria for which was that it has no meaning, yet that it contains a recognisable element in many languages) is not its physical output but the motivation and philosophy which lies within. A & Y is a company that works with concepts. "It's a very specific way of working which is probably unique," explained Giovanni. "The main feature is to take a concept and re-work it. There is much more a need for that than there is for pure styling which is much more subjective. You can't market a product that is styled for the whole of Europe, but you can a concept. Benetton promotes a concept rather than a style - they have a coherent approach for the international market which promotes the Benetton image. You can't sell what's made for Italy in France or Britain, but you can sell an image and attach to that a product or service. The future lies with company's who will create an image or label and then franchise it to those who reflect that image." Advanced theory?



An example of Arf & Yes' approach to client presentation.

Maybe, but the path of logic cannot be denied, and who knows what the next decade will bring. If this view is right then the face of corporate business is about to be repainted. The future of large companies must surely be in question as activities splinter to create small enterprises, highly specialised and feeding off an increasingly sophisticated communications network. What A & Y provide is a service that's unaffordable as an in-house operation, and a level of resource that would be difficult to harness in any other way.

UK companies could do a lot worse than to look to the examples being set by their European counterparts. If Britain doesn't recognise the business potential of Europe and start to address the barriers of language and attitude then we are certainly going to be the poor relation in the EC community, no matter how exportable our expertise and products are. New-style companies like Arf & Yes are almost certainly set to take the initiative.



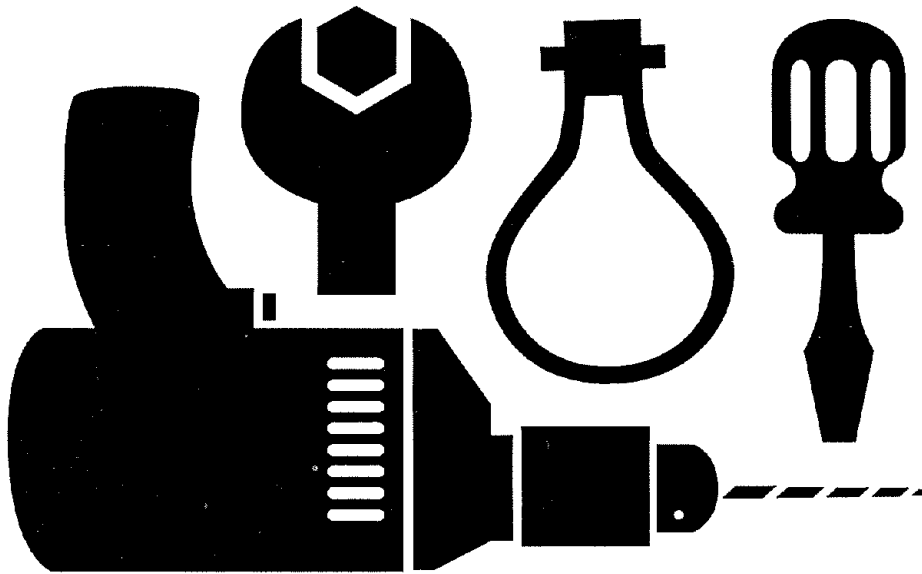
Approach to a corporate identity: a design by Arf & Yes for Wit & Clover.

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ON TOUR

Catriona Forcer

Neil Diamond

Sydney Entertainment Centre

LD: Marilyn Lowey

After an absence of 16 years, Neil Diamond returned to Australia with a sell-out tour. The lighting designer was Marilyn Lowey, who's worked for Neil since 1980 but is still the most recent addition to the tour entourage which is affectionately described as a 'family'. As well as working with artistes such as Liza Minelli, Cyndi Lauper, Glen Campbell and Bette Midler, Marilyn Lowey has achieved much recognition in other areas of lighting design. Industrial shows, spectaculars such as Disney on Ice, architectural lighting, award shows and film have all received the Marilyn Lowey touch. In 1986 she won an Emmy for outstanding lighting on the CBS-TV production 'Hello Again' starring Neil Diamond.

Today Neil Diamond is the only artiste that Marilyn will tour with, at his request. Everything else she sets up and leaves with others. She explained that a Neil Diamond show is always evolving and is definitely a hands-on type of tour.

There are two different stages for this tour - an 'end' stage and an 'in-the-round' stage for the USA, UK and Ireland. Marilyn describes her symmetrical lighting system as semi-state-of-the-art and feels that it is probably the only lighting system of its kind in existence at this time. It has effects built-in and is practical, reliable and easy to put together.

"I designed the round show first and it's interesting to see what works better in the round and then in the end," said Marilyn. "Using followspots on an end stage is a simpler application because when you're playing in the centre you're dealing with crossing beams and the problem of hitting the audience straight between the eyes. Once you put a show in the middle of the arena you're necessarily hanging lighting and sound from the weakest part of the building so you have to have a super structure that holds up the lighting system.

"It's a Morpheus system because I prefer the quality of light from a Pan Command spot. I think the beam is more consistent and purer. I like the rotating gobos, the colour system, the dichroic filters and the cross-fading colours. Everyone gets particular. The smoke we use is very important because I'm dealing with a vocalist who is extremely sensitive, as is the band. We use a vegetable oil that produces an extremely fine mist that doesn't irritate or smell. I have an Avo board together with a computer board which backs it up and 'dove-tails' the system."

Added to the system are lights built into the front



Neil Diamond at the Sydney Entertainment Centre, Australia.

edge of the stage. There are Colour Rays which are a xenon light channelled through fibre optic resulting in a light source that creates effects similar to a laser. These are positioned around the stage so that they come from different angles and they are particularly noticeable during the opening of the show. Lasers are used during two numbers, 'Bee' and 'Heading to the Future'. Marilyn describes herself as 'Laser Police' as she does not like to see them over-used during a show.

