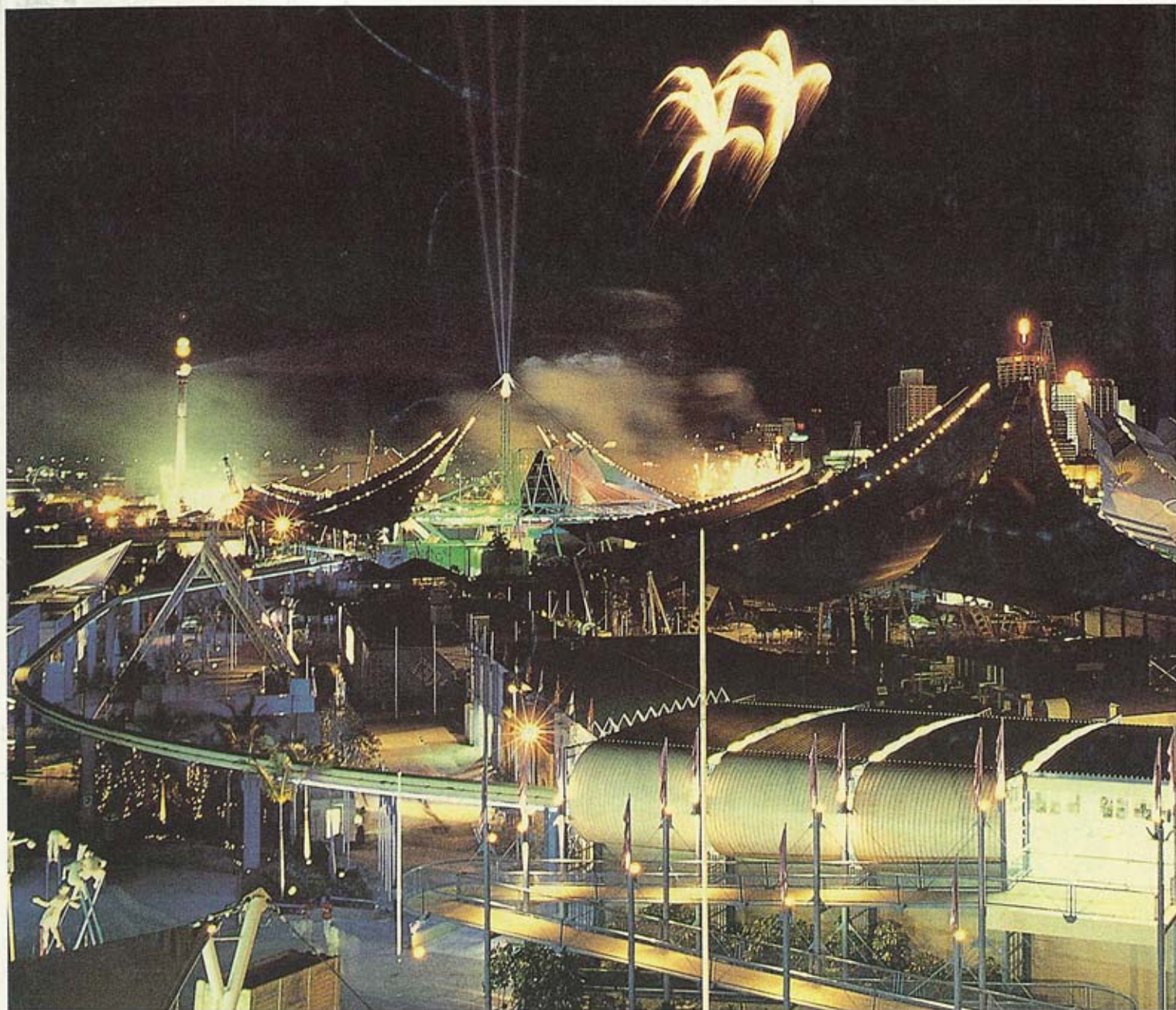


LIGHTING+SOUND

International



EXPO NIGHT - SEVILLE 1992

- Jim Douglas and the Quiet Revolution
- Tony Gottelier and Society Talk
- Court Acoustics and Freudiana
- Company close-ups: Cerebrum, Lighting Dimensions (Eire) and Wilkes Iris Diaphragm
- Three-page PLASA Feature
- John Offord in Seville

FEBRUARY 1991

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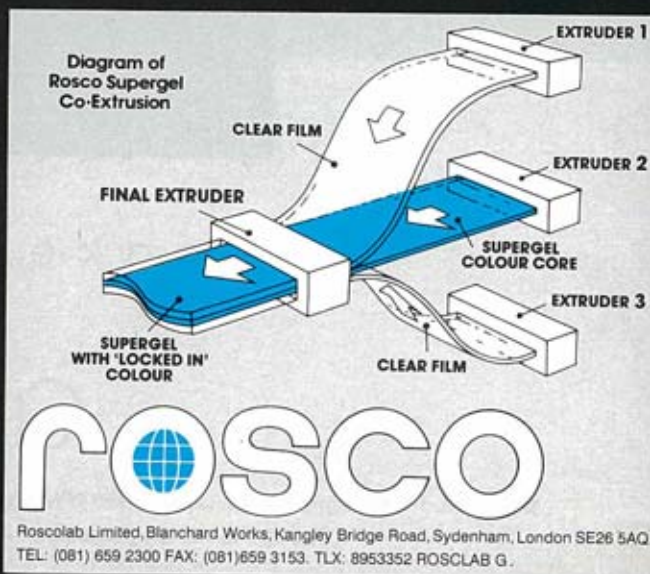


With a cast of more than 100 Supergel filters including 82 colours from Bastard Amber to the deepest Zephyr Blue and 21 unique diffusion materials, the Supergel range is more than twice as long as it's nearest (or should we say it's furthest competitor).

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luminaire

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THE PLASA
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PLASA

Light & Sound Show 91

The 1991 PLASA Light & Sound Show, to be held at Olympia 2 in London from 8-11 September, is now officially on sale. Billed as the premiere international entertainment technology show, the PLASA exhibition is now firmly established as one of the leading events for entertainment equipment worldwide.

Sponsored by PLASA, the 1991 exhibition is the thirteenth in the series and looks set to attract an even wider audience from the growing leisure and entertainment industries, with the promotion budget showing a significant increase.

Kevin Hopcroft, PLASA's chairman, commented: "The entertainment equipment industry is continuing to expand and supply a wider range of markets. The PLASA Light & Sound Show reflects this by appealing to buyers across many disciplines, both from the UK and overseas, by showing one of the most comprehensive collections of new products and technology within a single venue."

At last year's PLASA Light & Sound Show, visitor attendance was up by 30 per cent to 7,912, with 15 per cent coming to the show from overseas.

The new organiser, Philbeach Events Limited, says that much of the show's promotion will concentrate on attracting the major leisure venue operators from the UK as well as those abroad. Simon Boyd, exhibition director explained: "The PLASA Light & Sound Show has clearly established a strong position on the international show calendar. The visitor statistics from 1990 were very impressive indeed. It is our aim to maintain that level of interest while increasing the number of top buyers at the show from the key sectors of the club, theatre and leisure industries."

As in the previous two years, the PLASA Light & Sound Show 91 will be held at one of London's top exhibition venues, the newly refurbished Olympia 2, Kensington. Already the organisers say that initial response, to date, has been very promising and so early booking for premium space is advised.

Full details of the PLASA Light & Sound Show 91 are available from: Philbeach Events Limited, PLASA Light & Sound Show, Earls Court Exhibition Centre, Warwick Road, London SW5 9TA. Contact Tanya Simmons or Simon Boyd on Tel: 071-244 6433.



Simon Boyd.

Cadac in New York

Clive Green & Co is to supply a Cadac 'E'-type console for the New York production of Miss Saigon, due to open in April 1991. With the casting debate for the US production now resolved, the show will include a 70-input Cadac desk, as well as the leading English actor, Jonathan Pryce.

Equipment for the show is being co-ordinated by ProMix, the New York/Florida-based professional sound service, who are working with Clive Green & Co for the first time. Lewis Mead, president of ProMix, recently visited the UK to meet the Cadac team.

A.C. Lighting Growth

David Leggett, managing director of the company has reported an overall growth of 6.6% for 1990. He told L+S I that the company had performed very well recently and although UK trade was a little down on 1989 levels, export had increased by 30%.

He said he was very optimistic for 1991 due to the new products the company had secured for European distribution, namely 'The Event' lighting console from Jands, 'Vision' stage luminaires, 'Scroller' colour changers from Wybron and the 'Commando' motorised tower.



Luciano Salvati, formerly sales manager with Italian-based Clay Paky, has now taken a similar post with Coemar of Castel Goffredo.

Washburn (UK) Limited has announced its appointment as Rocktron Corporation's UK distributor. Rocktron products include the famous HUSH noise reduction system, programmable guitar and bass pre-amps + professional signal processing for both studio and live sound applications. Washburn (UK) Limited will also be handling Rocktron's RSP Technologies range.

Electrocomponents plc, recently announced its French operation Misco France commenced trading on 7 January 1991 from its location at Bonneuil Sur Marne, Paris. Initial interest from French business is very encouraging.

Expo Musica, Madrid has been re-scheduled to run from the 13-17th April, and not the 16-19th May as previously published. For further details contact IFEMA in Madrid on 470 1014.

Celco join Electrosonic

Celco Limited, the leading designer, manufacturer and distributor of lighting control and automated luminaires for concert, television, theatre and presentation applications, has joined The Electrosonic Group to form a new division; 'Celco, the Live Entertainments Division of Electrosonic'.

Celco Limited, which was formed in 1981 to produce lighting control equipment for the entertainments industry (with a particular bias towards rock 'n' roll), will complement Electrosonic's 26-year history as a manufacturer of light, sound and image systems for business communications, leisure and environmental control.



Keith Dale, pictured above, Celco Limited's former marketing director who heads up the sales and marketing team with Colin Whittaker, told L+S I: "Celco now has access to Electrosonic's vast resources in research, development, and manufacturing. This will enable many new and exciting products to be developed as well as ensuring that existing R&D projects are taken through their final stages to reach manufacture and distribution."

"We expect to move into Electrosonic's Hawley Mill base at Dartford in mid-April, and apart from Tim Bridle who is leaving the industry, all former Celco directors and staff are expected to join us in Kent. Tim is staying on to assist with the move. Andy Reed will be responsible for moving the production and then concentrate on development work, and Matt Deakin will head Celco R&D at Electrosonic.

"Basically there will be no change in overall responsibilities and sales and service operations will continue uninterrupted."

Action News

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Fact: No ordinary scroller can fade between colours - but the ColorFader is no ordinary scroller!



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Find out more about this and other exciting PanCommand products such as the **ColorRanger**, **ColorCue**, **ParFlector**, **CycFader** and **XL Ranger** from JEM Theatrical Supplies. PanCommand is available through a European-wide network of distributors. Contact JEM for further details.

PanCommand, ColorFader, ColorRanger, ColorCue, ParFlector, CycFader, XL Ranger & CuePort are Registered Trade Marks

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New dealers are still coming on-line.

Contact JEM for countries not shown.

Theatre Projects Sound and Vision Launches a new Automated System for Sound & Lighting

Theatre Projects Sound and Vision, the leading equipment rental company, has launched a new computerised system which they say will dramatically improve co-ordination between sound and lighting technology, including Vari*Lite luminaires, and will thus increase efficiency both in setting up and operating lighting and sound gear.

The system was developed on his own initiative by Theatre Projects sound engineer Roland Hemming, in response to problems encountered in the field. So effective has it proved that the Samuelson Group plc, which owns Theatre Projects, has invested in the equipment needed for its launch, including two Atari Stacey computers.

Lighting and sound equipment can be controlled either from one of the Atari computers, or from a remote control. This then interfaces to MIDI (Musical Instrument Digital Interface), RS232, Colormag or Celco lighting desks, relay switches, Avo dimmer racks, DMX and SMPTE code. Theatre Projects has also written new software especially for editing specific pieces of equipment.

The company recently used the system for a BMW trade show in Germany, also to be mounted in the UK, Australia and the USA, and it is already attracting great interest from designers and engineers throughout the industry, particularly for long-running shows. Its uses for a new Broadway production are currently under discussion.

"The philosophy behind the control system is to help, rather than replace the engineer. For instance, there will always be some form of manual override," commented Roland Hemming. "Of course it can be pre-programmed to run a show unmanned, but it really comes into its own



Pictured above is Roland Hemming (right) with colleagues at Theatre Projects Sound & Vision, Stafford Rowley (left) - Customer Technician and Simon McGowan (centre) - Customer Production Manager.

when an operator wants to do several things simultaneously.

After all, you can only push so many buttons at once. Using this computer-controlled system, there will no longer be the element of risk with very tight cues, since it will guarantee that different sets of equipment, such as conventional lights and Vari*Lite luminaires, act perfectly in time."

Most of the equipment is simple to operate, and its pre-programming capacity will save both time and money by enabling designers to reproduce lighting and sound settings they have already created, as well as speeding up fit-ups. The system can also be used to co-ordinate musical instruments in the sound and vision mix.

"We can control many aspects of sound and lighting operation, and we're developing more applications as time goes on," said Hemming. "For instance, if a designer has a particular problem, we can design something to solve it."

Theatre Projects' experience on the BMW trade show provides an example of this kind of problem solving, to overcome difficulties in controlling Vari*Lite luminaires.

"The Artisan control desk has a simple MIDI implementation, based on copying key presses, and the status of the desk is continuously changing," Hemming explained. "Recording and playback from the top is easy, but starting from the middle, as happens in rehearsal, meant having to send all the data from the beginning of the sequence.

We used an MEP-4 MIDI processor to modify the data to a compatible form so that the computer would chase it back to the start. Then when we ran the sequence from the middle, the computer simply sent all the data up to that point within a few hundred milliseconds."

ABTT Trade Show Postponed

The ABTT Trade Show originally scheduled for March, has had to be postponed due to difficulties arising between the organisers, the Association of British Theatre Technicians, and the proposed venue.

The ABTT is now looking at dates in the early part of May. Nothing has, as yet, been formalised, but it is hoped that the Association will be able to confirm a venue and dates soon. For further details, contact the ABTT in London on 071-434 3901.

Discoscene Wales

This year sees the introduction of 2 new regional one-day exhibitions under the Discoscene name. The first of which, Discoscene - Wales, is to be held on Sunday 10th March at the Gwent Suite, Hilton National Hotel, The Coldra, Newport. Anyone requiring further details contact Terry Lees in Birmingham, telephone 021-707 1925.

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First Gold for 'Eastern' Germany



Berlin-based Helicon recently bought their first Celco Gold from Multilite of Hamburg. Helicon is one of the biggest rental companies in Germany and was the only rock 'n' roll lighting rental company under the former GDR regime. Pictured above is Helicon's Gerd Helinski (centre) with Celco's Thomas Reimann (left) and Colin Whittaker.

Pyropak in the UK

Luna Tech, manufacturers of the stage pyrotechnic system Pyropak, have announced that Le Maitre Lighting and Effects has become their exclusive importer for Great Britain.

Over 3,000 Pyropak systems have been sold in the Americas, Canada and Europe since Pyropak's introduction at the first Show Tech, 14 years ago. Now there are more than 110 dealers worldwide.

Of greatest interest to pyrotechnicians are their high quality gerbs specially developed for indoor use. These can be supplied in different heights and burn durations, offer a variety of colours, and provide predictable reliability shot after shot.

Malham in Receivership

London-based Plasa member Malham Limited cite the Midland Bank's foreclosure on their overdraft as the main reason for going into receivership in January of this year.

As a direct result the sale of both the company's premises and equipment was necessary. In spite of this, director James Eynon hopes to re-establish Malham's services, albeit in another form, in the future.

Wharfedale R&D Team

Fresh from the successful completion of its portfolio of seven loudspeaker and electronics brands, Wharfedale has now put together a team of 18 of the UK's leading audio engineers and designers to develop new innovations in all of the group's product areas.

Drawn from product development teams from within the group and elsewhere, the new team of a dozen engineers and six draughtsmen is led by Dr. Craig Sawyers, a qualified electronics engineer and laser physicist.

The effectiveness of the R&D team will be greatly helped by the development of new laboratory facilities at Head Office which will be three times larger than those previously used for speaker development at the Leeds site, and which will employ an open-plan layout which Craig Sawyers believes is essential to the success of the 'pressure-cooker' approach. A number of new projects are already underway, but an early indication of the team's success will come when the 'Leak' brand is re-launched later this year.

Wharfedale have also recruited Steve Halsall to the position of product manager for venue products — strengthening the company's expertise in the field of professional speakers for the pub, club and leisure market.

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Squire gives you SPOTS

Squire Sound & Light has just launched a major scheme aimed at nightclub and other lighting and sound operators. SPOTS, or Squire Professional Operators' Trade Scheme, will give clubs and many other organisations an opportunity to buy accessories such as smoke fluid, pyrotechnics, styli and lamps at vastly reduced prices. In addition, the more that is ordered, the more discount Squire will give away. Volume orders (over £100 + VAT) entitle the club to free next day delivery.

Squire staff in all five branches across the UK have been hard at work putting the final touches to this scheme - thousands of clubs have been entered on to the Squire computer database and each outlet has been stocking up in preparation.

Squire MD, Simon Cummings, says he considers the launch of SPOTS to be the most significant event since Squire was taken over nearly 14 months ago. He told L+SI: "This must be just what every club has been waiting for. Club owners and managers have been paying too much for essential everyday items such as smoke fluid and lamps. We consider clubs to be bona fide trade users, and they should be given bulk trade prices on all consumables."

A.C. Lighting Reinforces Team

Four major new positions have been created at A.C. Lighting's High Wycombe headquarters.

Peter Searles has been recruited as I.T. systems manager. He will also be responsible for coordinating the company's international activities; Paul Priest fronts the marketing department incorporating advertising and trade show presentation; Debbie Potter joins as senior sales executive being responsible for the home and export market, and Mark Thompson heads the service and technical support section.

Nexo Far East

Nexo has announced the formation of a new subsidiary, Nexo Far East Pte Ltd., to support its rapidly growing presence in South East Asia. Nexo started selling in Singapore and Malaysia in 1986 and now has distributors as far apart as Thailand and Hong Kong.



The new company will be managed by directors Lawrence Tay (pictured above), and James Young who believe its operations will complement those of their existing company Electro Systems, which distributes Nexo products in Singapore and Malaysia.

Safe-T 91

An International Conference on safety in live entertainment will be held at the Cavendish Conference Centre, central London, from June 18th-19th. Papers have been offered by authors from leading firms of UK theatre consultants, well-known experts in theatre research and education, the health and safety executive, the fire engineering executive, a local licensing officer, manufacturers of theatre lighting and pyrotechnics effects and a company specialising in repairs and maintenance. Of Particular interest were papers offered by American safety experts.

Topics discussed will include the role of the health and safety executive, safety at pop concerts, fire and smoke control in theatres, the development of model safety codes in the USA, the safe use of pyrotechnics, the causes and effects of the fire at the Tyne Theatre and Opera House. Alongside these will be papers on standards for inspectors, recent developments in luminaire safety, the use of RCD's in stage lighting equipment, safety considerations and the maintenance of theatrical lanterns, crowd control at pop concerts, some consequences of auditorium seating codes and safety aspects in the design and use of stage machinery.

For further details contact CIBSE in London, Tel:081-675 5211.

Bridgend State Opening

The official opening of Commercial Acoustic Products' production facility by the Rt. Hon. David Hunt, MBE, MP, Secretary of State for Wales, marked the culmination of a five year investment programme by the Reading-based SAS Group of Companies.

Built at a total cost of over £7 million, the factory extends to some 110,000 square feet and employs a workforce of over 150. It is capable of producing over 750,000 square metres of suspended metal ceiling systems incorporating more than 5,000 tonnes of steel coil per annum.

Intrade 91

Exporters and importers will be able to get 'practical answers to practical problems' at Intrade 91, the new international trade show being held at Wembley Conference Centre from the 25th-27th June. Over the three day event, 15 seminars will cover Customs, freight and finance matters vital to international traders.

45 National Stands have been taken by the Governments of Britain's major trading partners. These stands will have up-to-date information on overseas agents and joint ventures prospects for UK exporters.

For importers there will be more than 500,000 import opportunities available. "The primary aim of the show is to encourage increased international trade and improve its overall efficiency" says David Washington, managing director of the organisers, Setform Exhibitions and Conferences Ltd. For further details contact Setform in London. Telephone 071-253 2545.

SEDA 91

The annual disco exhibition SEDA 91 is to be held on Sunday 2nd of June, 1991, at the Woodville Halls, Gravesend, Kent.



Eastbourne-based export specialist Cooper-Naj Limited would like to hear from light and sound manufacturers wishing to promote their products overseas.

Managing director Najma Maple (above) and lighting manager Andrew Taggart will be visiting SIB/Magis in Italy during March and exhibiting with Lighting Components Limited on their stand at Elenex in Thailand in April. They would like to hear from British manufacturers who have new products to promote. They will also source overseas products and manufacturers for British clients. Cooper-Naj can be contacted on (0323) 411422.

Samson Technologies has recently appointed a representative for Asia and Australia. Based in Japan, the company All Access will represent the entire line of Samson wireless microphone systems.

Traditional Thai Orchestra Fong Nam which already uses its own Celestion SR sound reinforcement system in Thailand, will be using the same system when it visits Snape Maltings Concert Hall in Suffolk, later this year. The orchestra features ancient traditional instruments such as the glass xylophone, modern instruments and samplers.

On his last tour, Paul Weller's show was designed and operated by Simon Chandler-Honnor and not Shawn Richardson as originally stated in the November 1990 issue of L+SI.



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Camelont Select Selecon

Camelont AB, the Swedish Manufacturer of the successful Rainbow Colour Changer announced this month that they have appointed Selecon New Zealand Ltd to distribute their range of Colour Changers throughout the Pacific Rim.

Jeremy Collins, managing director of Selecon, has developed a strong dealer network throughout New Zealand, Australia and the Far East and will be offering the Rainbow to all these territories from February.

Selecon will be exhibiting at the forthcoming Pro Light & Sound Show in Melbourne in June and also in Singapore in July at Sound & Light Asia 91 where the complete range of Rainbow Colour Changers will be on show.

Dealerships are still sought for other areas and interested companies should contact Camelont at 110 Gloucester Avenue, London NW1 8JA, England, telephone (44) 71 722 6032, fax (44) 71 722 3940.

Change of Direction for British Music Fair

The scope and direction of the British Music Fair has recently widened to embrace any product or service, from anywhere in the world, that is related to music in any way. It is this new outlook and promise for the show's future direction that has prompted the creation of a new, more representative title for the event. Hence, the 'International Music Show' is born. The show will be held from 10th-14th July 1991 at Olympia, London. Wednesday 10th and Thursday 11th July are trade only, Friday 12th July is 'Education, Schools and Orchestras' day, and members of the public can visit the show on Saturday 13th and Sunday 14th July. For further details contact Westland Associates Ltd, in London. Tel: 071-730 7852.

Film and Television '91

Over 200 members of the film and television industry attended the official launch of Film and Television Production '91, the industry's leading UK exhibition and conference in London last month.

The industry was invited to attend a presentation of the event which was chaired by Brian Rhodes, president of the British Kinematograph Sound and Television Society (BKSTS), with speeches by Ian Mackay, chairman of Film and Television Production '91, Tony Iles, conference organiser and David Gibbs, promotional co-ordinator. The presentation was followed by a lunch held in celebration of the BKSTS' 60th anniversary.

Since the launch, a further ten companies have signed up to exhibit at Film and Television Production '91, including Hayden Laboratories, Ramsa Panasonic and the French company, Debrie International S.A. This boosts the total number of exhibitors to over 60, covering areas such as television and video equipment suppliers, cinema supplies, locations, facility houses and animation.

Interest was also expressed in the event's three-day conference programme and in Scene Today, the full day meeting opening the conference, which will this year take 'Entertainment in the UK and Europe' as its theme. Speakers who have already agreed to participate in Scene Today include Bill Cotton, chairman, Noel Gay Television and former managing director, BBC Television and Joerg Agin, Vice-President, Eastman Kodak.

Film and Television Production will be presented by the BKSTS on 9-12 July 1991 at Olympia 2, London. Organised on a biennial basis, the focus of this year's event has shifted dramatically, developing the themes of the 1989 show to reflect the changing needs of the film and television industry.

TEAM 91

The Institute of Entertainment and Arts Management have announced that Silver Collins & Co Ltd, are organising 'TEAM', The Entertainment and Arts Management show which will take place at The Ramada Inn, West London, on 16-17 October 1991. The exhibition will encompass all aspects of the entertainment and arts industry from agencies to venues, seating, lighting and sound equipment companies, firework manufacturers to computerised ticketing specialists and many more. Further information is available from Silver Collins & Co Ltd, telephone 071-729 0677.

Theatre Consultancy

Bob Massey Associates have added a new service to their theatre consultancy especially for the technical arts industry. As they are not suppliers, and therefore not in competition, they will now be able to provide design, specification or project management support on a freelance basis. This will cover any stage engineering, lighting, curtain or communications. Full details of this new service can be obtained from the company in Nottingham on (0602) 673969.

Image Pro Choose Tracoman

Image Pro Inc., of Minneapolis, USA, has appointed Tracoman Incorporated of Miami, as exclusive US distributor for their Image Pro optical accessories. Tracoman Incorporated in an international distributor for entertainment fixtures. Image Pro is available in three sizes and converts standard spotlights to powerful full colour or standard-pattern projectors, fitting Lekos, PAR 56s and PAR 64s respectively. The combination of a polycarbonate fresnel lens and dichroic heat filter and a high resolution slide produces an image which is sharp, vibrant and colour accurate.

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- A total of 16 different patterns are available.

- Gobos change with or without temporary blackout (*).
- An evocative rolling effect is available by shifting of two superimposed Gobos.
- Gobos are interchangeable and easy to replace.
- A wide range of Gobos is available on request.

IRIS

- Fully variable beam size.
- Iris speed is totally controllable by the operator.

PRISMS

- Three trioptic prisms create multiplication and overlapping of projected patterns.
- The prisms have 3, 5, 9 facets.

STOPPER/STROBE

- High speed stopper to cut the beam as long as required.
- Strobe effect rate fully adjustable from 1 to 7 flashes per second.

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- Mechanical. Full adjustment of light intensity from zero to 100%.

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- 1:3/250 mm achromatic doublet lens, giving the best colour and transmission performance.
- Focussing remotely controlled.

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- The SUPERSCAN can accept either analogue or digital control signals, from controller or computer.
- analogue input: 0-10 V.
- digital serial input: RS 232/43 - DMX 512.

MOTORS

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- 12 control channels:
- Channel functions:
- channel 1 = Iris
- channel 2 = Colour disk
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- channel 4 = Stopper/Strobe
- channel 5 = Pan

- channel 6 = Tilt
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- channel 12 = Blue colour Mix control

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dimensions, short arc, daylight spectrum and long lamp life they are an unbeatable light source and are particularly suitable for projection units and effect luminaires.

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• STRUCTURE:

108 Channels, 216 Scenes of the 108 channel levels with fade in and out times, 54 Scene Chases, 48 Environments of Scenes and Scene Chases, 6 Environment Chases.

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• INPUTS:

Audio for Sound to Light and Chases. RS232 and MIDI for total remote control of ANY feature.

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• SPEED:

The ultimate in both programming and operation thanks to its conceptual simplicity and having one touch pad for every requirement.

• MEMORY:

Internal memory non volatile. RAM card for backup, changing shows and transfer between Masterpieces.

• SOUND TO LIGHT:

Pulsar Modulator's Sound to Light circuits built in, 3 zones of 4 channels, each patchable at any level over the 108 channels.

• SECURITY:

Using his security code, the 'Programmer' may deny access by the 'Operator' to any touch pad or slider.

• OTHERS:

18 Keyboards of 18 pads, Latch/Flash/Swap/Solo keyboard modes, Sound to Light monitor, Joy stick with position/velocity, Change security code, Freeze output, Master/Slave desk, Chase section: Manual step fwd/rev, Speed, Slope, Bass/treble burst, One-shot/repeat, Use scene fade times, copy chase...

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International Lightshow Reports Good Business

Lightshow 91, held at Olympia 2 in January confounded many of the pundits by being an exceptionally good show for many exhibitors. While overall attendance figures were slightly down on previous years, most exhibitors reported doing good business despite the uncertain political and economic climate.

And, while the sudden and unexpected death of show director John Tengwall cast an inevitable shadow over the event, Lightshow 91 proceeded as he would have wished - very smoothly and professionally under the guidance of DLA Secretary Graham Samuel and his dedicated team.

The vast majority of exhibitors were also looking forward to Lightshow 92 which starts at the brand new Earls Court 2 Exhibition Centre on January 26, 1992, after many years at Olympia.

Total number of visiting companies to this year's Lightshow was just over 3,040 just eight per cent down on the previous year and certainly far better than many other trade shows which had reported figures down by between 20 and 30 per cent.

Plymouth Pavilions

DRV Public Address Consultants of Newquay have recently been awarded the design and build contract for the audio visual and stage engineering systems at the new Plymouth Pavilions leisure entertainment and conference centre.

The £1m contract has been in the planning stage for the last 12 months and work is due to commence on site early this month for completion in Summer 91.

All design and installation works are being undertaken 'in-house' by DRV to ensure that all the facilities provide a fully integrated system.

Elliot-Novak Join Forces

Bruce and Guy Elliott together with Mike Novak have formed a new company in response to what they describe as changing market demands, and the increasing requirement for a more controlled approach to sound contracting. Elliott Bros & Novak Electronics Ltd will be operating from Greenwich, and will specialise in all aspects of sound contracting.

This includes design, room measurement, product specification and acquisition, project management, installations and commissioning. The design engineers, headed by Mike Novak, have full AutoCAD and AcoustCAD facilities as well as operating 'Super Project' computerised total project management service.

For more information contact Elliott Bros & Novak Electromusic Ltd in London. Telephone 071-293 1443.

Young Lighters of the Year

Four 'Young Lighters of the Year' gave presentations to an audience of over 70 at the January sessional meeting of the CIBSE Lighting Division.

The Young Lighters of the Year scheme was established in 1990 to stress the variety and scope of a lighting career and encourage young people to specialise in this field. Entrants prepare a short paper on any topic, those short listed are then assigned an adviser to help them prepare a ten minute presentation. The four finalists were Mark Ayers, Facet Ltd, Peter Everard, Marlin Lighting Ltd, Florence Lee, Ove Arup & Partners and Maria Trezzi, Thorn Lighting Ltd. They all received CIBSE Lighting Certificates.

The Young Lighters of the Year scheme is sponsored by Marlin Lighting Ltd. Details of the 1991 scheme will be announced by the organisers later this year. For details contact CIBSE on 081-675 5211.

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CEREBRUM LIGHTING

FROM MASS SPECTROMETER TO MIDI

John Offord talks to managing director John Lethbridge

A little over 20 years on from a July day in 1970 when Cerebrum Lights made their first appearance at an open-air pop festival in Portsmouth, John Lethbridge's Cerebrum Lighting Limited is now a multi-million pound company and one of the best known names in the performance lighting trade worldwide.

And it's a long way on from Lethbridge's first involvement in the industry with a light show in March 1969 when he went into business with a partner as 'The Mass Spectrometer Light Show' and used homemade equipment that incorporated such objects as a slide projector with a food mixer and cardboard discs to produce strobe effects.

"Originally, my partner and I relied on working at colleges and private parties, but I decided to supplement my income by building strobes from kits, and selling them from my parents' house by mail order," explained John Lethbridge. "As time went by, the product range grew, and I became an agent for several disco lighting manufacturers including Pulsar Light and Optikinetics Ltd. In 1974 I joined together with two new partners and expanded into stage lighting and PA rental and as a result we moved into a retail shop in Surbiton in the summer of 1975."

The present limited company was formed in March 1977 and in 1979 they purchased the long-term leasehold on the Surbiton premises and also rented some nearby warehouses. Over the past 12 years the business has progressed through a number of phases, with an involvement in several different hire operations and a company involved with installation and design work, Specialist Electrical Services Limited, whose assets were later sold to the newly formed Key Light UK Limited in 1985. In 1984 Celco Inc. was incorporated in the USA and this was sold off in January 1988 to Klark Teknik Electronics Ltd.

With the Chiltern Drive premises bursting at the seams, and not the easiest of buildings to work from for reasons of layout and location, the directors of Cerebrum made the decision to move to a modern office and warehouse complex, and in the Spring of last year they finally found what they wanted and moved into two new business units within the Shannon Commercial Centre in New Malden, Surrey — just a few miles away from their old base.



John Lethbridge and (below) Cerebrum's new complex at New Malden in Surrey.



"We made a conscious decision four or five years ago to move to a building of this type," said John Lethbridge. "It was a bit like trying to buy a new house and saving up for it. As fast as we had enough money to go towards it the prices were zooming up! We've always tried to pay cash for things if we can, and own all our assets, and that was the plan. Eventually we found this place in September 1989 and moved in on April 1st last year."

The new premises has enabled Cerebrum to improve considerably on internal communication and stock and order flow, and they've

also incorporated a demonstration area, complete with glass-fronted control room above — more of which later. It was also imperative to stay within the M25 orbital ring, despite the costs.

"We looked at the pros and cons of moving down to the West Country or wherever, or out into the countryside, but it is very crucial for us, being so involved with export, that we're near to Gatwick and Heathrow. If we moved out of London it would have reduced our costs considerably, but we have several trucks coming here every day for export orders. It would have meant putting up the cost to our customers because of road freight and the speed of getting goods out. Also, we've been building up our trade business in the London area and this could have suffered.

"The down side has been that with property costing so much we had to go for the minimum space we needed rather than the maximum, so what we are aiming towards now is greater efficiency from the people who work here. We are also going to look at the possibility of some staff working from home using a computer terminal. I'll be the first person to start this as an experiment, and maybe in the future we could have the accounts staff and any of our clerical people operating from a remote location. We will probably have to do it because we have five sales staff now, and ideally we could do with seven."

Cerebrum has long been recognised as one of the most efficient and well organised of trade operations but there is also an interesting paradox in its modus operandi.

"I don't know of any other companies who represent manufacturers worldwide and appoint exclusive distributors overseas for certain products whilst selling other manufacturers' products directly into the world market," explained John Lethbridge. "A lot of people find this hard to equate. However, without naming names, many manufacturers are quite happy that Cerebrum Lighting exists, because although they may have their own distributors in say Germany or France for instance, there are always people who won't go to the official distributor because of personality clashes or they may simply be straightforward competitors."

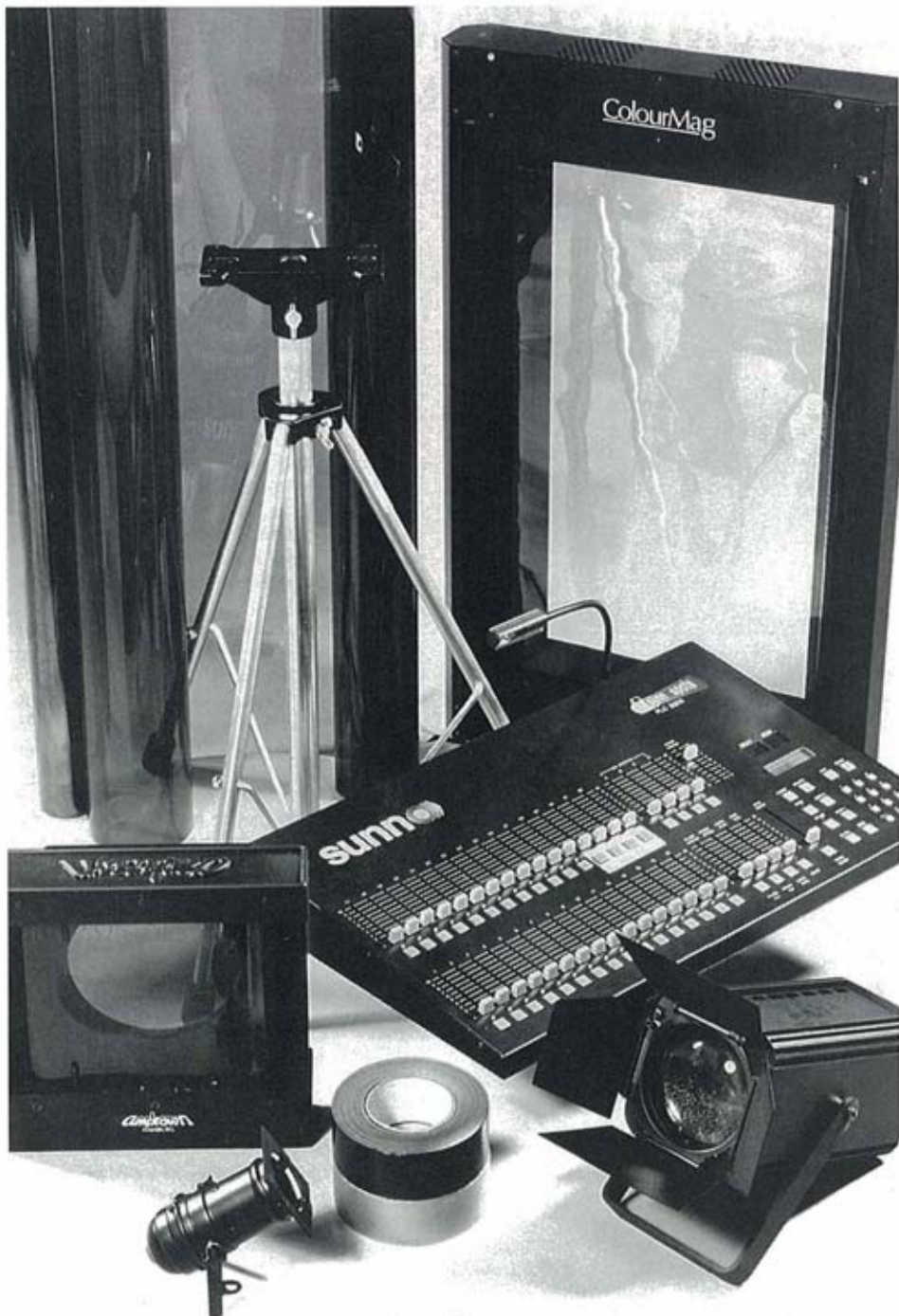
"So there are many businesses, particularly rental companies, who are very happy to deal



Part of the administrative office area.