"People see green and instantly know they're lasers," said Marilyn. "I try to create different effects with the lasers so you can see different colours - in fact we use the full colour system with which we aim for neat looks, a range of effects and movement as opposed to just a harsh beam."

Marilyn has added Telescans to the round system. Essential to the show are the audience lights which are placed in the middle of the arena. One of the most important features of a Neil Diamond show is his relationship with the audience and if he can see them, they get that much more out of the show. The song 'Sweet Caroline' is performed entirely with the audience lights up.

Marilyn Lowey was last in Australia 13 years ago with Debbie Reynolds and she believes that the country has 'grown up' a great deal since then. This production uses no local equipment apart from the house followspots and Marilyn is keen to state that

she has worked with some of the best followspot operators in Australia.

"People here care about what they do," she enthused. "They take pride in the quality of work and that's a unique trait to have - especially coming from the USA! I count my followspots out and they 'feel' the counting, they 'feel' the fade."

Marilyn commented that it is rare to see females working within the lighting business in Australia but she believes that it will always be that way everywhere.

"People ask me if it has been tough but it's not something I've ever really thought about," explained Marilyn. "When I started, I just kept doing it and that's the way it is. You might work a little harder but if you're good, you'll get the work."

Catriona Forcer

Sound

Stan Miller and Neil Diamond have been together for longer than almost any other team in showbiz, a remarkable feat, given Stan is Neil's sound man. 'Longer' means 25 years. In that time 'The Neil' has only taken Stan aside twice for a talk. "One time he suggested I should try to get along with the musicians a little better!" This is advice every sound person sometimes gets when the wretched posturing talent (i.e. the musicians) overstep the



Lighting designer Marilyn Lowey - only tours with Neil Diamond.



Laser effects are used for two numbers.

mark! Stan's other incident with the boss occurred many, many moons ago, when he had to depart a performance just ten minutes or so before the end. This was to connect with a flight and the start of an Alice Cooper tour. Stan's assistant had been preparing for this day for weeks, and successfully (quietly) sat in for Stan. Three months later, Neil found out and summoned Stan. "Don't you ever do that to me again!" he said simply.

There's nothing obtuse about this relationship, Neil prefers the security of having people he knows around him. His band, after all, have been with him almost as long.

"It's fun watching the audience," Stan told me. "Some of them just don't quite know what to do! The last time they went to a concert was probably 16 years ago when we were last here!" Stan is a healthy 51 also, and most definitely a type 'A' personality, which means hyper. The guy is all over the place, organising the minutiae of touring life. "We're probably the best organised tour around, we have a load out meeting before every load out." They even have a daily newsletter, the 'Post Bugle Intelligence', which is crammed full of in-jokes and weird lingo.

One of Stan's tasks is arranging the carnet notes and import/export documentation for the 25 tonnes or so the tour air-lifts to each country. He has devised software for his Mac notebook 170, so with a hand-held laser scanner he reads the barcode label on each packing trunk as it's shifted. Stan the supermarket man, they call him. The software can then call up the individual serial numbers of each trunk's content, to foil any customs inspection. "We never get in any trouble this way," he told me.

Walking through the Entertainment Centre before a performance, I am struck by the permanence of the set, which looks like it's been installed for good, not just shipped in earlier. The



Stanley Miller - Neil Diamond's sound engineer.

rolling stage allows the foldback, backline and risers to be set-up while the light rig is prepared, then the stage is pushed by 48 sweating loaders into position. The monitor desk and racks are then also pushed, on their own dolly, into position. 16 JBL subwoofers are placed under the front of the stage, two caves are created at the rear, one for the guitar technicians and one as a 'fast change' room for Neil Diamond.

Some backtracking is necessary to establish Stan Miller's credentials here. Essentially if you think about sound (as sound reinforcement) in its present form, then Stan is somehow linked to it. The first person to fly loudspeakers was Stan. It all goes way back to the guy's college days, then the establishment of Stanal Sound. This was the late 1960s and bands like the 'Turtles' were Stanal sound customers.

Courtesy of Altec Voice of the Theatre products,

Stan stretched the envelope using the classic sounding 421 and 288 (prize to the first correct letter identifying these) in different boxes, always experimenting. Patrick Stansfield, Neil Diamond's production manager, once referred to one of Stan's earlier flown PAs as 'Stan's flying junkyard!'