Sales counter and purchasing department.



All this, and more . . . a selection of products from Cerebrum's extensive range.



Mark Tonks, UK sales manager (left), with Guy Sargant, sales engineer. In the background, phone in hand, is international sales manager Rod Bartholomeusz.

with someone in the UK other than the manufacturer, provided they can get the right price and fast delivery of product. We've always found a niche in this market, but it's really since becoming a wholesaler for Powerdrive and setting up their world distribution network that we were in a position where we had to look at making people exclusive distributors ourselves.

"We've always believed it's better to have an exclusive distributor or maybe two or three in a country and try and protect those distributors. So there are certain products that we actually try and do everything we can to stop the back door route in and yet with other products we took the back door route in!"

I suggested that much of the success of Cerebrum's operation was down to the way they can package together many manufacturers' products, particularly for smaller countries around the world, and where the trade distributor can come to one place and buy a complete package.

"I've often described this as a supermarket for the lighting industry," continued John Lethbridge, "and that's very much what we are. Over the years we've become more and more specialised in what we do. However, there are certain parameters for what we will sell and what we won't sell. For example, when we first started out we used to do sound equipment, but we decided that we didn't know enough about it to be able to give people good advice. We also tend to sell products that are already established in the market. We are approached all the time by small companies with new products — one such was Celco who came to us as EFS Celco. We kept them hanging around for about 18 months because we didn't know enough about them to be confident that we could sell their products and also give the necessary back-up.

"Just recently we've taken on Advanced Lighting Systems' Enigma controls and although ALS were an established company there was a year of negotiation before we commenced the arrangement. We are very cautious about what we put our name behind, partly because we've been caught out in the past.

"Without blowing our own trumpet, I think we have a reputation for being an ethical company selling reliable products and it would only take one bad product for us to lose that reputation. So sometimes we're our own worst enemy. We might turn down things that could be good sellers in the long term.

"We've also tended to steer much more towards lighting control equipment in the last



Graham Whittaker, director in charge of stock control and purchasing.

couple of years because through our association with Celco we became very aware of what people were looking for in control in this area of the market. This was one of the attractions about John MacPhail offering us ALS. He could see that we could get the Enigma into new markets, although our initial efforts will go into expanding sales into the discotheque sector. We are also going to work very closely with him now on future software developments so that it can be integrated into other market areas.

"Most of the new products we've taken on in the past year or so, including MA boards from Germany and the Sunn Lighting equipment from America, have been in the area of control. We've consciously steered away from motorised effects in the discotheque market because we were getting more aggravation from selling scanners and helicopters than any other products. We've probably lost out a bit by not having that group of products within our range, because we've always tried to offer a comprehensive selection of goods."

I asked how Cerebrum's sales were split across the various sectors of the market.

"Our sales are very difficult to analyse because as you know, the boundaries are less and less defined now. We can be selling discotheque equipment to a stage lighting company and stage lighting to a discotheque company. Where does something like a Zero 88 Sirius desk end up? It's as often in a touring company as it is in a discotheque. Celco Golds can be found in night clubs and Pulsar Rainbow strobe controllers on tours with rock bands.

"The other difficulty about knowing where our products end up is the fact that we are rarely selling to the end user. We're nearly always dealing with distributors overseas, rental companies, installation companies, shops in the UK and so on. We actually analyse our sales by product type and by country — so we know what we've sold and to which country. We monitor this on a month to month and year to year basis to see what trends in sales are between countries and product groups."

Over recent years Cerebrum's name has been synonymous with Celco lighting control equipment, but in 1989 the close business liaison between the companies was concluded, and Celco took over the marketing and sales of their product range.

"I can understand why they went the way they did," said John Lethbridge. "If I was Celco I think I would have made the same decision, because they had become a very successful company at this point. Six months before our distribution agreement came to an end we were quoting nine months delivery on Celco product. We parted on amicable terms and we're still doing some business with them, but obviously we've had to move on from there.

"We tried a compromise for a year where we worked as one of Celco's joint UK distributors with AC Lighting, but it didn't really work out. We decided to look for alternative product and have now worked out a deal with MA in Germany via Lightpower where we're sole distributor for the UK. We are also planning to work with Lightpower in the United States.

"Having had the experience of Celco Inc. we know what's really needed to make products successful in the USA and that's something we're going to look at closely in the next few months. Either ourselves or a combination of our companies will need a presence in North America, and I'm going over this month to discuss setting up a sales operation again."

By its choice of products, Cerebrum has unstintingly waved the flag for UK industry. To replace the gap left by Celco and opt for the distribution of MA lighting control boards from Germany, have they started a new trend or is it just down to business?

"We've always been against cheap equipment coming in from the Far East and have been very 'pro' British equipment. Until two or three years ago I would have said that everything we sold was of British origin and going one way out of the country. That's changed a little because the first product we brought in was the Posi-Spot system from Amptown because they have always been a very good customer of ours in Germany. It was a natural thing for us to start distributing it in the UK. This caused us to dip our toes in the water and start our first import relationship.

"The MA situation is somewhat different. We had to find a product that would replace Celco, and in our opinion it was no good taking a product that was a cheap copy. We were looking for something that was equal to or superior to Celco and that's why we've gone the MA route. There was really no other choice for us. In many ways it was an obvious decision for them to approach us and for us to approach them.

"The Sunn Lighting control from California is different. I became very interested a couple of years ago in learning more about MIDI. I had one of the first-ever electronic synthesizers on the market back in the early seventies and I've always been interested in electronic music. I was intrigued when I read that MIDI could be used with lighting equipment.

"So I decided the only way to find out was to get hold of a LEMI MIDI lighting controller from Italy and buy a synthesizer and sequencer and start playing around with it. I set it up at home and played around with it at week-ends, and I've learned more about MIDI through doing that.

"The Sunn Lighting desk had been on sale in the States for three or four years, so we looked at it at LDI 89 in Nashville and decided that out of all the American products it was probably the best value for money and had the most features. That's really why we decided to take it on. We want to try and educate people (I know that sounds a bit arrogant) as to what can be done with MIDI, but it's a difficult concept to get across.

"We've tried to produce a leaflet explaining the concept, but telling what can be done rather than how. I think the difficulty with a lot of computerised systems, and it's the same with the Enigma, is how to get over to someone, either in an advertisement or in five minutes on an exhibition stand, how to get these fantastic effects out of the other end, and not frighten them off by bringing out a 30 page manual.



Rod Bartholomeusz, still on the phone.



Marketing director, Mike Fisher.

Once you've got the concept in your own mind it is very easy to understand. It's all about getting a new way of doing something across.

"It takes us quite a long time to learn how a new control system works, and we see our role increasingly now as advising people on how to solve problems. We've moved on from just taking orders over the telephone and shipping gear out. We've decided that with our 'exclusive' products like Enigma and MA desks to appoint one of our team as a product



John Lethbridge (left) with Greg Szabo, lighting designer, at the NEC for Leisure Week.

manager so that there is one person within our company who is an expert on that particular product.

"With the Enigma Mark Tonks will be that person and Greg Szabo will look after the MA desks. This way, each of them has to take it on himself to learn the product inside out so that the rest of us only need to know the basics of the systems. This will also protect us in the long term in that companies are going to have to become more like computer dealers, and have good technical knowledge about the products they are selling. There will always be companies who come and go, but it's becoming a much more professional and specialised industry."

And to demonstrate this philosophy, Cerebrum have set up an impressive showroom at their new premises so that all their control systems can be fully explained.

"We will invite our trade customers to bring their clients along so that we can arrange demonstrations for them where we won't talk prices. They can then go away and discuss matters with their clients afterwards. Another thing I'm a great believer in is training within the industry.

"We'd like to start some training seminars here, and we've got a couple of freelance people we are going to use for the purpose of teaching the Enigma and MA lighting consoles. I do feel that many people go out and buy complicated equipment but don't use it fully because they don't really know what it can do. It doesn't really help the reputation of a product if someone, through operator error, blames the piece of equipment for the fact that they are not getting the results they want.

"This is particularly true of the MIDI equipment. Unless we can encourage people to come here and show them what can be done we won't be able to sell the products. So we are going to concentrate on promoting this idea and possibly organise some workshops around the country on other people's premises to show what can be done with the Enigma and MA desks. As an industry we've got to get together more and try to organise ourselves to do more product training for young people up and coming in the industry. They are going to be the customers of the future.

"We have a lighting designer who's out on the road with one of our MA desks and we're considering the possibility of using more freelance people to evaluate product. If there are any freelance lighting designers who'd be interested in trying out an MA desk we would be interested in talking to them about it. We are firm believers in letting people get their hands on the product to see what they think of it. I'm not saying people can come to us for a six week tour and borrow a desk for nothing, but if someone's got a particular job on for say two or three days, then if we can, we'll be willing to accommodate them and loan them a desk."

For the final word I popped into the office of international sales manager Rod Bartholomeusz, who joined Cerebrum three years ago from Strand Lighting. He's always on the telephone, but in a rare gap in between one of his overseas friendship calls I got a word or two on tape.

"We are a totally international company," he emphasised. "Japan for instance is now our third largest market. We're a unique operation. We're not just a boxes in, boxes out company like many people think. We now handle many exclusive lines and give a full technical back-up service. Many manufacturers see Cerebrum Lighting as a very important part of their sales chain."

As Cerebrum Lighting approach their 21st year in the business they are confident that their track record will lead to a regular increase in customers. And once a customer of Cerebrum, you usually end up becoming a long term business partner.



Part-time research at Cerebrum for Cambridge engineering undergraduate, Peter Church.



Cerebrum's impressive demonstration studio.



John Lethbridge (right) and Ralph-Jörg Wezorke (left) of Lightpower with the team from MA Lighting. (See feature on both companies in March issue.)

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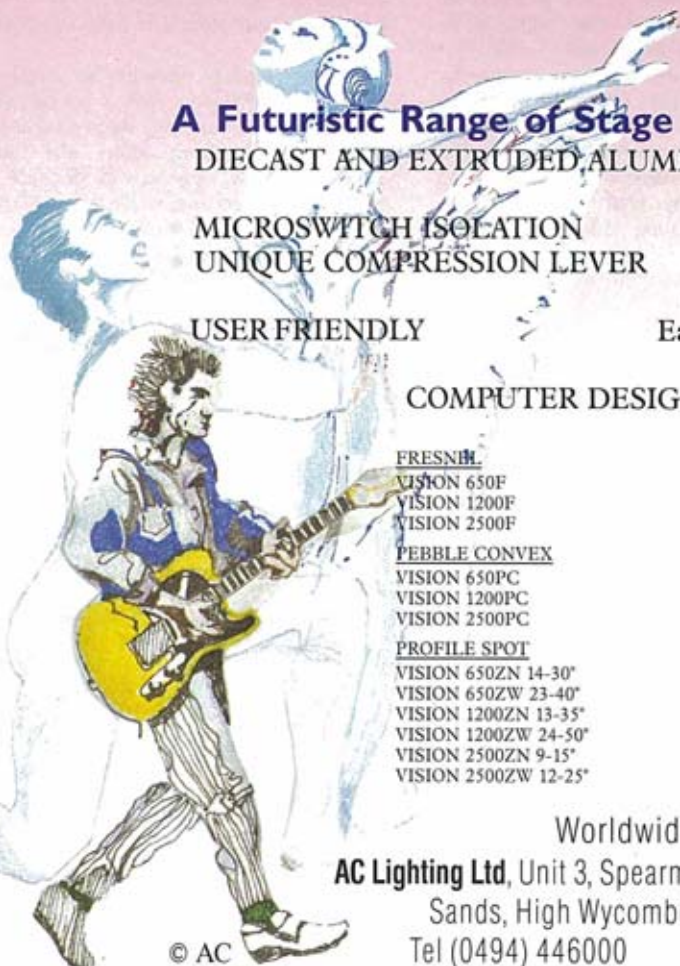
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SOCIETY TALK

Convention Centre Designer talks to the Society of Theatre Consultants

On 22nd January a unique event took place in London's Whitechapel; an outside contemporary was invited to talk to the Society of Theatre Consultants about their role in modern theatre environments. Artec's Steve Friedlander, senior consultant on the massive, and shortly to be unveiled, Birmingham International Convention Centre, was the speaker. Tony Gottelier went along for L+SI and the BICC will be the subject of a major feature in May issue.

While his compatriots were staying away in droves, thus precipitating an unprecedented crisis at West End theatre box offices, one intrepid American continued to brave the Atlantic despite the Gulf War.

For Steve Friedlander this was not just another of the numerous journeys made as a regular commuter to the UK, in his role as senior consultant to the Birmingham International Convention Centre. This time, the man from Artec Consultants in New York, was to get straight off the red-eye at 6am local time and travel to London's Whitechapel to address his peers, in the form of a special meeting of the Society of Theatre Consultants.

This was an unusual occurrence in itself, as inspirator Ian Albery, managing director of Donmar in whose premises the Arri GB sponsored event was taking place, told me over coffee before the proceedings commenced. "The Society is normally very introspective, since members are generally reluctant to expose their own projects to the scrutiny and possible benefit of others. However, as someone with a foot in both camps, both as a supplier and in theatre management, I can see the essential value of such exchanges of information. I realised that a US consultancy would not be so circumspect, and as the project which Artec have been working on here is of major significance, I invited Steve to make this presentation partly in the hope of changing

peoples' attitudes to such discourses in the future."

And so, I am sure, it will have proved as the roughly 30 invitees and members who attended would no doubt agree.

The meeting was first addressed by Peter Angier for the Society, who introduced Peter Ed of Arri GB, who gave an insight into future performance lighting technology as seen by his company, followed by a brief demonstration of existing and some imminent equipment. This mini demonstration was designed to emphasise his theme, that tomorrow held a requirement for centralised cueing, where it would be necessary for a master memory desk to communicate both with other boards and peripheral devices, in order to operate a complete multimedia show. In smaller performance areas, Ed sees small lower cost memory boards taking over and believes that the mouse, or even a digitizing tablet, will become the standard user interface of the future. He emphasised the need for standard protocols and hoped that the debate continuing in the trade press as initiated by L+SI, would lead to some solutions being found.

Steve Friedlander, looking remarkably robust for his lack of sleep, took a rather more conservative approach, much to the obvious satisfaction of some of those present, clearly with long memories of disastrous journeys into uncharted 'specials' territory - subsequently proven hostile.

"Artec Consultant's policy has always been one of prodding gently at the frontiers of technology, basically playing safe while ensuring that our clients are not cut off from future possibilities when they subsequently prove to offer longevity and stability." Steve told his audience "You cannot take risks with a vast project such as the Birmingham Centre, which includes 11 conference halls, including the 2,200 Symphony Hall and a flexible performance hall seating 1500 for theatrical

productions and product launches. We prefer to keep our innovation to major problem solving concepts, but always using tried and tested technology."

Nowhere is this ethos better illustrated than in the extraordinary acoustical design of the Symphony Hall, its exterior window already the biggest expanse of glass in Europe and fitted throughout with sound reflective surfaces; which also incorporates a reverb chamber, based on the Dallas model but again a first for Europe, which can increase the volume of the auditorium simply by the adjustment of certain doors. Similarly, the acoustic canopy, adjustable in level to match the scale of a performance, houses the dedicated lighting for orchestral concerts, consisting of some 160 instruments.

In the show Hall, simply called Hall 1, the massive 22 by 15 metre stage will be supplied by a 28 metre flytower which can accommodate up to 70 line sets, and supports 360 assorted luminaires.

When it came to the specification of the lighting systems, Friedlander accepted that DMX512 had become the commonly accepted standard. "Although it is a lowest common denominator protocol, basically designed to satisfy the needs for compatibility from desks to dimmers demanded by the rental companies, DMX does at least provide us with a simple and uniform data highway along which everybody can be persuaded to drive on the same side." Steve told delegates, "and since I realised that the project was far too big for just one manufacturer to satisfy, some common ground between systems was essential."

So the tender documents, always very tightly defined within Artec's policy, allowed suppliers to use their own dedicated protocols provided that they could also support DMX512. This was just as well because it was swiftly discovered that, while theatrical people were happy with an Arri Imagine board, the AV influenced product presentation boys preferred a Celco Gold. So both are provided

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on central DMX links. And provision has been made for imported touring boards to patch onto the same link, or indeed, for the addition of up to 512 extra dimmer channels.

"Dimmer-per-channel proved an economic impossibility, but the flexibility is there nevertheless," said the consultant.

There was a great deal of comment from the floor about present and future wiring needs. Although there was a general acceptance that wiring volumes were likely to reduce, rather than grow, in the future; the consensus, moved by Ian Albery and others and supported by Steve Friedlander, was to provide cableways everywhere, with plenty of spare capacity to provide total flexibility for those using the performance space later on. Sewer pipes were even proposed in place of small bore UK conduits!

In general Steve informed his audience that, as with DMX, no new technology was

used without a solid fall-back. So, for example, while infra-red had been incorporated to save riggers set-up time, not at the expense of hardwiring, thus nobody will be dependent on it at the end of the day as they will always be able to revert to direct control.

So no specials whatsoever? Well not quite true, for the ICC presented Friedlander with the opportunity to indulge a long standing personal prejudice. "I don't like those numeric keypads used by most manufacturers of architectural lighting control systems these days to set the house levels. And I don't believe that the users necessarily understand them, so they get misused, or even worse, unused," Steve said, while further informing us that, as the result, he had asked Glantre Engineering to manufacture fader-based wall units, so that levels can be set and stored in a more friendly way.

"So far so good. It all seems to work well

right now, but the real test will be when public performances start in April. Only then, and in subsequent years, will we find out if I got it right," concluded the, by now weary, traveller. "It's all a bit different from when I did rep, then if you messed up, at least you knew it was a temporary set-back. After all the show would eventually close! This, is a bit more permanent."

In common with others I, for one, am looking forward very much to seeing and hearing the result of Artec's skill in practice. Preferably, to the strains of Simon Rattle and the Birmingham Symphony Orchestra!

Tony Gottelier's review of proposals from readers, on the subject of control protocols, has been postponed until the next issue to allow maximum response, especially from those non-UK readers who may not receive their copies as speedily as others.

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FREUDIANA

Ben Duncan uncovers the sound system behind a new and highly complex theatre production first performed at Vienna's Theatre an der Wien

Freudiana is a new musical dealing with aspects of Freud's beliefs and published opinions as the founder of psychoanalysis. The original concept for the theatre was created by Brian Brolly (ex-partner of Andrew Lloyd Webber and co-founder of The Really Useful Company). The show opened in December, appropriately in Vienna, Freud's home town, at the Theatre an der Wien. The venue has a long history, having been host to Beethoven and Mozart's music making. More recently, it has just finished with *Cats*, *Les Miserables* and *Phantom of the Opera*, using sound systems by Martin Levan and Meyer.

The music for *Freudiana* is partly a classical work with a 30 piece orchestra, with interludes of choral and rock, the latter scored, mixed and recorded by Alan Parsons, Eric Woolfson and Andrew Powell, alias the Alan Parsons Project. Because of the show's technical complexity, the theatre wanted to start with a fresh sound system, and invited Court Acoustics Ltd to supply it.

A new cluster for theatre

Court's custom system, designed in consultation with Alan Parsons and the theatre's technical staff comprises a 12.5kW 5-way PA. 10kW is via six of Court's System 500 3-way trapezoidal enclosures in a vertical array, three each side of the proscenium arch, interlaced with six System 500 sub-bass enclosures. The remaining 2kW is split equally between a unique overhead vocal cluster and 30 JBL Control 1 and matching sub-bass cabinets, providing surround sound. All of the speakers were driven by Court's new PN1250 1.2kW power amplifiers, due to be launched at the Frankfurt Musik Messe.

"The cluster was initially designed with acoustic CAD, but it didn't work out. The angles were too complex," Stephen Court explained. Instead, it ended up as four 2-way systems in a custom-built enclosure, one short-throw, wide angle for the stalls, one long-throw for the circle. Court expanded: "The idea of the central cluster was based on the observation that most sound systems used in the theatre tend to 'honk'. It happens because the vocal dynamics are so different from instrumental dynamics. The instrumental parts need to be in stereo, with very wide HF dispersion, and extended low bass. Attempts to realistically reproduce the instrumental dynamics usually end up with the voice trying to overcome all the instruments. We therefore gave the solo vocals their own sound system, which is mono and tailored to the dynamics and frequency range of the human voice. Its dispersion is arranged so you have a single point source for solo vocals, and because the ear has little sense of direction in the vertical plane, it avoids solo artists ping-ponging around the stage. It also provides greater clarity for instruments and choral works, which go through the stereo system either side of the proscenium arch." Avid readers of

past issues will recall that Court's approach has much in common with top-class cinema sound.

Mixing and Control

The front end is controlled by an 85 channel Cadac mixer, which deals with the 34 piece pit orchestra, the 30 strong choir on stage, and a remotely miked choir singing under the stage. It also handles the rock rhythm section, sensibly located in an acoustically treated studio at the back of the theatre. In

flying out to Vienna with two of the musicians, namely Stuart Elliot (ex Cockney Rebel drummer) and Richard Cuttle (ex-Bowie keyboards), Stephen Court was rather taken aback by their exchange of high-tech computer gossip, and the vital floppy discs they casually carried about in their pockets! Returning to the Cadac console, it was also responsible for controlling all the MIDI changes via its integral computer.

Apart from routine FX rack processors,



View from console towards stage. Note the central video monitor (right) relaying the conductor and musicians in the orchestra pit and the subsidiary monitor (left) relaying the remote studio.



Looking out from the stage. Above the amp rack can be seen the first of the Court 500 series 3-way cabinets; another five are stacked vertically up the proscenium arch on each side.

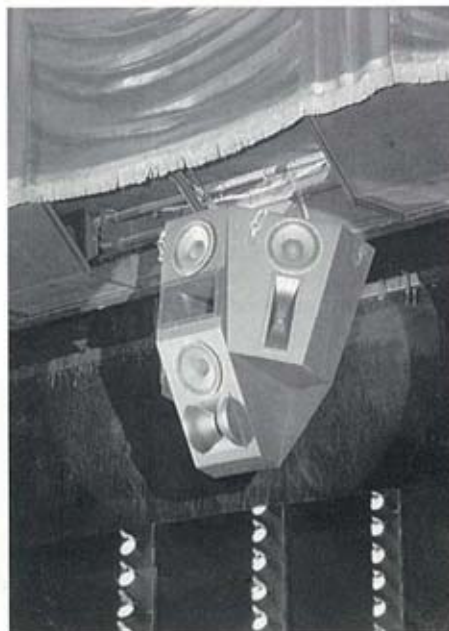
Alan Parsons had 60 separate sounds stored on an Akai Optical disc recorder, as well as laser-disc recordings of keyboards and drums. Altogether there were four separate mixes (instrumental rhythm, orchestral, choir and solos) and four sound systems: Stereo across the proscenium arch; the overhead cluster; the surround; and monitoring in the pit and backstage. They were all mutually independent, so for example some of the overhead vocals could be passed to the main stereo system as well as to the surround speakers.

Equipment List


- Cadac 85/12/2 console
- Akai D1000 Optical disc recorder
- Court GN 30 mono graphics
- Court GN 60 stereo graphics
- Court CN 230 processing crossover
- Court CN 250 universal PA crossover
- Court PN 850 power amplifiers
- Court PN 1250 power amplifiers
- JBL Control 1 enclosures + Sub-bass
- Court custom cluster
- Court System 500 3-way speakers
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Alan Parsons at the Cadac console.



Court's custom central cluster.



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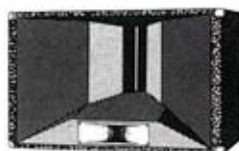
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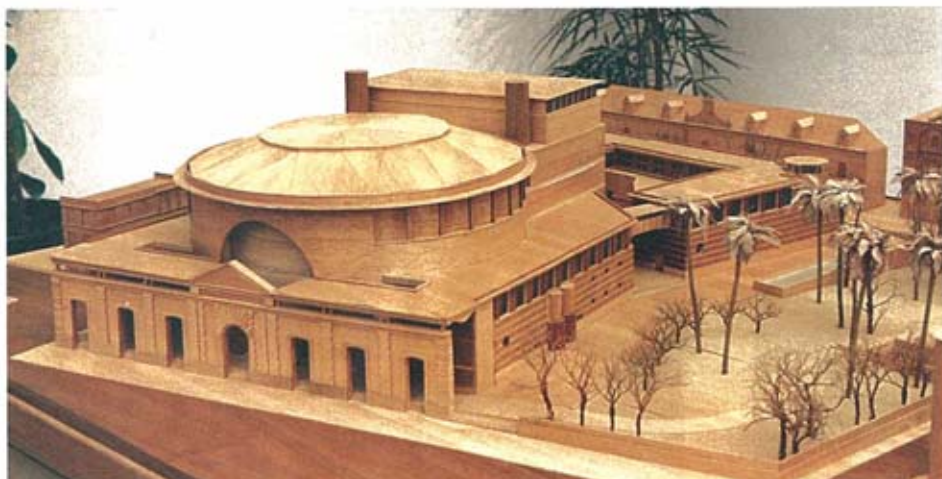
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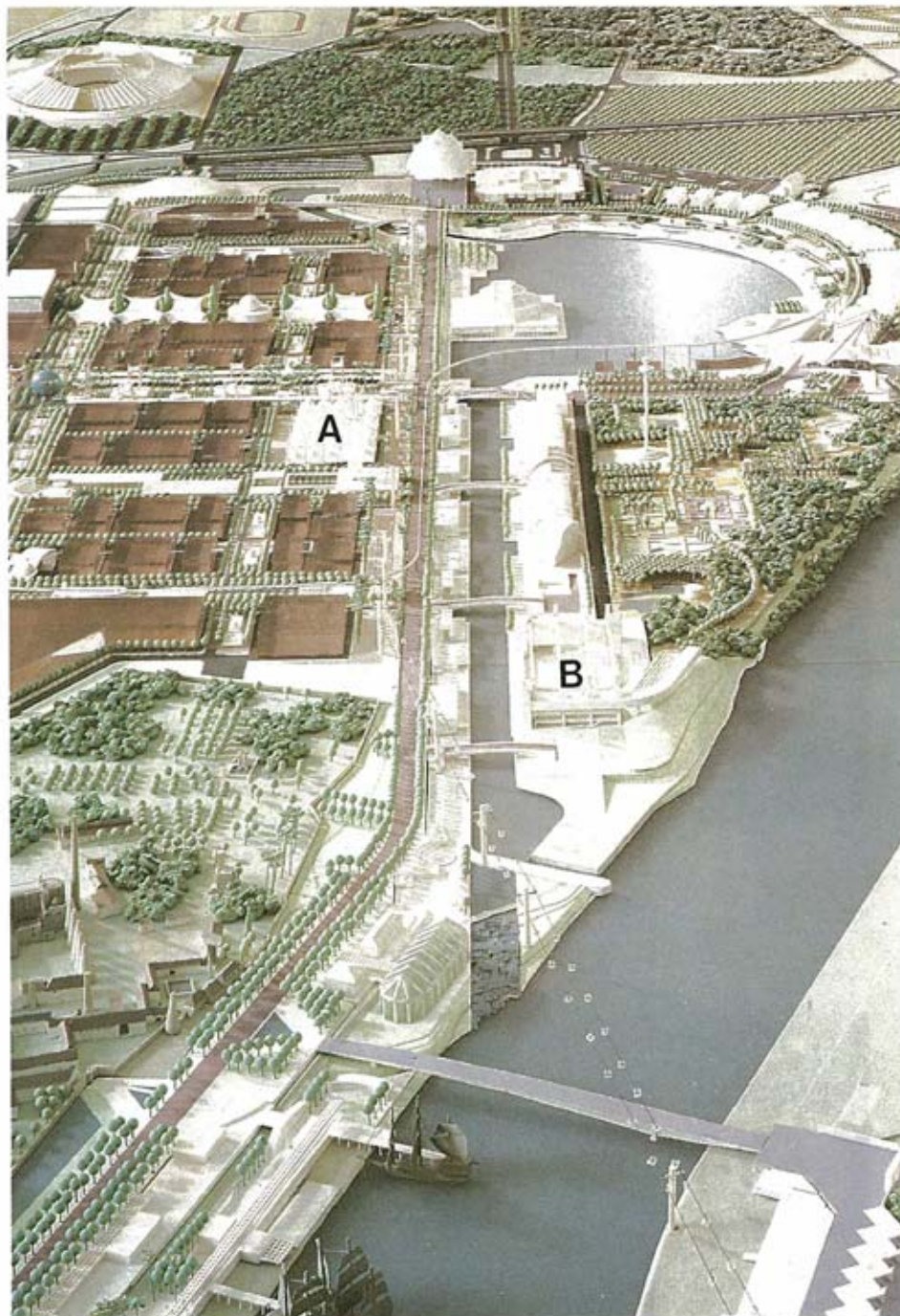
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EXPLORING THE EXPO

John Offord provides some early information on four new venues for Seville's Expo 92



A model of the Maestranza Theatre complex.



The Expo 92 site: the Palenque is shown at A and the Cartuja auditorium at B.

Expo 92 in Seville, Spain will commemorate the momentous event which united two worlds – exactly 500 years will have passed since the discovery of America. On 20th April 1992 the last great universal exhibition of this century will be declared open, and its theme will display and demonstrate how the latest discoveries and innovations have been used to the benefit of mankind.

Let's hope the high tec discoveries presently being employed in the Gulf War will be a memory by then and the state-of-the-art technology you will see and experience at Expo 92 will, as the official text goes, "explore just how this latest technological revolution can be made to work for the world community."

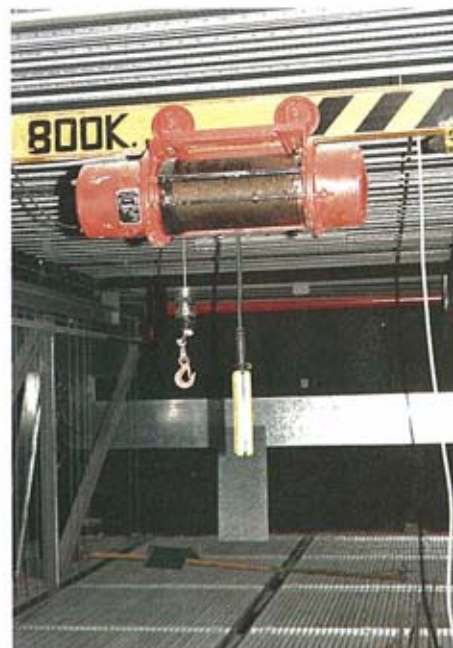
The Expo site is on Cartuja Island, a previously under-used triangle of land caught between the old and the new courses of the Guadalquivir river, and directly facing the old city of Seville. Two new bridges and a restructured road and railway system will provide the people links, and a record number of international participants and pavilions and the programming of an 'Expo Day' and 'Expo Night', give promise of an event of exciting proportion.

There will be ample chance for the experts on theme park style visual spectaculars to test their skills on, audio visual and otherwise, and there will also be plenty of opportunity for performance people to bring extra energy to warm Spanish evenings.

Three major venues will be used within the city itself, including the new **Maestranza Theatre** (opera house), and a further three major entertainment areas are being built on the main Expo site: the huge open air **Cartuja** auditorium, the **Palenque** marquee and the **Expo Theatre**. In addition there will be Cinema Street, the Exhibition Arena, multimedia shows by and on the lake, street entertainment and parades.

The four venues I've highlighted above, and now under construction, will be focused on in this article, and I'll take the opera house first as it's due to open in early April.

When I visited the **Maestranza Theatre** in mid-January I just couldn't believe it would be ready in time, even allowing for the famous last minute rush that brings all new entertainment buildings alive in the final days of fitting out. A study of the 1991 programme however shows that no operatic productions are due yet awhile, so I suppose they will be able to cope with orchestral and choral



One of the six tracked independent hoist points above stage at the Maestranza Theatre.



Architect Alvaro Cervera Escario (left) and technical director Francisco Fontanals Lahoz on site at the Maestranza Theatre. Seville Cathedral can be seen in the distance (left).

presentations out front while the engineering work carries on behind the scenes.

The venue will seat 1650 or 1850 depending on whether the orchestra pit is in use, and it will have the biggest stage in Spain (18 × 19.5m). A large part of this area is constructed from five movable platforms, each on scissor jack hoists and 15 × 3m in size. The grid has 40 × 700k motorised lines and 33 × 500k counterweights. Stage machinery is from Hoffend & Sons and installation is by Kremesa of Spain.

Of special interest is the installation of six hanging points above stage and totally independent of the rigging system. Each one is tracked for movement both ways and can handle 800 kilos.

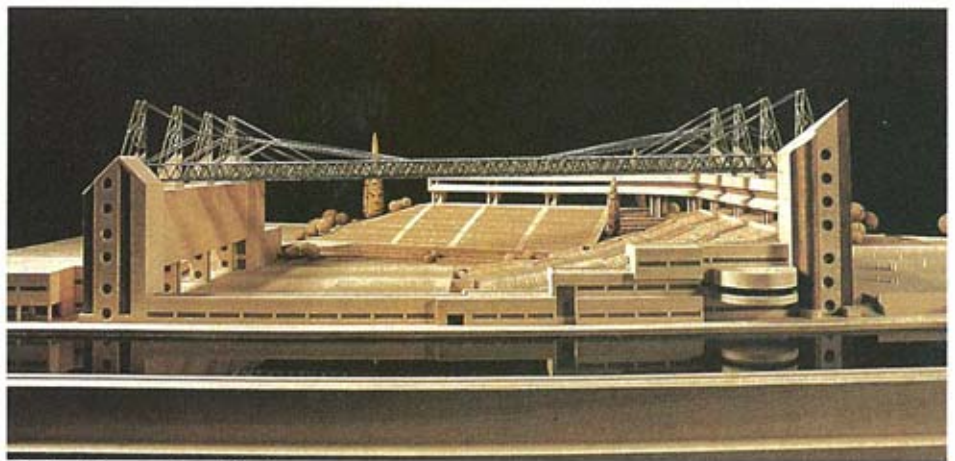
A small circular lighting grid is positioned centrally above the auditorium and there are two lighting slots in the auditorium side walls. A clever addition is the construction of a high level technical gallery which circles the auditorium giving complete freedom for the siting or hanging of lighting and sound equipment.

The complete lighting installation is from ADB of Belgium. Control will be a double and synchronised S28 Series II with E28 special effects control, M68 motorised luminaire control and infrared remote control. All dimmers are Eurodim digital. Control for the studio will include a Tenor and an SM26 manual desk. The majority of the luminaires will be from ADB's Europe range, a total of 420 units, plus 140 luminaires from the 650 range and 78 cyc lights. In addition the lantern stock will include 6 × 5kW TV fresnels, 18 × Svoboda units, 262 × Par 64's and 4 × Niethammer followspots. The control rooms are located centrally within the auditorium. The venue will be used for both opera and concerts and has a reverberation time variable from 1.2 to 2 seconds. Within the complex and located under the foyer area is a large rehearsal and experimental theatre studio able to seat up to 700 people.