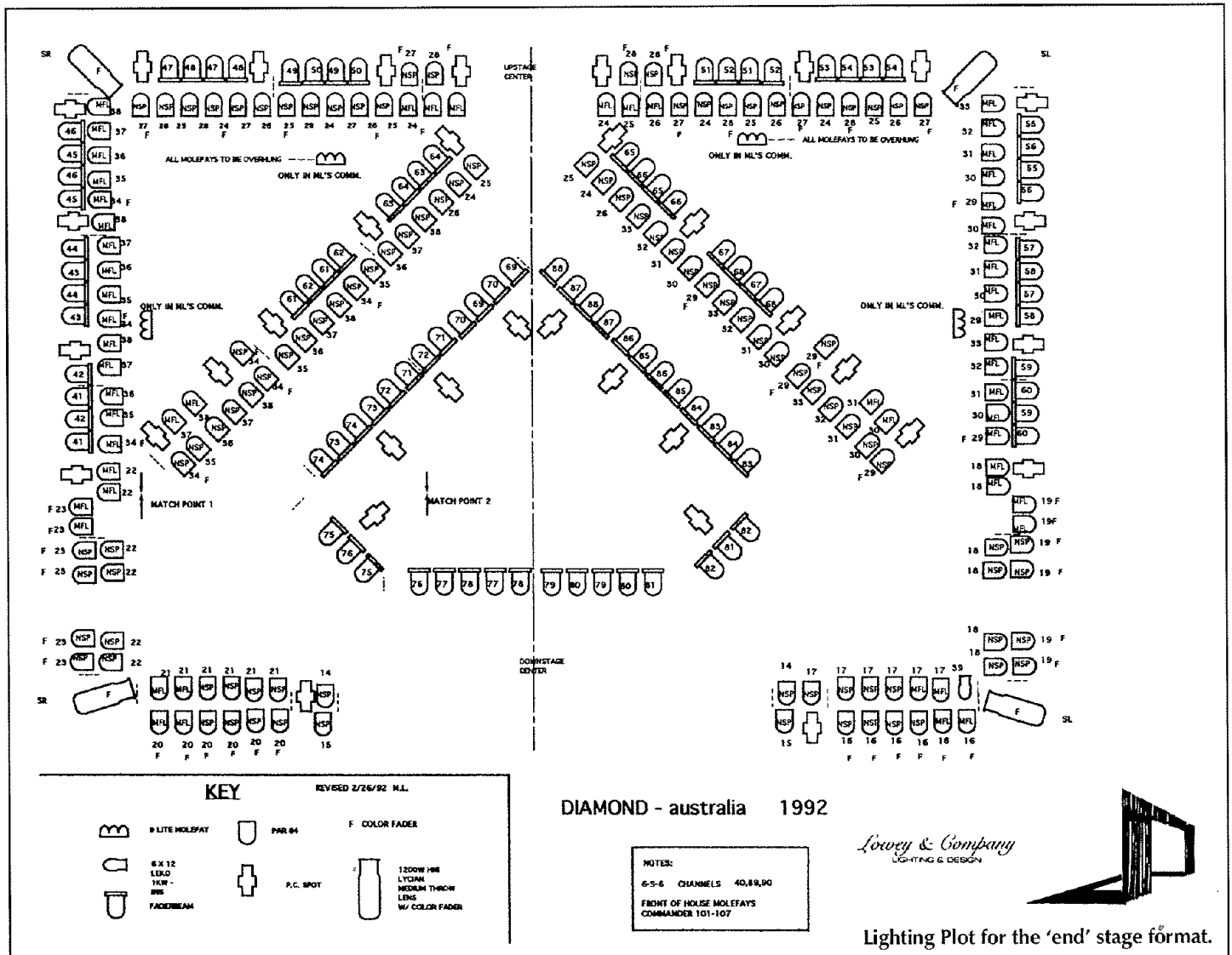
Remember the 'Stanley Screamer'? That's one of Stan's designs. In fact, Stanal Sound was sold a few years back to Maryland Sound Industries, who acquired a customer base, then the manufacturing part of Stanal was sold to JBL, who in one stroke got a complete range of Concert Series Loudspeaker designs. Stan had much earlier given Altec the flick and gone JBL.

Through the passage of time, it's always been Stan and Neil, although there have been other artists inbetween too. Bob Dylan is one. "We were in pre-production and he had a problem with the monitors," recalled Stan. "He told me: 'make it sound like the bottom of the Grand Canyon, like when I wake up in the morning'."

Stan toured here with Dylan in the late '70s, also John Denver. ("When John was doing big business.")

The creative partnership between Stan and Neil (I have permission to use Neil as a form of address by the way!) is of such intensity that when Stan suffered a heart attack during a pre-production session for a tour, Neil cancelled the tour. "Then he insisted my doctor come on tour for the first two weeks!" The whole Neil Diamond tour party is intensely loyal in a family sort of way, characterised by Stan's comment: "When we have a meeting with four or more people, for 10 minutes or longer, it's catered!" The pecking order extends to air travel, where Stan travels first class.

Sound is the reason we're talking to Stan, so looking at his set-up in the Entertainment Centre is enough to gauge the man's approach. The speaker system comprises 48 Clair Bros. S4 speaker cabinets, all JBL loaded. Three DLP wedges are



hung under each side for front fill, for the 'see-the-man-sweat seats'. "I don't file stuff down on the stage," Stan asserted. Three JBL 4866 boxes are atop the left and right S4 clusters, to project high frequency to the back rows. The neatly dressed stage front hides a wallop with the subs beneath. "Neil likes a musical sound energy to come off the stage," which translated means although the show is mixed reasonably quietly, it still kicks.

"We do get complaints about the volume, we're cognizant of the fact and we allow a certain amount of refunds." Stan takes his cue from Neil asking the monitor guy for more level. My associates who saw the show commented on the vocal projection of the mix, and were fairly uniformly of the view that Stan has mastered the art of a seamless, integrated sound.

Mixing consoles are a pair of 40 channel Ramsa S840s chock full of inputs. "I've rehearsed every contingency; I'm too old for emergencies." This is evidenced by the standby crossovers, with patchbay to bring them on-line. Not that the system processing should give any concern, Stan has bought his own processing in the form of JBL's new ES 52000 digital processors, which provide 50dB per octave crossover slopes with FIR (Finite Impulse Response) filters. Crossover points were set at 220Hz and 1kW for the S4s.

Another contingency Stan has planned for is the failure of a mixing console - be it FOH or monitor. To this end, he has three foldback sends returned to the FOH, a stereo main mix, and one of Neil's vocal. That way if one of his consoles crashes, he still has a show. A patchbay stands ready to route these three inputs to either console. Same at the monitors, Stan sends an alternative house mix and a Neil vocal down there, presumably so the monitor guy can run them in if his input chain fails, or even assign them direct to the EQ/amp chain if the desk carks.

Every single show is preceded by a soundcheck-come-rehearsal, at least half an hour to an hour long. "We even rehearse the rehearsals!" Stan told me.

Some Stan Miller-isms to finish off. Advice to young sound engineers: "Don't EQ for EQ's sake!" Advice to (dreaded) musicians: "Make room for what you play." Heed this, or Stan will find you and adjust your mindset!