As you can see from the illustration within this article, the **Cartuja** open-air auditorium, a night-time only venue, is the most unusual of facilities. Beginning to take on a real shape when I visited



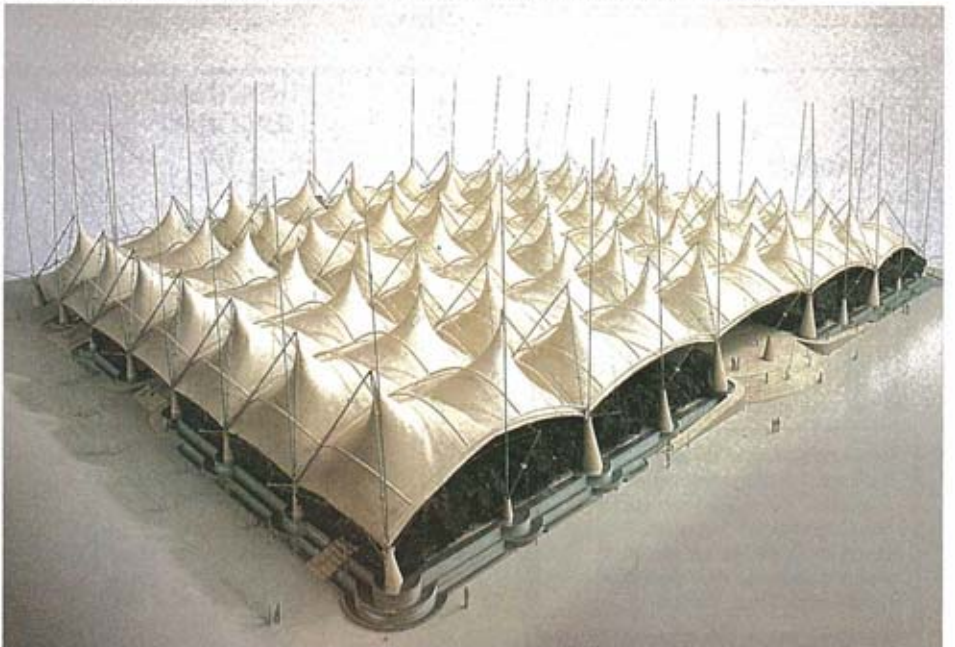
The Auditorio de la Cartuja takes shape.



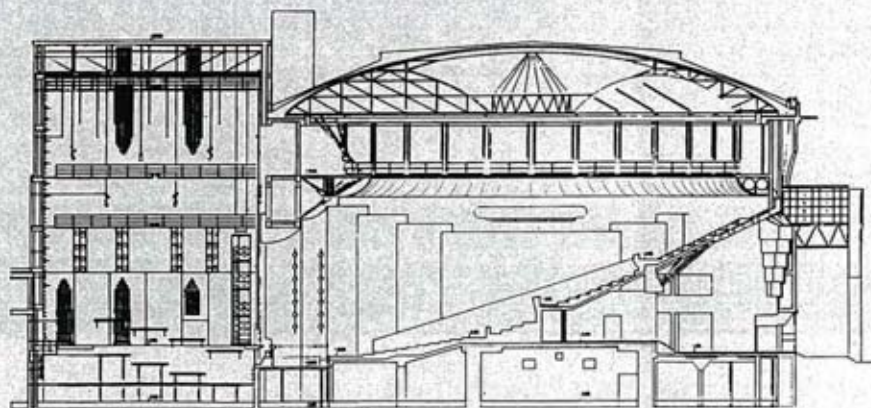
The Cartuja open-air auditorium.



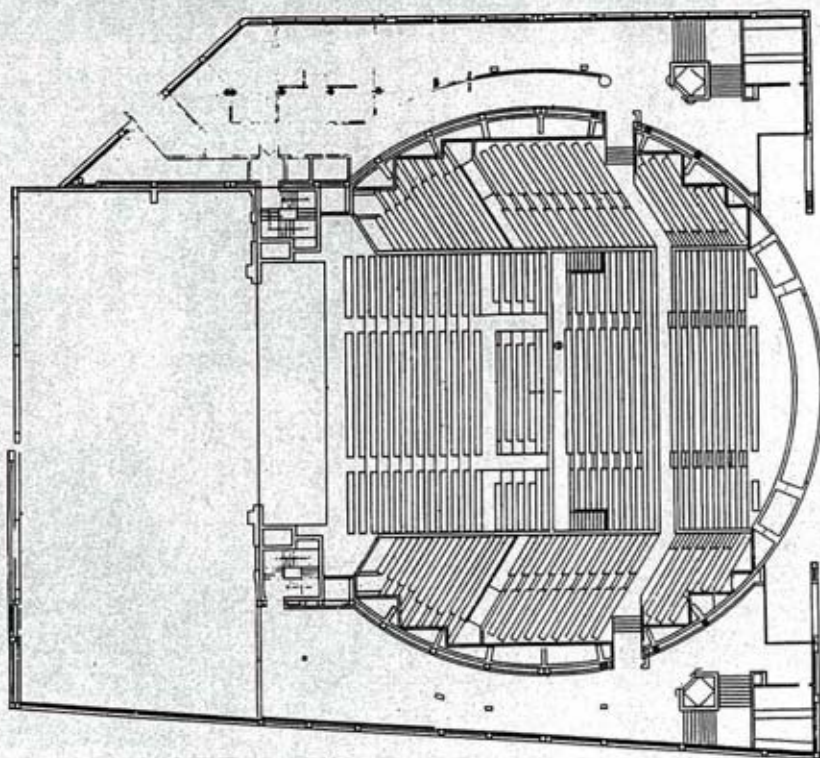
The Palenque marquee (below) and (above) from within, showing entertainment area.



TEATRO DE LA MAESTRANZA Sección longitudinal



TEATRO DE LA MAESTRANZA



the site, it will seat 4,000 spectators in a tiered bank rising straight up from the stage front and another 3000 at least on a stepped bank that rises at an angle to the left as viewed from the stage (the opposite side is bounded by a waterway). The stage area is huge (60m x 60m), and there will be a central platform 30m square within the space.

Behind the massive marble-faced 'proscenium' tower block which houses dressing rooms, rehearsal space, workshops and so on, is a large 'manoeuvring' yard. They say the auditorium will be "technically equipped to house large scale events of various genres". In which case there will have to be a big spend on equipment, and no doubt some companies have already picked up the hint. Most of the gear will be hung from four huge tubular structural bridges, which are braced from the top ends of the towers on the north and south ends, and interspersed cross-beams. A canvas covering will complete the concept.

Another venue, not so large, but just as unusual is the **Palenque** or Palisade. Located at the heart of the Expo site it will be the focal point for all the official ceremonies and national days during the Expo. It is planned as a temporary structure in the form of a covered and air-conditioned square with an area of almost 10,000 square metres. The whole area will consist of tower supports with a canvas covering.

The marquee houses two areas, one within the other. The first is a rest area that will enclose bars, kiosks and terraces. The second is where visitors can enjoy folk concerts and light entertainment events on a large rectangular stage surrounded by a water basin with computer controlled fountains. The seating is on three sides in straight tiers.

The stage consists of a 20m x 25m platform and the grid for lighting and sound equipment measures 26m x 26m with a minimum height of 6m and maximum 10m. Two giant video screens are to be sited on either side of the stage.

I can't tell you too much about the **Expo Theatre** because it hasn't risen from its footings yet and there's very little information on paper. It will seat 700, have a modular stage and a full range of technical equipment on a grid that covers two-thirds of the ceiling surface. It will serve all aspects of the performing arts and obviously be equipped accordingly.

These are just some highlights. There will be existing venues in use throughout the city and much, much more on the Expo site itself. There will be a sports arena, the pavilions themselves, multimedia shows on and around the central lake, and plenty of 'street' entertainment. And I doubt a night will pass without some fireworks somewhere.

The Expo authorities have designated five companies based in Seville as official service companies for Expo 92, and their role is to assist the authorities and participants to execute their projects on the Expo site.

So if you're an equipment, design, installation or service company and want to get ahead in 1992, source the companies concerned and put your case for a share of the Expo spend. I'm pleased to report many PLASA members have already taken the trouble to make themselves known to people concerned.

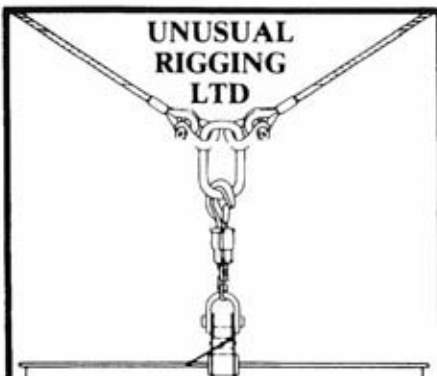


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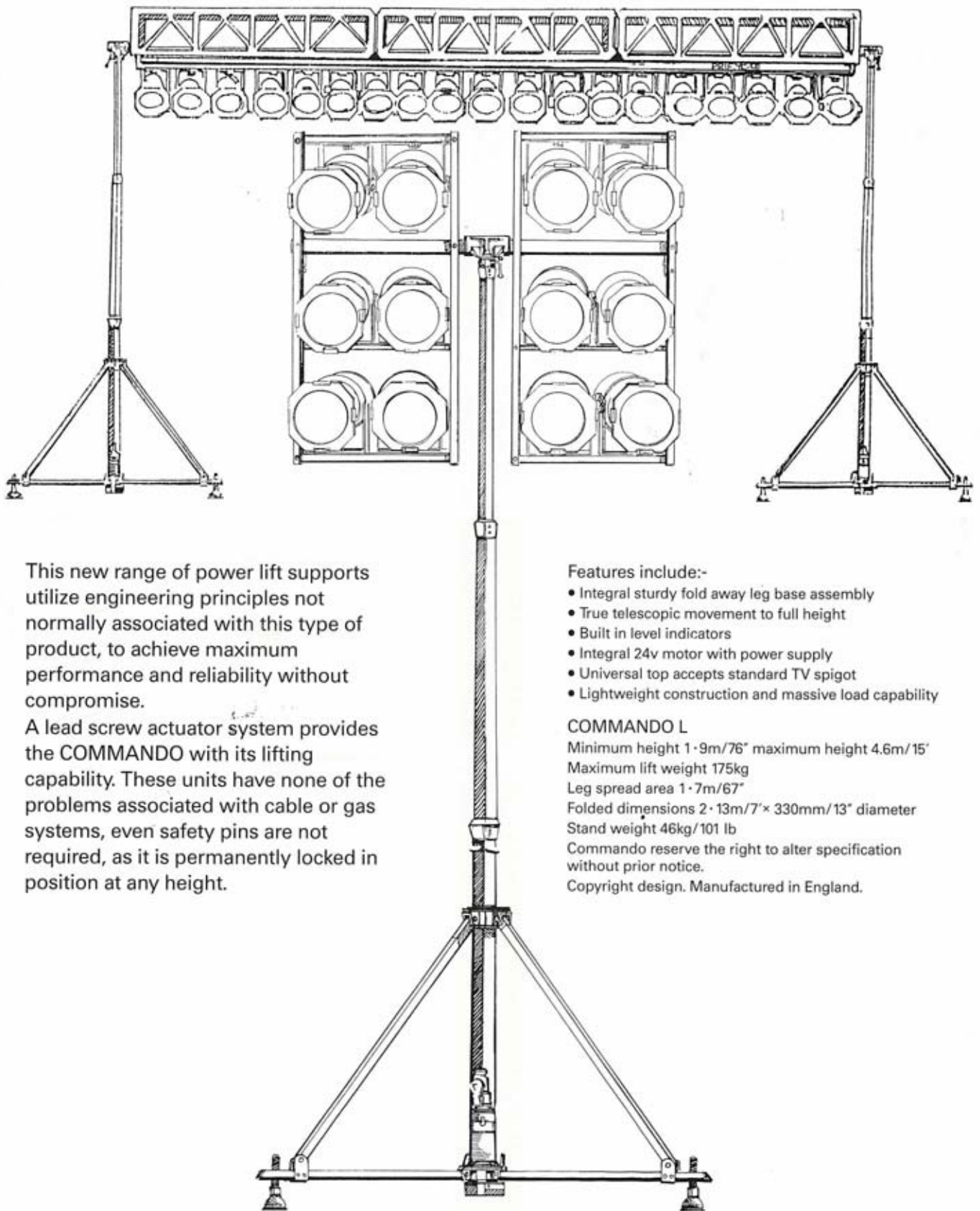
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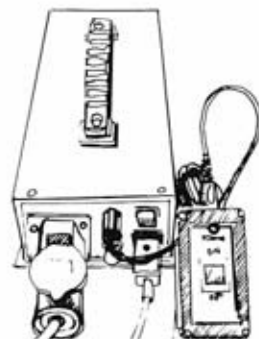
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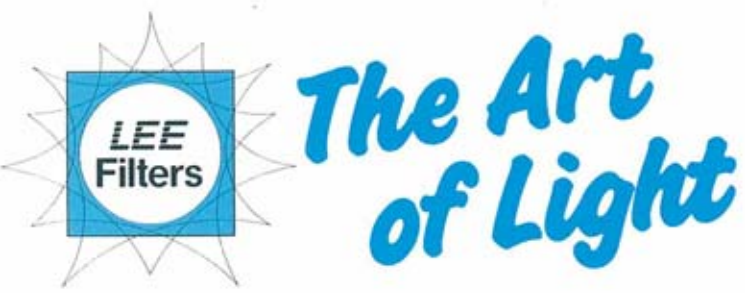
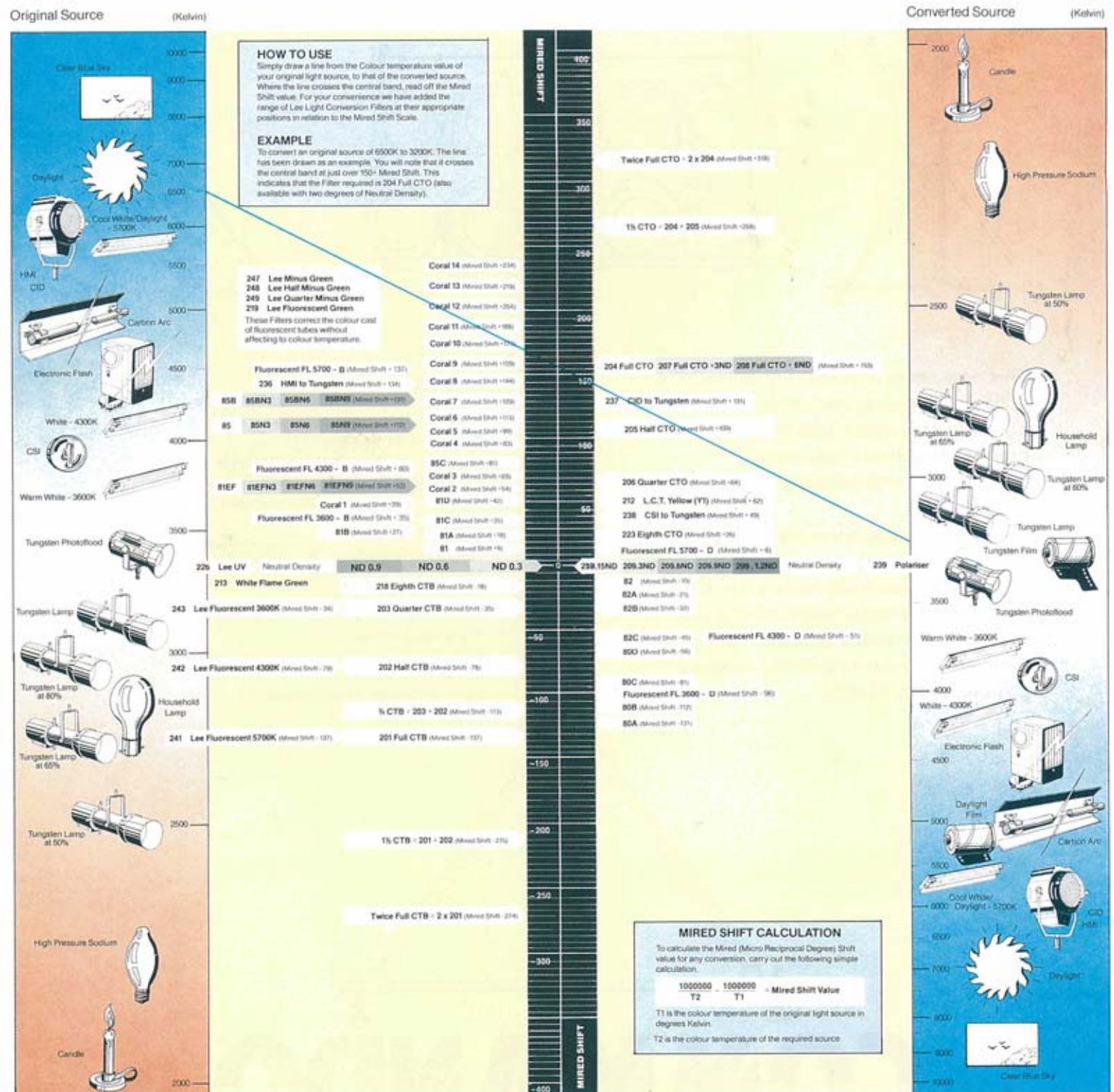


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PLASA News



Philbeach Team get Organising

By the time this magazine is in your hands, the PLASA Light & Sound Show 1991 edition will be on sale under the organisation of Philbeach Events Limited. New show publicity material will be available at Siel in Paris, at the Frankfurt Music Fair, and SIB Rimini during March. Many new enquiries from prospective new exhibitors have already been passed on to Simon Boyd at Philbeach, the director of the company responsible for the PLASA Show. Simon is pictured above with two of his sales and organising team, Tanya Simmons (left) and Liz Shewan. Philbeach contact number is 071-244 6433.

Andy Collier



The vacancy on the Executive Committee of PLASA left after the retirement of Peter Brooks has been filled by Andy Collier of Strand Lighting Ltd.

After being lured into the theatre through the usual route of amateur dramatics, Andy Collier opted for a degree course in electronic and electrical engineering as a preliminary step to working full-time in the theatre. However, a year of industrial training at Strand taught him that it was possible to be involved in the theatre without having to suffer the unsociable hours, low pay and insecurity. After graduating, he

returned to Strand, working on special products for theatres and TV studios throughout the world. After holding a variety of positions in engineering, Andy moved to marketing as product manager for electronics in 1982 where he remained until 1987 when he left Strand, and the UK, for Italy.

There he assisted Mike Lowe in founding Teatro srl during which time he was able to concentrate on luminaires in contrast to his role in electronics for Strand.

After three years in Italy, Andy returned to the UK, to take up his current position as business development manager for stage lighting.

PLASA in Attendance

PLASA will be present at the big trio of Spring events in Europe. Manning the stand at Siel will be Annabel Williams and Alison Hunt; at Frankfurt Jan Weir and Annabel Williams will be in charge; at Rimini chairman Kevin Hopcroft and John Offord will be on duty. Kevin Hopcroft and John Offord will also attend both Siel and Frankfurt on various days. All members are welcome on the stands.

Eastern Europe

The PLASA office is making plans for a seminar on the subject of exporting to Eastern European countries. Any members interested in the subject are asked to contact Jan Weir at PLASA to register particular areas of interest so that the speakers and content can be organised accordingly.



Jack Millison of the Rede Group gets the PLASA Quality Management Systems seminar under way.



Jack Millison with PLASA chairman Kevin Hopcroft, standards sub-committee chairman Tony Akers, and Jan Weir of the PLASA office.



John Brooks discusses scheme implementation.

PLASA and Quality Management Systems

A couple of dozen PLASA members attended the Quality Management Systems Seminar on January 22 at the Birmingham Repertory Theatre, following a morning visit to the International Convention Centre next door which is due to open its doors in early April. The 11-venue centre is a highly impressive complex, and highlight is the Symphony Hall, the new home for the City of Birmingham Symphony Orchestra, Simon Rattle and all.

Kevin Hopcroft, Chairman of PLASA, welcomed members present and standards officer George Thompson gave a briefing on BS 5750, the relevant standard, before Jack Mollison of the Rede Group went into fine detail. He spoke for well over an hour, but the length of time went quickly as he explained firstly what quality was about and then gave the background to the development of the BS 5750 from the old defence standards that lead to the present series of standards in 1987. He then defined the various areas the parts of the overall standard referred to, and where they were appropriate to our industry. He emphasised that it wasn't a product standard but a standard on the company itself.

Following a short video presentation, John Brooks of the Rede Group discussed Quality Systems Implementation of various schemes. The seminar closed with an open forum.

Jan Weir and John Offord from the PLASA office were in attendance.



PLASA's standards officer George Thompson (left) with Peter Coleman of Midland Theatre Services.

Smoke Machine Safety Report Ready for Print

Now at the final proof stage, PLASA standards officer George Thompson's report will be printed in the near future. PLASA members will be advised on availability in due course.

LDI at Reno

Due to take place in Reno, Nevada during November, PLASA members will shortly be mailed details of the PLASA/DTI scheme for the event. Eastbourne staff member Annabel Williams will be taking care of the arrangements.

Ruth in the States

While John Offord, Annabel Williams and Alison Hunt are in Paris for SIEL, Ruth Rossington flies off to Boston and New York to attend meetings of OISTAT and the USITT convention in Boston. Jan Weir and Pam Revington will be left to hold the fort in Eastbourne.

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PLASA Members get the first bite at Seville Expo

On January 14, a 10-strong team of PLASA members set off from London's Heathrow airport for an intensive three days of presentations, lobbying and site visits in Seville in Spain, base for Expo 92 – the last universal exposition of the century.

The trip was organised by PLASA in conjunction with officers from the DTI and on-the-spot back-up from the British commercial consul in Seville, Joe Cooper. Six presentation sessions involving all the companies present were held at the Colon Hotel in central Seville, and these were followed by a special reception on the Wednesday evening and a day-long visit to the Expo site on Thursday.

All who took part in the trip were greatly appreciative of the work put in by Joe Cooper, who had managed to persuade the vast majority of firms servicing the Expo to attend the sessions, and put themselves at the mercy of the PLASA member companies concerned. John Offord from the PLASA office acted as 'team leader' and introduced the various presentations.

A contact list of company representatives who attended was compiled by the PLASA office and sent to all of the sales team on their return. For those who took the time and trouble to make the trip, it gave them the chance to meet the service company directors and leading personnel face-to-face. Hopefully, they will be at the head of the queue when the order for equipment and services start to be placed in the near future.

A feature describing some of the new Expo venues can be found on pages 30-32 of this issue.



Members of the PLASA group pictured at the Expo Site in Seville.



PLASA group members with invited guests at the reception, Hotel Colon.



British commercial consul Joe Cooper (left) with Graham Bowen of the Eurolight Group.



Jaime Fenoll of Astro Imagen with Neil Rice of Optikinetics and the group's interpreter in Spain, Rosa Zaragoza Koblischek.



Another group picture, proving that orange trees do line the streets of Seville.



Le Maitre's Dick Carrier and CCT's Ken Rickman examine the Expo Site model.



Francisco Fontanals Lahoz (left) of the Teatro de la Maestranza with Graham Pusey of All Set International, Joe Cooper, and Don Scarrow of Arco Iris Producciones.



Mariola Guglieri and Vicente de Felipe Oroquieta of CYP with Carol Welsh of Theatre Projects Services and Daryl Vaughan marketing manager for the Lighting and Sound Division of the Samuelson Group.



Dick Carrier (centre) with guests at the Hotel Colon reception.

WILKES HARDY PERENNIALS

Ruth Rossington learns the art of Iris Diaphragm manufacture

Bexhill is a small seaside resort on the south coast of England. In a tiny alleyway, away from the main part of the town, stands a rather unassuming and somewhat modest building. Originally an old dairy, the premises are now the manufacturing base of the iris diaphragm industry in this country. First impressions are lasting impressions as they say, and this couldn't be more true in the case of Wilkes Iris Diaphragm Co.

There are no expensively furnished executive offices, or corporate marketing plans adorning the walls, in fact, there isn't even a reception area. The door leading from the road takes you straight into the heart of the operation; the main tooling area, home of the massive engineering dinosaurs — complete with oiled rags and alloy offcuts.

Heading up a small wooden staircase, and through a series of intricate corridors one arrives at the office of Keith Woods, managing director of the company. Not even here is there any element of show, just a practical working area

for getting on with the job.

A little time spent with Mr Woods, and a quick tour of the premises is all one needs to ascertain that here is a company that works within a traditional framework — not surprising as Wilkes has not long since notched up its century. There is no streamlining to speak of, and no conveyor-belt technology. It's the type of solid industry that's always appealing because it cuts through the hype and showmanship too often associated with this industry, and gets straight down to the nitty gritty, which, in this case, is the manufacture of iris diaphragms. I don't wish to give the impression however, that Wilkes is stuck in the dark ages — far from it, there's a lot of expensive machinery around, and it's being put to good use.

So, for the uninitiated it might be pertinent at this point to explain just exactly what an iris diaphragm is before delving into the technicalities involved. Quite simply it's a small attachment that is placed on the front of a spotlight or other light fitting which determines

the amount of light travelling from the unit, by the arrangement of segmented plates, which are opened or closed by the means of an attached handle. And there in a nutshell you have the staple diet of Wilkes' business. Simple yes, straightforward no — there's a lot more to this game than meets the iris.

Curious to know more, I pressed Keith Woods for details. Irises are either of incoloy or stainless steel. Most of Wilkes irises fall in the incoloy category, because it can withstand quite high temperatures, of up to 500 Centigrade. Wilkes don't actually guarantee the temperature threshold of their irises as there are many variations in heat intensity across different lanterns, but Keith Woods pointed out that though they're not indestructible (if enough heat is applied they burn out), they're as near as damn it.

Size-wise, Wilkes are able to be extremely flexible, though there are obviously limits to how small an iris can be; 16mm is currently as low as the company goes. At the other end of the scale however, the sky's the limit — well almost. To date the largest one produced measured some 24 inches and, wait for it, was used in a promotional video for a James Bond movie; and guess what, as the iris opened, a curvaceous beauty emerged. However, this is not typical, so back to business.

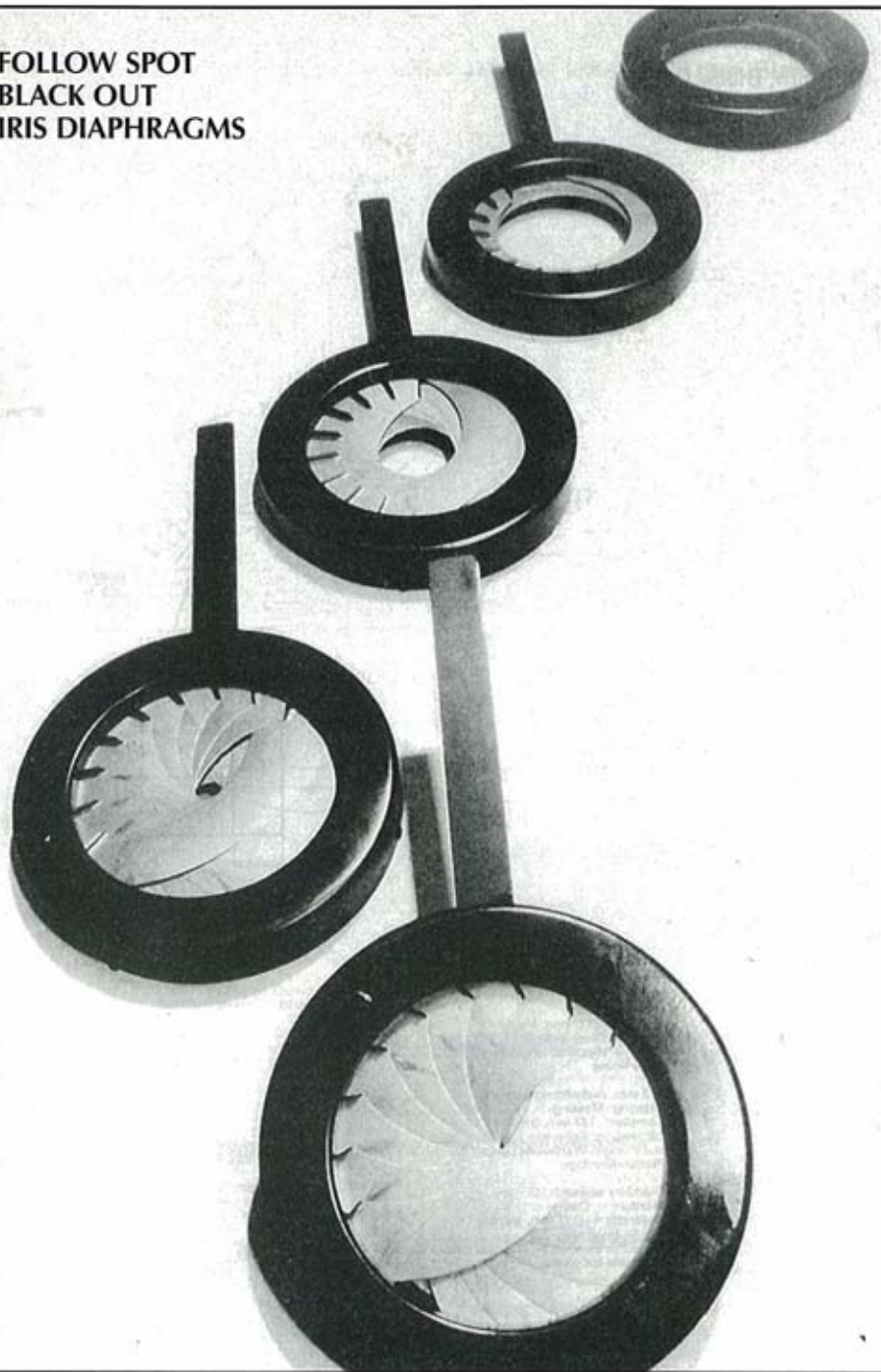
Achieving total blackout is one of the things high on Keith Woods' list of priorities. The shutter iris reduces light output quickly but because of the nature of the overlap of the leaves, there always remains a small hole in the centre that still allows light to escape. The only way to effect blackout is to take out some of the leaves, hence the popular nine over nine system where the leaves are on dual planes of the iris, which creates the necessary overlap. Whilst this design provides a more effective gradual blackout, there is a slight problem in that since the leaves are in two planes, it's difficult to get a sharp edge. The result is that the focus is different at either side of the iris — usually in the focal plane of the light — so if the focus falls on one edge, the other becomes soft. London-based Light Works use the iris diaphragms in a projector as a fader rather than an actual iris, because they prefer not to have the harsh edge.

To get a sharp edge blackout, Wilkes have added to the shutter iris a small plate which flicks across to cover the centre hole, and block the escape of any light.

To improve the movement of the iris, the company's developed the idea of an upturn at the fixed edge of each plate. Each leaf is riveted to the striking plate and pivots as the handle is moved, the upturn causes it to close down smoothly. Most other manufacturers adopt the idea of the pin iris, so instead of an upturn there's a pin which runs in a long slot; it operates on the same principle as all irises, but according to Keith Woods these are not an option for Wilkes. "They're a lot more difficult to assemble and in most cases they're not as good, though, having said that, if the engineering is good, then they can be better."

More recently, Wilkes have produced a mechanical fader for use on discharge lamps which is a departure from traditional iris assembly. The fader only uses four leaves and is arranged so as to allow light to pass through across the full diameter as soon as the lever is operated. The leaves then clear the aperture completely to allow full use of the available light. The first size which has just recently gone into production has a maximum aperture of 55mm and overall depth of 119mm, with further sizes planned to follow throughout the year in

FOLLOW SPOT BLACK OUT IRIS DIAPHRAGMS



consultation with lighting manufacturers.

Having gleaned this much about the present day practices of Wilkes, I was interested to learn how the company came to be involved in the manufacture of iris diaphragms. Wilkes was established in 1884 by Keith Woods' grandfather James Wilkes. He worked at the time for R & J Betts who imported their irises from France. The tension in France prior to the first world war caused problems and the company decided to manufacture their own irises. James Wilkes was given a free hand to develop an iris and was successful enough to set up his own company. He went on to supply several microscope manufacturers in the UK, but never wanted, or attempted, to push the company into a bigger league, and so Wilkes went on in the same vein until the early sixties when the decision was taken to expand into the lighting trade. A well-known lighting manufacturer of the time, Major, approached Wilkes to supply them with iris diaphragms for their lighting units. Major were closely followed by CCT, who had recently formed, and who asked Wilkes to produce what is now their most popular iris, the 101. Strand were next in line and they used Wilkes for some time before deciding to manufacture their own. However, this didn't prove satisfactory and they returned to Wilkes in the seventies, and have retained them as sole supplier ever since.

Having dealt with the past, I asked Keith Woods the way forward. "The next step is basically motorising the iris by the attachment of remote control. Customers usually prefer to attach motors themselves, so I think the way to go is to actually supply them with a motor drive or at least the facility for attaching one," he explained. "Obviously it won't require a great deal of re-design as the iris itself will remain exactly the same."

An engineering firm has been contacted with regard to the design of the motor, but, as yet, the proposal remains in the early stages and nothing has been formalised. No time schedule has been proposed, but Keith Woods hopes that something will be available by the end of the year. More than that he wouldn't say.

The future looks good for Wilkes; as the only sole manufacturer of iris diaphragms in the UK, they've effectively sewn up the market quite nicely. Glancing down their client list, it struck me that it read like a Who's Who of the lighting industry. They supply, as already mentioned, Strand Lighting with all of their irises and number CCT, Lumo Lighting, Pulsar, Martin, Coemar and Teatro amongst their clients. Not bad for a small manufacturing facility that employs only eight people, and three of those part-time. A measure of Wilkes' success is due to their operating within a very specialised sector of the industry. I asked Keith Woods why there aren't more iris manufacturers around.



A lot of the profits have been ploughed back into the company to modernise the machinery and tooling areas.

"The market couldn't stand a great deal of competition, it is quite simply not big enough. Coupled with this, the machinery is extremely expensive and requires a lot of capital expenditure."

There are other companies who manufacture diaphragms, but these tend to be incorporated within the production of the lighting unit as a whole, with the iris being an integral part - but these are few and far between. It seems odd that lighting manufacturers of major stature don't incorporate the iris diaphragm into the design of their lighting units - presumably they have both the motive and resources to do so. However, as Keith Woods explained, the initial cost of setting up the manufacturing facility, together with the funding required for short-term research, presents an imposing and unattractive profile against the more instantly accessible, cost-effective alternative supplied by Wilkes. "A great deal of work goes into the manufacture of iris diaphragms. A large initial outlay in time and money is required. Major lighting manufacturers prefer to have them as a separate fixture, rather than an integral feature. If the iris presents problems, they can quite simply remove it, replace it with a new one, and return the old one."

Aside from their work for the lighting industry,

Wilkes have not forgotten their roots and still continue to supply diaphragms for scientific and other purposes. In fact, the company claims to have every British microscope manufacturer as a customer. The smallest iris they produce, the 16mm, is used mainly on gun sights and small scientific instruments which require some sort of light control.

In an industry such as this, with so much state-of-the-art, up-to-the-minute, keep-ahead-of-the-rest technology, it's rare to come across a company that insists on operating in a more traditional mode, and one that is keen for things to stay that way. There are concessions to the modern day of course - no company would be complete these days without the obligatory computer and fax - but no more than is necessary. With a turnover approaching £350,000, and exports to a worldwide network accounting for 60-70% of their trade, this approach doesn't seem to have done them any harm. Wilkes have taken time to build a reputation, and word of mouth has proved a powerful ally for the company. Their policy is not one of active sales, and fortunately it doesn't have to be, the phone always rings twice. But perhaps now it's time Wilkes started blowing their own trumpet.



Close-up on part of the precision process.



Keith Woods, Wilkes' managing director.

EQUIPMENT *News*



Strand Board

An international-standard versatile lighting control board aimed at smaller venues such as clubs, pubs, studios and theatres, has been launched by Strand Lighting.

The MX range is designed to be simple to operate and capable of being used throughout the world by operators with varying levels of experience. It blends both manual and memory controls in one easy-to-use system. Software included as a standard package with MX comes in English, German and French. It offers up to 48 channels of two-scene preset faders, electronic patching for up to 512 dimmers, allows rapid recording of up to 192 memories in four pages and has 24 real time programmable effects.