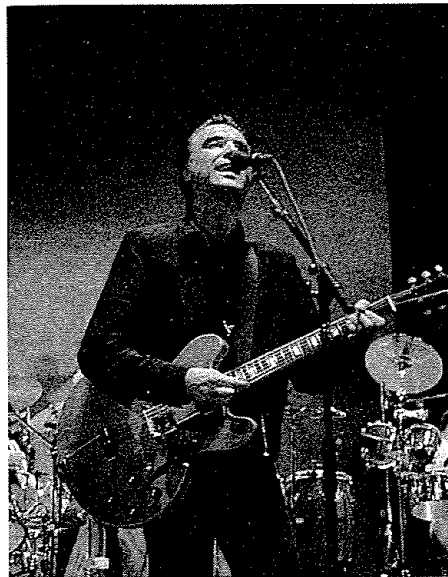
exclusive for L+SI by: Julius Grafton
Channels Magazine, Australia.

David Byrne Sydney Stage Theatre LD: Bruce Ramus

Although Bruce Ramus is Canadian his roots in the lighting business anchor in America, particularly Los Angeles. He moved to the UK five years ago where he started working with Vari*Lite and where he continues to work today. David Byrne is the first act that Bruce has designed for, although he ran part of the Tin Machine tour last year for the designer Willie (currently with U2). Bruce got an interview with David Byrne through the tour manager who also did Tin Machine and, despite stiff competition from five other lighting designers, he secured the job.

"I told David that I wanted to do a very minimal, fairly monochromatic show and that's exactly what he wanted," explained Bruce. "He works very closely with me and he wants to see every change that I do. He leaves all the specifics up to me, but he has an overall picture of what he wants to see and what he doesn't. He's adamant that the audience should not see any of the lights.

"I chose a monochrome set because that's what I'm into at the moment. I'm not saying it's any better than anything else, but it's different. I've grown tired of a lot of the shows that are a different colour for each song and a different look for the guitar solo as for the verse and the chorus. I didn't want to do that because I wanted to let the music talk and not the lights. I don't want people's eyes drawn to the rig at all. Both David and I wanted the attention on the



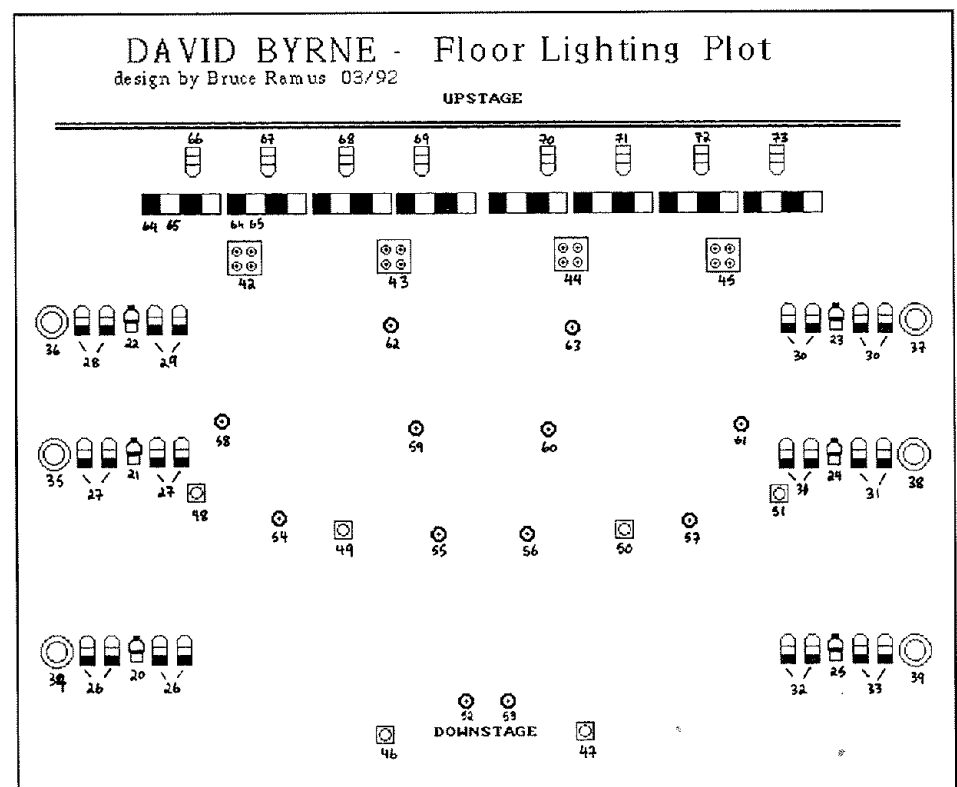
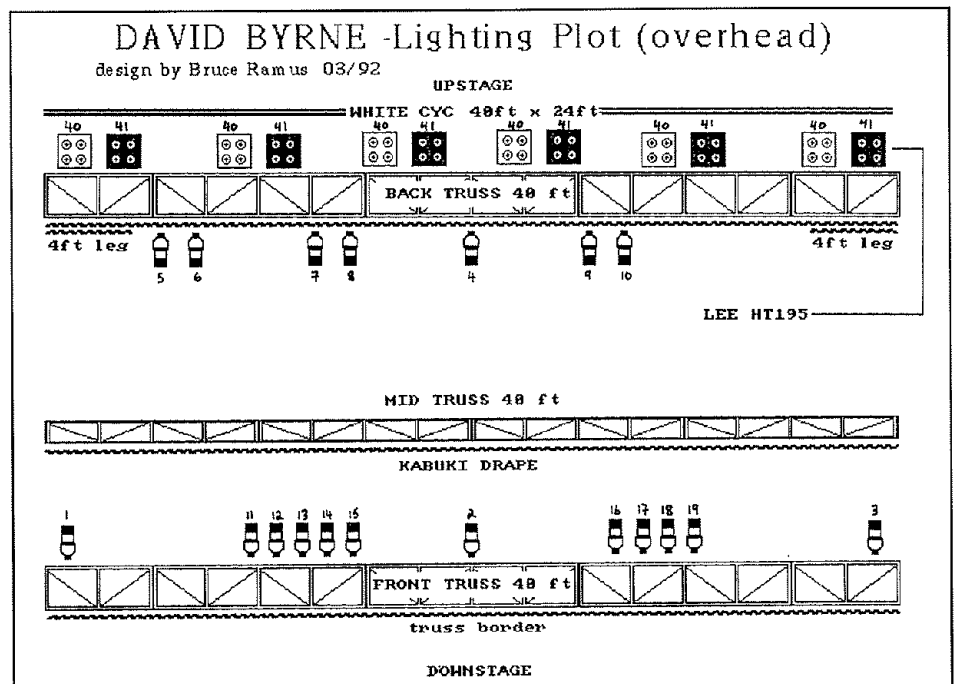
David Byrne at the Sydney Stage Theatre.