The MIDI interface allows the playback of lighting states and effects from musical instruments. This enables performers to preset their own lighting 'looks' without the need for a lighting operator. Software selectable multiplexed outputs SMX, DMX512, D54 and AMX192 are all included in the standard console, making for ease of operation throughout the world. An optional memory card is also available for the library storage of data. For further information contact Strand in Isleworth, telephone 081-560 3171.

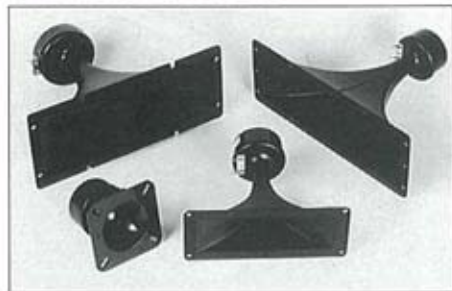
Doughty Stands

Doughty Engineering have launched two new equipment stands. Called Club and Studio, they are, as their names imply, targeted at two distinct markets.

Club is a lightweight, highly durable range and finished in bright zinc. Offering an extensive range of fitsments capable of fulfilling most applications, the Club range is primarily designed to appeal to the educational and mobile DJ markets, where a high degree of flexibility is required.

Alternatively, Studio is a quality range, manufactured from high grade steel with a chromium finish. The stands in the range are designed to withstand the rigours of the hire market as well as retain their looks. Brochures covering both ranges are available from Doughty in Ringwood, telephone (0425) 474481.

Celestion J Series



Celestion International recently won the distribution rights of the Foster line of high frequency horns and tweeters. Previously distributed in the UK for the last 15 years by Fane, future distribution of the J44, J73, J104 and J105 which are now referred to as the N05, N03, N02 and N30 respectively, will now be handled by Celestion. For further information contact the company in Ipswich on (0473) 723131.

Peavey MIDI Master

The new MIDI Master from Peavey features eight MIDI inputs and eight MIDI outputs with two totally independent MIDI processors. MIDI data from up to eight keyboards may be assigned to any or all outputs or either of the two processors. In addition to routing, processing and continuous controller support, there is a MIDI merge function that is capable of merging the output of the two internal processors. These are still available for the eight outputs during a merge application. Eight filters are available to screen out data that is not required for other MIDI products in the chain after the MIDI Master. The filters are set up for note on/off, aftertouch, control change, program change, pitch bend, system common, system real time and all notes off.

The MIDI Master has the capability to send out program changes on any output with up to eight program changes assignable to any MIDI channel and output. Along with the program changes, a controller 7 message will then follow the program change message. Controller 7 is a volume message and is user adjustable. The volume of eight devices may be adjusted from 0 to 127. For further information contact Peavey in Corby, telephone (0536) 205520.

JBL Control Expands

With the addition of three new loudspeakers, JBL have now completed their range of universal speakers.

The Control 1AT is a standard Control 1 with a 60 watt 100 volt line transformer mounted internally. The Control 1CM is a ceiling flush-mounting version of the Control 1AT, whilst the Control 1AW is a weather-proofed version of the Control 1AT. Identical to the AT in all respects, but with water tight protection, the AW will provide full bandwidth and dynamic performance for a great variety of outdoor applications. For further details contact JBL in Slough, telephone (0753) 76911.

Soundcraft Spirit

In response to the needs of professional and semi-professional musicians alike, Soundcraft have introduced a new range of non-modular consoles the Spirit Studio, for multitrack recording and Spirit Live for sound reinforcement applications.

The Studio, an In-Line console, is available in two frame sizes, 16-8-2 and 24-8-2. There is no shortage of inputs, since in mixdown mode the multitrack monitor inputs double as extra line inputs which in turn transforms the 16 channel Spirit Studio into a 32 input mixdown console, the 24 channel unit provides a total of 48 inputs.



The Live is a professional PA mixer, at home as part of a permanent sound system for a conference venue or as the mainstay of a touring PA rig working around small clubs and theatres. Available in three frame sizes, 8-3, 16-3 and 24-3 the Spirit Live provides an additional mono output alongside the main stereo faders. An optional expander unit is available for the two smaller frames, allowing an extra eight inputs to be added when required.

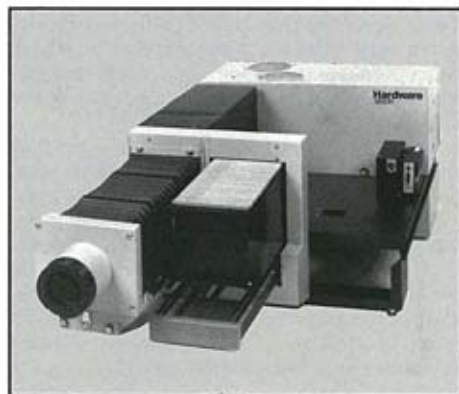
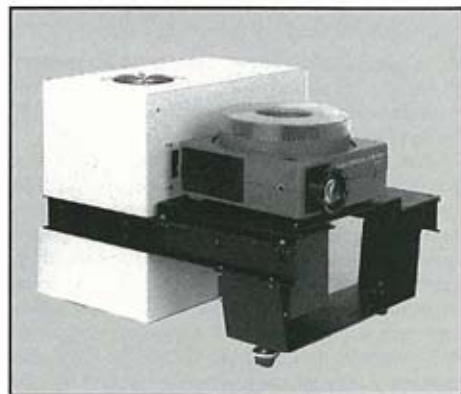
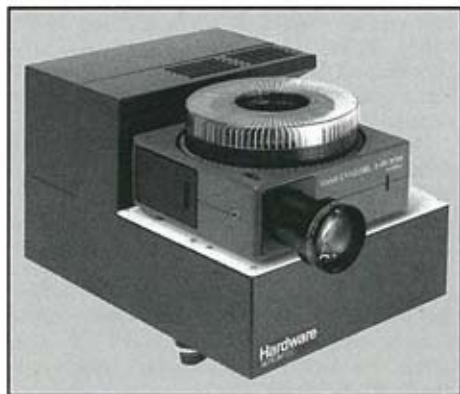
Lytemode List

Lytemode has introduced a new price list for its range of architectural lighting controls. The list includes many new products not included before and most significantly, for the second time in three years, Lytemode has made what it calls substantial price reductions on many of the most popular items. For further details contact the company in Feltham on 081-751 5449.

Hardware for Xenon

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All Hardware for Xenon equipment is portable and operates automatically. It is compatible with all control devices : remote control units, timers, synchronizers. In addition, Hardware for Xenon equipment is compatible with dissolve multi-division systems.

XENON 600 W - 4 000 Lumens 24 x 36 mm slides

A compact projector that enables ambient light to be maintained for taking notes in a conference room. Image up to 7 metres wide.

XENON 1 000 W - 8 000 Lumens 24 x 36 mm and 60 x 60 mm slides

The 24 x 36 mm model is often used in multi-division mode for conferences, sales conventions and stands. Image up to 10 metres wide.

XENON 1 600 W - 14 000 Lumens 24 x 36 mm and 60 x 60 mm slides

Same applications as the 1 000 W projector. The 60 x 60 mm model can be used for theatre backdrops, giant posters, and projecting decors for films and television programmes. Image up to 14 metres wide.

XENON 4 500 W - 70 000 Lumens 180 x 185 mm slides

Designed for giant projection in large auditoriums, on to monuments, châteaux, inflatable structures or any medium created for a specific event. Image up to 40 metres wide. The 4 500 W projector is compatible with standard multi-division systems. The slide changing is microprocessor controlled with a removable 40 slides tray and a rapid search random access.

XENON 7 000 W - 100 000 Lumens 180 x 185 mm slides

Same applications as the 4 500 W projector. Image up to 50 metres wide.



FOLLOW SPOTLIGHTS (1 600 TO 7 000 W)

Hardware for Xenon has developed a new generation of follow spotlights that provide :

- twice as much light as follow spotlights currently available.
- photographic quality definition by means of a 5-lens zoom that enables the diameter of the beam to be varied from 3 to 12 metres at a distance of 50 metres.
- optimized cooling of the coloured filters, the iris, the gobos, etc.

XENON 1 600 W - 16 000 Lumens. Use distance : 15 to 150 metres.

XENON 2 500 W - 27 000 Lumens. Use distance : 15 to 200 metres.

XENON 4 500 W - 60 000 Lumens. Use distance : 15 to 300 metres.

XENON 7 000 W - 85 000 Lumens. Use distance : 15 to 300 metres.

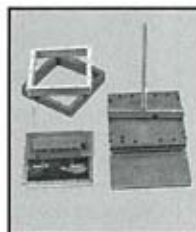
Hardware for Xenon offers a "short model" follow spotlight in 1 600 and 2 500 W versions.



SKYLIGHTS (2 500 TO 7 000 W)

The Hardware for Xenon skylights are leak-proof. The beam movement can be programmed via a 0,10 volt controlled mirror and 0,10 volt controlled shutter.

**XENON 2 500 W - XENON 4 500 W
XENON 7 000 W.**



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Megas from Soundtracs

Soundtracs will launch their new Megas range of consoles at AES, Paris running from February 19-22. Using the latest techniques, the Megas Stage, Studio and Mix consoles have been developed to provide a wide variety of products at low cost, claim the company. The Megas Mix is a general purpose console for a variety of applications where a maximum of four group busses are sufficient. The various frame sizes can be loaded with three types of input modules, and a maximum of two dual group modules providing four audio groups. The Megas Stage is a dedicated sound reinforcement console with specific facilities. The various frame sizes can be loaded with mono and stereo input modules, a maximum of four dual group modules providing eight audio groups. Moving coil VU meters and group mutes are standard.

The Megas Studio is a dedicated recording console with 16 or 24 group busses either with or without patchbays. The variety of frame sizes can be loaded with both mono and stereo input modules, plus up to eight dual group modules or 12 dual group modules to provide 16 or 24 group outputs and tape returns respectively. It also has the advantage of being fitted with MIDI mute automation. For information, contact Soundtracs in Surbiton on 081-399 3392.

Transportable Music System

Cambridge SoundWorks of Newton, Massachusetts has announced the introduction of Model Eleven, a new transportable component music system designed by Henry Kloss.

Weighing just 23 pounds and intended for use with portable CD and/or tape players, Model Eleven consists of a miniature three-channel integrated amplifier, a pair of two-way satellite speakers, and a unique dual-function BassCase. For further details contact the UK operation in High Wycombe on (0494) 715414.

Restyled Espace



RCF have added a new model to their Espace series of loudspeakers. The 250 SM is a floor monitor which employs the same speaker elements as the 250S (RCF L12/565 plus N255 tweeter). The directivity control of the 250 SM and smooth frequency response allows its use close to stage microphones. The 250 SM now joins the other five models in the series which range from the compact Espace 200S which utilises the RCF L12CX3 coaxial 12" loudspeaker component, through to the full range Espace 600S which is available in symmetrical pair systems. Further improvements have been made to the Espace series including new constant directivity horns on certain models, and the RCF exclusive P.T.C. high frequency protection on all models. For further information contact RCF in Laidon, telephone (0268) 415150.

Aiding Design

Tannoy-Audix has produced a sound system design calculator for consultants, architects and contractors. For further details call Tannoy in Saffron Walden, telephone (0799) 407888.

Toa Get Rugged



A rugged splashproof loudspeaker system especially designed for application in harsh environments, has been introduced into the UK by Toa Electronics Ltd.

The BS-20W speaker unit is waterproof and has a splashproof ABS resin enclosure painted to protect it against ultra-violet rays. For this reason the BS-20W is equally at home in high humidity temperatures as well as in much colder environments, claim Toa. The specification incorporates a 13cm woofer and a piezo driver unit with a uniform sound dispersion pattern of 30 horizontal and 90 vertical. The BS-20W also features a 20 watt rated power input and 94 dB/w/m output sound pressure level. For further information contact Toa in Brentwood, telephone (0277) 233882.

Artistic License IO Cards

Artistic License have announced the launch of their new range of PC compatible I.O. cards. They are supplied ready to go with software drivers, batch file drivers, diagnostics, example programmes and a comprehensive manual.

The range includes Opto-isolated, TTL, Darlington and Relay cards. Multi-channel analogue, stepper motor and time code cards will follow soon.

Aimed at the audio visual and broadcast industry, the cards offer an effective solution for show automation, claim Artistic, who also provide support services including custom hardware and software design, development and consultation. Details are available from the company in London, telephone 081-961 9520.

Audix High Resolution



In order to overcome some of the acoustical limitations that not only plague near-fields, but are still present in many of the larger, more expensive play-back monitors, Audix have introduced the HRM-1 High Resolution monitors.

The HRM-1a are accurate two-way near field monitors featuring 61/2" polypropylene, curvilinear low-frequency drivers with rubber surround and dust cap for extremely low self noise. Unlike other near-fields that have 61/2" drivers with 1" voice coils, Audix has incorporated a 11/2" voice coil for twice the motor area. For information contact Audix in Pleasanton, telephone (415) 463-1112.

All Together Now

Databeat Digital Music Systems has added Karaoke to their range of products. Databeat's customers now end up with two systems (Karaoke and the DJ system) for little more than the price of one, claim the company, and have a system that won't be redundant if Karaoke goes out of fashion. Karaoke is currently increasing wet sales by 2-2.5 times and demand is very strong.

The Databeat interactive DJ system allows clubs and other users to run with or without a DJ. It can run automatically totally unattended for indefinite periods and can be programmed to play what styles, tempos, era and even chart positions are wanted at any given time. In the hands of the DJ it can be integrated into conventional DJ consoles and used as the 'LP library' mixing in and out of normal vinyl, or can be used as the sole sound source.

New distributors for Databeat have been appointed in the following countries: Germany, Mood Music Deutschland GmbH, Bad Soden; Norway, CMS Lydsystemer, Oslo; Holland, Mafico BV, Rotterdam; Japan, Comnet Co, Tokyo. Final negotiations are under way with major distributors in the USA, France, Thailand and Indonesia, but Databeat is still keen to find suitable companies in Italy, Spain and elsewhere. For further details contact Databeat in Theale on (0734) 306230.

Midas Launch XL3



Midas has launched the new XL3 live performance console. According to the company a powerful range of facilities provide all the flexibility needed for a console which doubles as a monitor or front of house. Facilities include 16 aux send/sub groups, totalling 18 discrete mixes into stereo with individual pre-post and on-off, eight VCA groups, two output VCA groups and mix to master level and pan. The aux send master/sub group output section also features a 2 by 16 matrix together with a separate stereo record output.

The XL3 is the second console to be designed and manufactured since Klark-Teknik bought the Midas name in 1987. Other Midas products include the XL88 8x8 stand alone matrix mixer, which effectively expands, say Midas, the output facility of any professional mixing console. For further information contact Midas in Kidderminster on (0562) 741515.

Nexo at AES

Nexo will launch two new products at the European AES in Paris (Feb 19-22). The TS2400 Touring System is the first enclosure from the new top of the line range. The unit features new 3" diaphragm neodymium treble drivers, a dedicated TDController, a compact design, and has six separate flying points with Aeroquip track for ease of flying and angling.

Nexo's new LSub range has been designed to provide high power servo-controlled low and very low frequencies, to augment systems when extended bass response is required. The range currently features two enclosures, the LS2000 and LS1500, together with the dedicated LS TDController. A smaller system (LS1000) is currently under development and will be available later in 1991. For further details contact Nexo in France on (33) 1 48 63 23 01.

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LIGHTING DIMENSIONS: WHITE LIGHT'S IRISH CONNECTION

John Offord spends a short week-end in Dublin

Andrew Leonard, general manager of Lighting Dimensions (WL) Limited, sent me by fax a hand-drawn map and route directions to their new base at Long Lane in Dublin city. Comparing this to my Berlitz pocket book guide was proving difficult until I realised that I had to turn one of them upside down (I won't tell you which, because I promised Andrew I wouldn't let on).

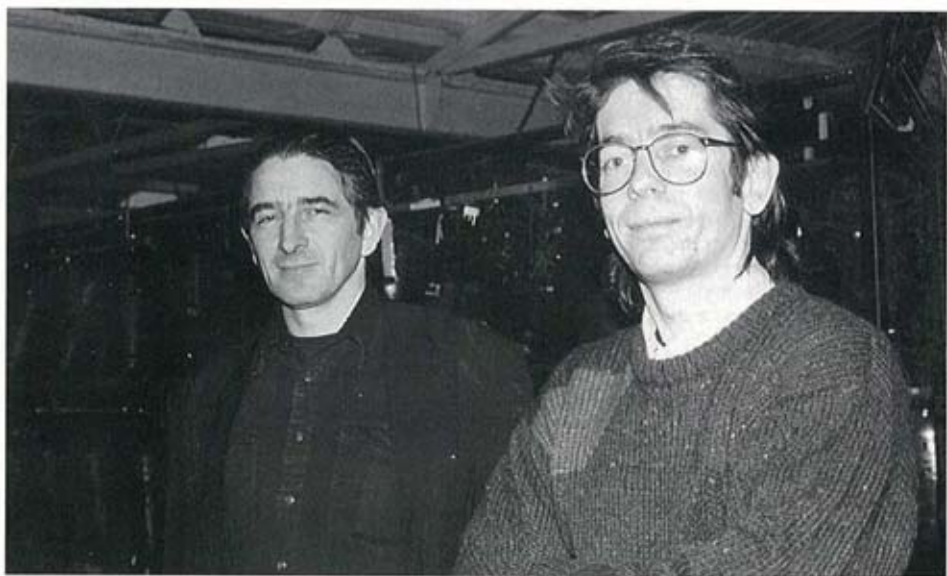
I had a couple of hours spare after leaving the airport bus and had promised myself a tour of secondhand bookshops. I noticed a book on Irish culture on a table in the Winding Stairs Bookshop and it had an island portrayed on the cover — I could tell because it had blue all round it. But where was this place? Don't worry, by now I was enlightened and perceptive in such matters of trickery. It was Ireland — sideways.

So yes, it did pass my mind as to what I might find next. Were all Irish lighting plans back to front, or even in 3D? There was no need for concern. Everything was totally plausible, highly professional, and good fun from here on in.