music and not the lights."

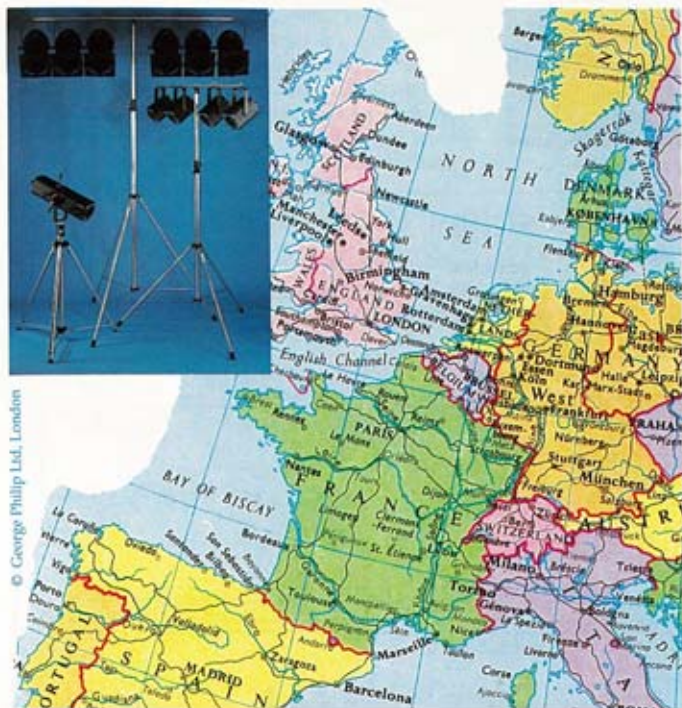
The backdrop to the show is a white cyc which is used occasionally. It is a fairly stark and static show for the most part with a few chases that are kept short. The actual look of the rig is very important to the show and all the lights are masked with black legs and borders. Bruce admits to being influenced by Willie whose rig for Tin Machine was even more minimal. Bruce has developed the theme to suit this particular artiste. The rig consists of 80 Par cans, six 5k fresnels, 25 lekos, eight groundrows, 12 MR16s and six Omnis although this is fairly flexible to allow for visits to unusual countries.

After a few warm-up dates in the USA and Canada, the tour started in New Zealand before reaching Australia. In the USA the tour carried gear with Upstaging, who Bruce claims did a spectacular job and were really on the case. In Australia the gear was picked up locally, by Jands in Sydney and Concert Light Systems in Melbourne.

"I think Jands are very busy and pretty stretched on their gear at the moment," said Bruce. "For instance I wanted a Celco board but they didn't have one available. However, the people they've



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David Byrne at the Sydney Stage Theatre.

sent down have worked hard to get the show where it is. This is our 11th show tonight and our fourth different lighting rig and desk, so it's taking me a while to get into the groove. Because it's so minimal it needs to be just right for every song. You need to put it up and leave it alone."

After Australia the tour goes to Japan for a week before a six week stint in Europe. Following that is a two week tour of the Middle East. Apparently David Byrne wanted to play Beirut but that fell through. Other gigs on the itinerary include Greece, Istanbul and Cairo. Bruce assures me that most of the people on the tour are pretty mad to do these gigs. The tour reaches the UK towards the end of July for three weeks before going to the USA for two months and then travelling to South America. In Europe the gear will be provided by Chameleon and Bruce will also pick up an assistant who will stay with him through the USA. This will be Lynne Ozone who Bruce describes as a very competent and creative tech.

"I think getting along well with people whilst on tour is at least 50% of the deal over technical knowledge," said Bruce. "It's important to be mellow and just get the job done to the best of your ability and not get involved in all the politics of the road. I'm not into all that - I'm only concerned about doing my job and creating a good touring environment."



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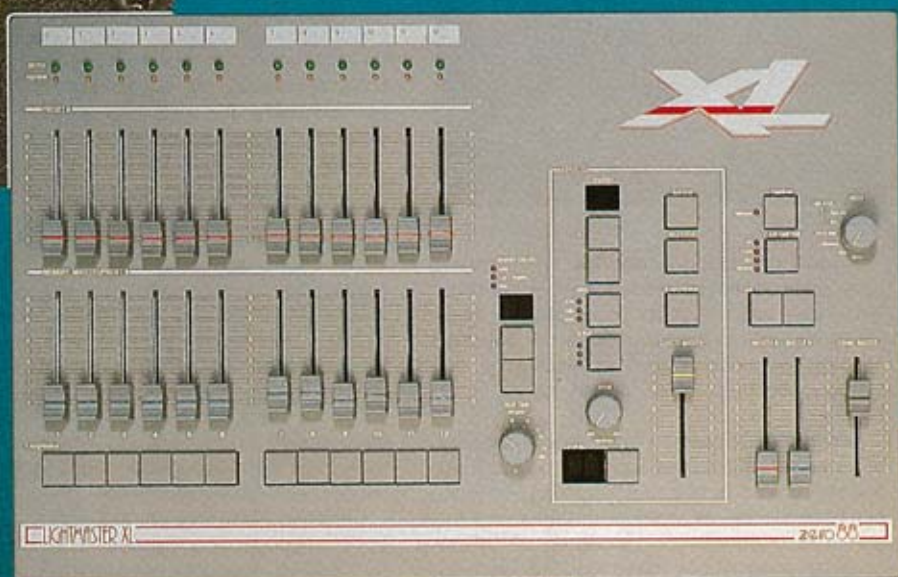
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PEOPLE NEWS

Trantec Systems Ltd, a member of BBM Electronics Group Ltd, have recently appointed **Alec Blake** as sales manager South-East to represent their ever-expanding range of DTI approved radio microphone products. His responsibilities will be mainly directed at the music business and installers in the South-East of England.



David Drouin.

Envotech, the Saffron Walden-based systems company, have appointed **David Drouin** to the newly created position of contracts manager. The appointment reflects Envotech's response to the growing number of contracts they are now undertaking in the fire and security industry. David Drouin was previously with McMillan Fire Alarm Systems and then with See Fire Systems where he helped set up the company's systems.

Peter Jostins has joined Soundtracs as technical sales manager involved with product training, support and design. His responsibilities will include lectures to audio institutes worldwide and managing the Soundtracs 'technical hotline'. He has a first class honours degree in electro acoustics and has written numerous technical articles for journals in Europe and America. Prior to joining Soundtracs, Peter worked for Solid State Logic.

Ian Lovelock has also joined Soundtracs as management accountant. He previously spent over seven years at Hays plc, a distribution and business services conglomerate.

Christine Hale, who started with Soundtracs in 1985 as purchasing assistant has now become purchasing manager, responsible for the department.

Ken Brown has joined Dreamhire as the new assistant hire coordinator, and joins Colleen Garton and Pete Towner in the company's

Willesden office. Ken, who was formerly office manager at Chrysalis Records, is also a DJ.

After a few months back on the radio, **Simon Cummings** is now back with Squire on a part-time basis. He will be responsible for all sides of the business from retail, where he will be looking to reinstate the open evenings for manufacturers and customers, to installations where he will be liaising with client and press.

After three years as European sales manager at Memotech Computers, **Christopher Vlassopolous** joins Owl Video Systems as marketing director, specializing in videowall and multi-media as well as the full range of products and services. Owl Video Systems are the concessionaire for Seleco Professional products and more recently the complete range including receiver monitors and HDTV projectors.

Laser Grafix, one of the leading UK laser suppliers, has recently appointed two new professionals - **Peter Goddard** B Eng Hons MSc and **Chris Porter** CG LI, to support the existing technical team. Since joining the company in July 1991, Ram Malocca, service and installation head of Laser Grafix, has extended the department to cater for an increased workload. Ram's team now totals five personnel with qualifications ranging from B Eng Hons MSc, and BSc Hons to HNC BTEC. Laser Grafix' highly technical team is currently integrating a Prisma Laser system into London's newest nightspot - Equinox in Leicester Square.



Brian Latham.

Brian Latham has joined the Shuttlesound sales team to help establish their West Penn Wire cable and University Sound product lines. Using his wide experience within the industry, he will be concentrating on developing the commercial/industrial sound contracting business.

Michael Fabricant, co-founder and formerly a director of British-based MBI Broadcast Systems before its sale to a US group last year, has been elected as Member of Parliament for the Mid-Staffordshire constituency. Prime Minister John Major congratulated Michael Fabricant at a luncheon last month where Michael promised to maintain his interest and association with the British audio and broadcast industry.



Susan Mullender.



Shirley Carrington.

Two new faces have arrived at Wigwam over the last couple of months. **Shirley Carrington** will be taking care of administration at the Hire Department, and assisting director Chris Hill. She previously worked for ICI. **Susan Mullender** is the new voice on the end of Wigwam's switchboard and will also be taking care of reception.

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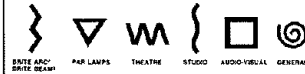
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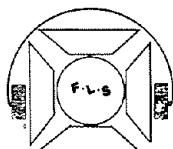
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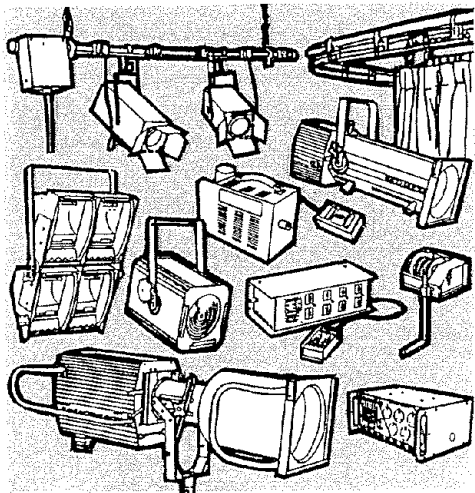
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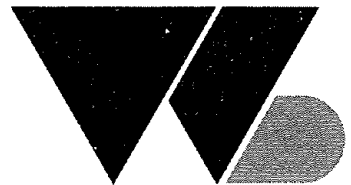
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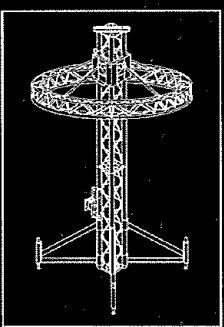
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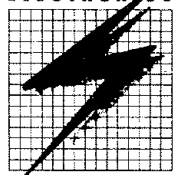
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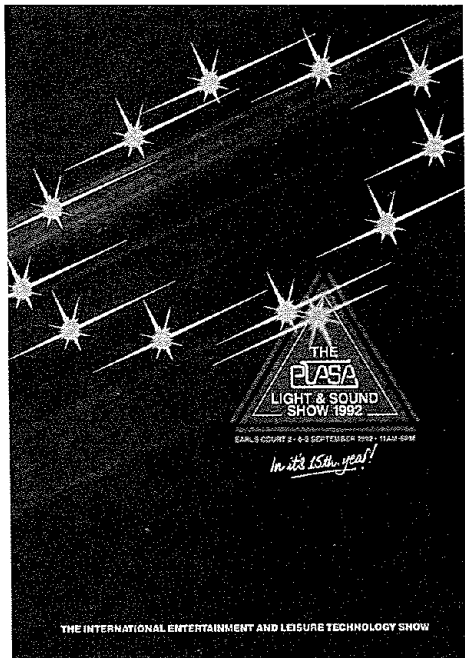
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VIEWPOINT

Julius Grafton Down Under But On Top

For years we Australians have been infiltrating the world's music charts with our growing musical exports, which last year generated \$100 million of our dollars in revenue. Now the Australian dollar is worth less than half an English pound, but still, this is an impressive feat from a small population base of 17 million.

It isn't just any regional musical flavour that's winning a way into north world wallets and purses either. Our musical exports run the gauntlet from Kylie and Jason, to Midnight Oil, INXS and Crowded House. Oh, and watch out for the Baby Animals. No, we like to get smug and gloat about our advanced prowess. Your overnight chart successes are just that. Ours have been around.

Across a giant continent our performing artistes travel from gig to gig, driving all day to another country town nestled next to a dry river bed under the only Eucalyptus tree for 200 kilometres. Chances are the gig is in an RSL Club, where four hours earlier the crew has arrived in an eight tonne pantech and a hire car, loaded the eight tonnes up two flights of stairs, and achieved a soundcheck deadline. At the end of the night they load out and sometimes drive several hours to the next town, crunching the odd marauding kangaroo along the way.

Broken windscreens and promises, chronic fatigue, speeding fines, back problems, low pay, bad food and saggy motel beds. That's the apprenticeship the typical Australian roadcrew member endures, which is sadly why we don't have a lot of female crew. This apprenticeship is so tough many new recruits try to make the grade doing speed and amphetamines. These people are the first to fall, along with those who 'hit the piss', to coin our phrase for a heavy drinker. (A heavy drinker in Australia is something those in the northern hemisphere describe as a total alcoholic!)

After a while, the survivors age a little and tire of the view of more mulga scrub through the windscreen. They meet another member of the unique and attractive population, usually (but not always!) of the opposite sex, and think about earning a bit more money, and enjoying a little more security.

The skills learnt from this background make Australian roadcrew inventive, tireless and loyal. Along the way production values are very high as well, with front line equipment as good as, or better than, anything else used anywhere else. Despite the tyranny of distance from the rest of the world, we leap on new technology. We also build equipment in Australia, engineering in the toughness that our extremes of temperature and shocking road conditions demand.

From this relentless touring regime come most top-line professional crew employed in Australia, including those in theatre. The career path for these people leads from touring to one of few positions in a theatre or civic centre or even working for a

hire company.

A few years ago, this career path led overseas. Now it seems our aspiring roadcrew no longer have the opportunities they previously had. For, despite Australia offering an open door policy to visiting roadcrew employed by touring artistes, we don't enjoy reciprocal rights in the United States.

One of our talented Vari*Lite technicians, Paul Kent, recently applied for a work permit to tour the US as Roxette's Vari*Lite operator. Roxette had used Paul during their Australian tour, and were obviously impressed enough to want him for America. Ominously, the application for an H-1 work permit was turned down.

Meanwhile, down under, we readily allow international crew to work for their employers on our soil. Just recently Prince and Neil Diamond toured here, both with entourages of around 70 people. Our Theatrical Employee's Union simply collect temporary dues from visiting roadcrews, forwarding the list to our immigration department who duly issue work visas.

The inequity has become more marked over the past 18 months with the growing tendency of (larger) international touring acts to bring most of their production equipment with them. This trend ignores the fact that here in Australia we have three large international standard sound and lighting hire companies, individually capable of absolutely anything imaginable. I can only imagine the B.Y.O. (Bring Your Own) trend is a product of laziness

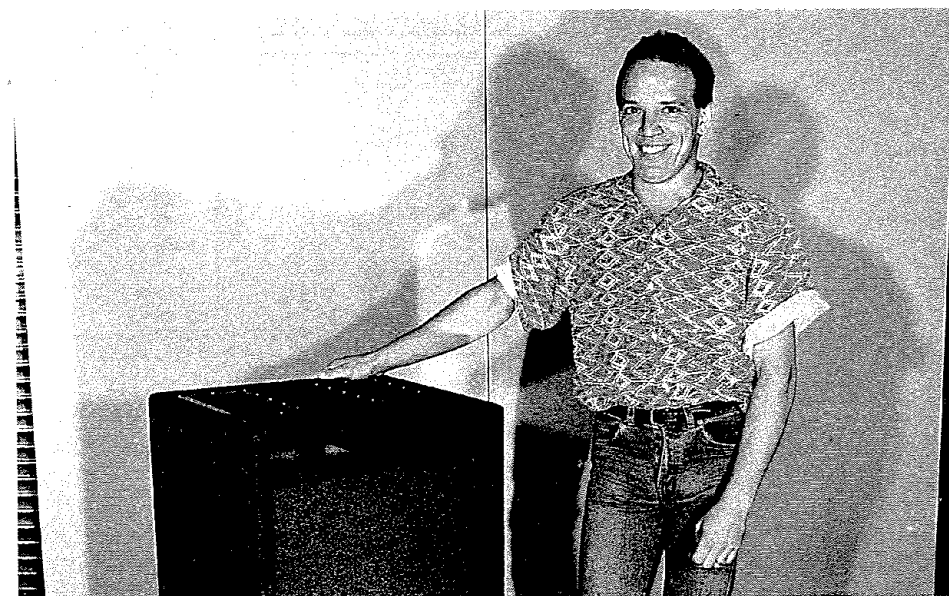
somewhere in tour pre-production, whereby an entire world tour is plotted and costed, with the not-inconsiderable costs of transport to and from Australia aggregated into the whole gross.

Until this trend became apparent, artistes on tour would plan Australia as a destination for essential backline and crew alike, leaving the PA, light rig, stage, lasers and video in the Northern Hemisphere. Doing so resulted in not one negative concert revue nor a single dollar lost in ticket revenue, and on the other side of the ledger actually saved money. Hiring Australian production is far away cheaper than freighting American or British production down under.

Part of the problem relates to the insecure nature of musicians, who think they like to use exactly the same equipment night in, night out. With sycophantic management, they get their way, despite the fact it's just cost them a sizeable slab of nett profit to ship the whole box, dice and kitchen sink down under. Any artiste management with the true interests of their act at heart would carefully cost the exercise then confront the fragile egos and reassure them they actually won't notice any difference when they step onto stage in Sydney after doing Seattle three days earlier.

Meanwhile, those of us who've learnt the ropes, acquired the skills, and made this industry our chosen careers, wonder how the hell we're going to provide an incentive to those starting the whole curve. Aside from diminishing opportunity overseas, many of our more talented touring crew are losing work to international crews, using equipment shipped halfway around the world.

We can't sit back and endure this, for once our easy going and accepting nature is about to change.



Julius Grafton is editor of Channels Magazine (published by Jands), Australia's only regular sound and lighting publication. He has alternately enjoyed or endured - depending on his mood - 20 years in the business, initially running a psychedelic lightshow, then a sound and lighting supply house. In 1986 he established Australian Monitor, who manufacture Mosfet amplifiers, before a mid-life crisis drove him to abandon all and seek refuge in the bush. This phase didn't last long, proving once you've worked in the biz, you're hooked for life!

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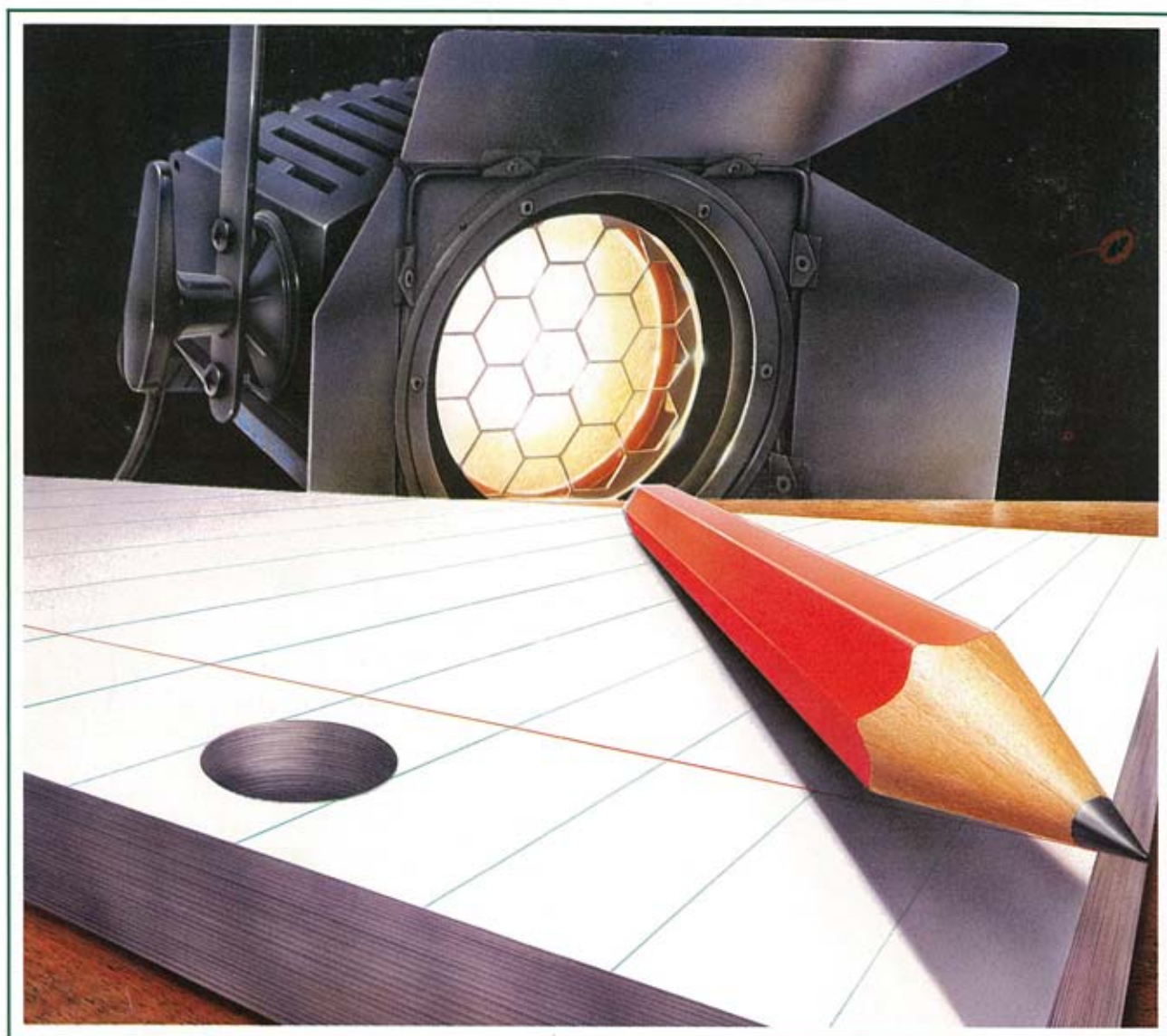
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