Lighting Dimensions' new place has 11,000 square feet of space and all the right facilities for a major hire and production base, and this week-end in late January was a sort of celebration, with business contacts and friends from different sectors of the industry making their appearances at variously appointed hours. And several British lighting manufacturers' representatives were over for the event.

I asked Andrew Leonard about the background to the operation which had started in 1978 as Stage and Location Lighting Services Limited. The original partners were Andrew, then working at RTE as lighting operator, and theatre lighting designer Rupert Murray.

"We formed it initially to provide a fashion show lighting service," said Andrew. "We had identified a need for a better and more professional package on which Rupert was working



Bernard Griffin (left) and Andrew Leonard.

at the time. I also had designs on doing something different.

"There was only one lighting company in the country at that time and it was very good but somewhat old-fashioned," he continued. "There was an opening for something more dynamic which was going to meet the needs of quick rigging and quick service time. In the grand tradition of this business we started in a garage at the back of my house, and within two years we were ready to move into bigger premises and took on an industrial unit in outer Dublin. We'd already been to London and visited various suppliers, and the first people we called on were CCT Theatre Lighting. Within 24 hours we had secured the distribution rights for CCT and also Electrosonic dimming controls."



Designs on fashion: Andrew Leonard and Rupert Murray, circa 1983.



Griffin and Leonard (left) with Eurolight's Graham Bowen and CCT's Jack Watling.



... and with John Anderton from White Light (Halifax) and Bryan Raven of White Light (London).

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MANUFACTURERS OF THE WORLD'S
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Andrew and Rupert had been joined by Bernard Griffin as hire manager in 1980, and he still holds that position in the new company. He takes up his own story: "I knew both Andrew and Rupert from Trinity College days and from working in the Players Theatre there. I'd also done some freelance lighting design for them. After spending four years studying and teaching in California which included post graduate work in visual perception and taking a course on advanced lighting design, I returned to Dublin in 1980 and spent six months freelancing before joining the company."

"In 1983 we were approached by the then managing director of Bourke Strand Electric and what emerged was a takeover by us of that company," continued Andrew Leonard. "Out of that was born Lighting Dimensions in 1984, and we effectively became the biggest stage lighting company in the country. We were covering not only theatre but fashion shows, for which we'd built quite a reputation, a lot of concert work and tours, trade promotions, product launches, and so on. Among other things, we worked on two European tours for Marks & Spencer in 1984, but in the following period we began to experience business problems.

"The years 1985-88 were punctuated by struggles, anguish, discussions with bank managers and so on, although we were continuing to do the best lighting work in the country it was uphill as far as business administration was concerned. The ultimate conclusion of all this was, sadly, the collapse of the company at the end of 1989.

"However, every cloud has its silver lining,



Three flown trusses at the National Concert Hall in Dublin for a fashion show.



Lighting Dimensions' rig for the Feile 90 festival — one of their biggest projects last year.

although in our case it was in the form of a white lining. We approached John Simpson of White Light in London, with whom we'd been doing business for many years, and put a proposal forward, suggesting that it would be worth his while to become involved with a new Irish company.

"Being the positive person that he is, John responded favourably, and gave the plan serious consideration. In due course, Lighting Dimensions (WL) Limited was born. The company is a

subsidiary of White Light in London; I'm general manager and Bernard is hire manager. John Simpson is our managing director. In March last year we moved into these premises which we bought outright, and I think it's fair to say that the facilities, and our proximity to the centre of Dublin and the theatres would be the envy of many a lighting company."

I turned to Bernard Griffin for a breakdown of the company's business. "We are the only fashion lighting company in the country," he



Rigging and lighting from Lighting Dimensions for Xtravision's live video relay during the World Cup.

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Andrew Leonard designed the lighting for the RTE TV show 'Seven Bands on the Up'. Pictured above are An Emotional Fish in concert.



A production for Pépé Jeans in 1989.

explained, "and we're responsible for the lighting of 95% of fashion shows in the Republic. In the fashion business the standard of production lighting for shows has grown in a way that it hasn't in either the North of Ireland, Britain or several European countries. It is something we've pioneered and established along with the personal relationships with major clients: designers, fashion houses, agencies, and so on. Our future plans are to expand to the Northern Irish market. The service end of our business is the biggest individual area of our operations and has increased since our involvement with White Light as we are now in a position to provide a broader range of equipment."

Andrew Leonard took up the sales story. "We distribute for CCT, Pulsar, Arri GB, Zero 88, Lytemode and Green Ginger, Lee Filters, Rosco, Powerdrive and DHA, and also supply most other British manufactured equipment such as Le Maitre, JEM — all the standard non-Strand gear." Which obviously prompted me to ask what had happened to the Strand distributorship along the way?

"The Strand distributorship ended in 1986 when two of our staff left to form their own company," continued Andrew. "It has to be said that we had an uneasy time with Strand because they weren't happy about us having another distributorship and we weren't happy about being tied to one company. We're very happy now with the broad range of equipment we have and we've had some notable successes as far as sales are concerned. We've supplied two Arri systems into Dublin theatres; an Image into the Tivoli Theatre with Zero 88 dimming, and an Imagine 250 into the Olympia. In addition we're currently pursuing a couple more Arri Imagine sales."

"Major projects over the last year have varied considerably. We installed a large system into a shopping centre at Tallaght in Dublin which included the supply of 24 HMI long throw CCT Minuette projector spotlights with gobos, perched 60 feet up in a glass dome. We are currently at the commissioning stage with a system for the Firkin Crane, a new arts centre in Cork. This system incorporates a 48 channel Sirius from Zero 88 with two Green Ginger 24 way Wall Racks and a large selection of CCT profiles, fresnels, cyc floods etc."

"As lighting designers we pride ourselves on the ability to service the entire needs of the client, in helping him to choose the equipment he needs, and we work frequently with consulting engineers and architects. This is an area where we can score over other companies in the business."

The permanent staff at Lighting Dimensions consists of nine people, and top men on the technical side are electronic engineer John Henson and equipment manager Dieter Hartfiel. A selection of highly skilled rigging crew are called upon as the occasion demands, and many of these are people who have been through the

company and now become freelance. "Of these, there are two in particular who work with us a lot: Kevin Saunders who is a highly skilled rigger, and lighting designer John Holland who was formerly our service engineer," explained Bernard Griffin.

"We don't usually have a problem," continued Andrew, "unless some of them take the emigration trail. We've trained a lot of fine lighting designers. Tom Kenny, for instance, is with Eric Clapton. Tom's only 25, but he's been around the world about four times with many acts. He started with us when he was still at school."

An area where business is growing at a brisk pace is in television lighting, and most specifically in the music sector. Some of the projects recently undertaken are pictured with this article, and Lighting Dimensions are looking ahead to the start up of TV3 in Eire. "We anticipate a substantial demand for our services when it is launched," said Andrew Leonard.

One comment from Bernard Griffin brings home the difficulty of a market such as Ireland. "This is a small country, and we shouldn't forget that the entire population is less than that of the West Midlands. We're covering all its entertainment needs, and also where our skills have an application in other areas. For instance, we are working on a new lighting system for St. Patrick's Cathedral in Dublin which Rupert Murray has designed and specified, and this will be unveiled on St. Patrick's day next month."

And neither should we forget that Dublin is Europe's appointed cultural capital for 1991. Lighting Dimensions' stock and expertise is going to be hard put to cope with the demands for both the spectacular and the unexpected in the



John Simpson.

year ahead.

For a final word I spoke to managing director John Simpson. "Having dealt with Lighting Dimensions for several years it became a logical step to pool our resources in a more formal way and form Lighting Dimensions (WL) Limited," he said. "For White Light the relationship offers access to an expanding Irish market, especially with Dublin fast becoming a regular date on the touring circuit."

"Lighting Dimensions now has access to an enormous range and quantity of lighting equipment for both short and long term projects, and with our branches in Halifax, and base in London, a resource in Dublin means White Light can offer support and facilities across the whole of Britain and Ireland."



Lighting Dimensions, White Light and Spot Co personnel on stage in Dublin during their open house week-end.

THE QUIET REVOLUTION

Computer technology is making inroads into the control of sets, scenery and lighting rigs. The technology introduced so far has largely gone unheralded. Jim Douglas takes a look at progress to date

It is always revealing to receive comments from an 'outsider' about the entertainment industry in which one is working. I invited an acquaintance into a theatre recently to view the 'goings on' during technical rehearsals. After he had picked himself off the floor, having stumbled in the dark over a badly parked Tallescope, his subsequent reaction was to the sheer number of VDU screens spread around the stalls.

As someone who has worked with computers constantly for the last ten years or so I just took all this technology for granted. But there they were, all those screens, softly fluorescing, and giving some little clue as to the amazing amount of computing power that we have harnessed for our benefit over a relatively short period of time.

On this show, as with most these days, the lighting department took the prize for the most monitors perched on a single production desk. The lighting designer had a clutch of monitors at his elbow to show him what the lighting board and PALs were up to, plus his own computer on which were CAD plots of the lighting rig,

schedules etc. The PALs were also being operated from the auditorium.

The sound department had VDUs associated with the configuration of the desk and the performance of radio mics along with PCs being used for CAD planning and recording of the installation in the theatre. Even the script was being updated in real-time on a word processor as the inevitable changes were being made . . .

And, last but not least, the reason I was there, the computer control system responsible for co-ordinating the movement of a major part of the set. Yes, personal computers and micro-processors have arrived in this area of the entertainment industry, and as far as I can make out, are here to stay. Techniques and technology developed in the field of industrial robotics and motion control are now readily available to the entertainment industry. Their application to staging and sets opens up a complete new range of possibilities. I sense interesting and exciting times ahead!

Some while ago John Offord was at great pains to welcome to the Professional Lighting

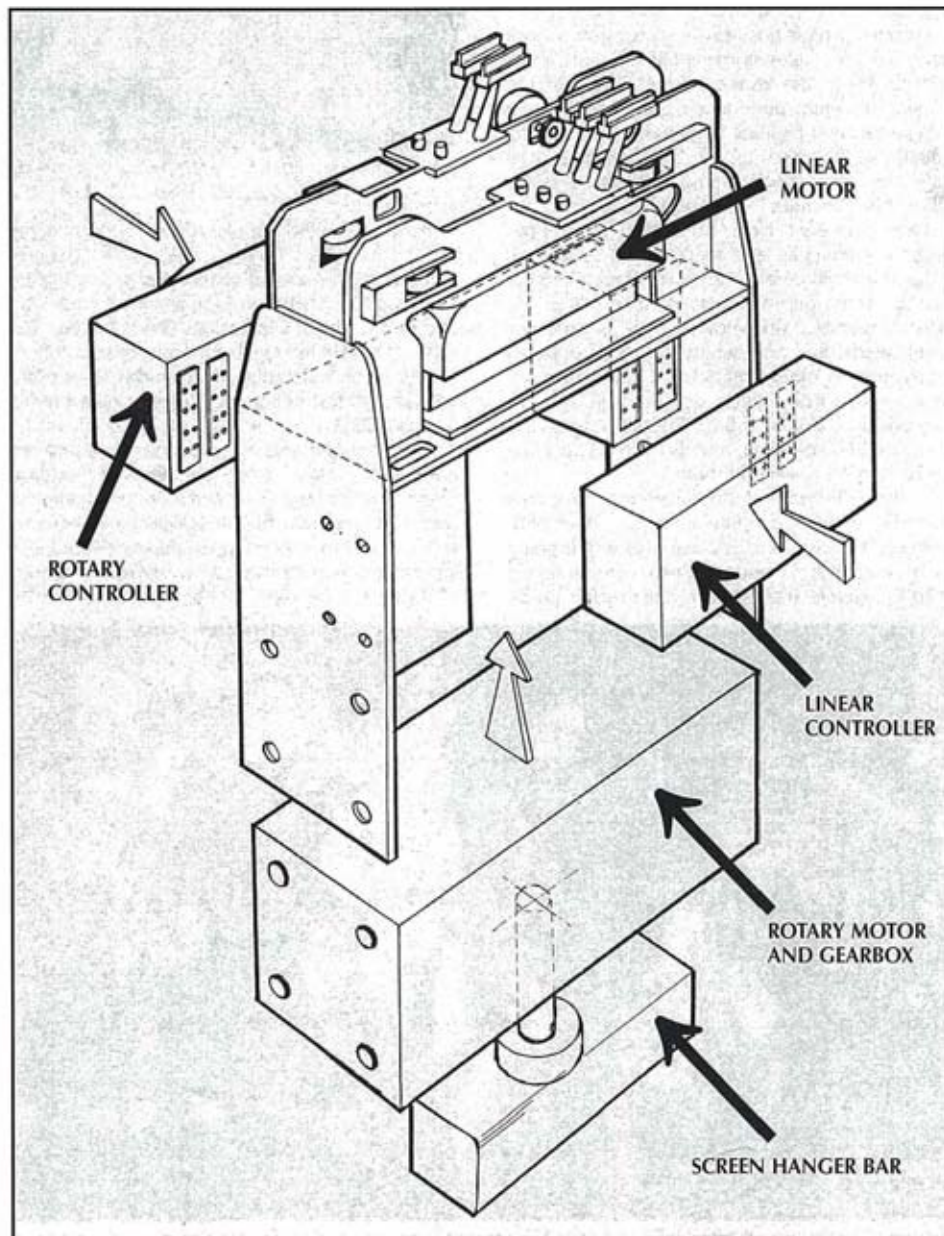
and Sound Association companies whose business revolved around neither lighting nor sound, but were more concerned with staging and sets. I will take this a step further and announce formally the birth of a new area of theatrical technology dealing with the manipulation, control and co-ordination of sets, scenery, lighting rigs etc under computer control, henceforth to be known as Theatrical Automation. Furthermore, (said he, with tongue firmly in cheek) PLASA and Lighting+Sound International will have to consider a change of identity to reflect the emergence of this important branch of the industry. I also demand that technical reviews of shows should deal with the automation aspects in more than half a column inch buried amongst endless lists of lighting equipment. Seriously though, I suggest that a byline on the front of L+SI to the effect that the magazine deals with all technical/technological aspects of the performing arts might serve to widen its appeal somewhat.

My own involvement with Theatrical Automation has arisen as a natural progression out of working on the technical side of sound and lighting equipment and with micro-processors and computers. Conscious of the fact that I seemed to be somewhat close to the sharp edge of this technology, I decided to make contact with other people in the industry who were working in this, as yet, embryonic field to try and ascertain the progress to date. The results of my investigations were interesting and enlightening and if I have interpreted them correctly give some pointers as to the way forward.

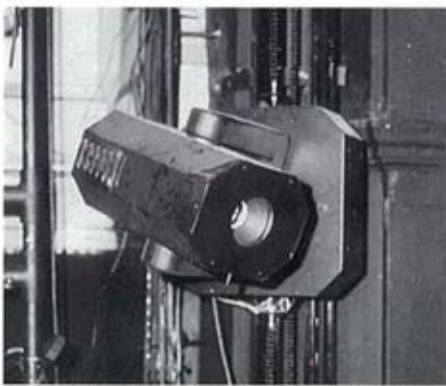
Sets in theatres have been mechanised since the year dot. You only have to take a trip around the understage areas of the Theatre Royal Drury Lane to see examples of stage machinery from years gone by. The application of hydraulics and electric motors to move scenery has kept pace with the improvements in the available equipment, but to my surprise, almost always under the direct manual control of an operator. It is only in the last few years that computers have been occasionally drafted in to help out in this area. In theory, the marriage of modern day electro-mechanical and hydraulic capability to the 'intelligence' of the computer should provide the quantum leap, as Francis Reid put it (L+SI Oct 90), from the 'art of the possible' to the 'art of the desirable'. A little reflection on what has been achieved (and also not achieved) so far, may help in avoiding a transition from the 'art of the near-impossible' to the 'art of the totally absurd' where science intrudes on art and attempts to become a spectacle in its own right.

The introduction of computers into this area of theatre affects a number of disciplines, so the subject needs to be explored from differing perspectives. The systems engineers and suppliers can say what is currently possible. How does this match up with the set designers and directors expectations? How do stage hands feel about their job being performed by an electric or hydraulic motor? What do operators want the computer to do, and how much do they wish to be left to do themselves? On top of this add the questions of cost-effectiveness and safety. I don't claim to be able to answer all these questions, but at least I can start the ball rolling and perhaps provoke a few readers' and other contributors' grey matter into action.

Two people who were able to give me a



Exploded view of the motor carriage used to manipulate the 'Aspects of Love' screens. (Courtesy Triple E Ltd)



Above (left) is a Vari-Lite in use on Miss Saigon with (right) Dramatec Effects laptop computer providing control.



good deal of information as to how things have developed over the last few years are Mike Barnett and Mikki Jablowska. They have worked together on many productions recently. Mike is well-known and respected throughout the industry for his ingenious design of mechanised moving scenery. Mikki has spent her time as a scenery operator on a number of shows — usually designed by Mike — and at present, nightly 'drives' the set of Miss Saigon. Another person I spoke to who was able to give me the 'customer's' point of view was Richard Bullimore. Richard was a production manager for the National Theatre and numerous West End shows. I was unable to make contact with any set designer during my researches for this article. If any designer would like to make their views public on this subject, I will willingly use it as the basis of a future article.

On her lofty operating perch overlooking the stage of Drury Lane Theatre, Mikki voiced her major concern that the first potential victim of the computer age is the operator suffering 'brain death'. The boredom — leading to loss of concentration and mistakes — that comes with the repetition of operating the same show every night can be avoided only if the task is made interesting and demanding. If everything is controlled by the computer with the operator relegated to mechanically pushing the button in response to the cue light, then enthusiasm for the job will evaporate rapidly following the opening night. On the other hand, a complex set with multiple simultaneous moves involving many motors may be impossible to control even with a large team of highly competent operators.

Mike Barnett's objectives for a computer

system are to achieve elegance and precision. He agrees with Mikki that a busy operator is a good operator and urges them to 'use eyes first and instruments second.' But any computer system should have a good manual back-up and the operator must continually rehearse the show without the use of the computer.

I don't believe that there are any definite simple answers, as each problem has to be judged on its merits, but there are some guidelines we can follow. These derive from consideration of what it is that computers are best at, versus the abilities of us poor humans.

Co-ordination

The computer is able to scan and react to many more simultaneous events than we can cope with. When the requirement is for simultaneity of events or the precise alignment of scenery the computer wins every time. The computer is also able to look ahead by means of extrapolation.

Timing

In the context of live performance the computer has a poor sense of timing. Events programmed into a computer will usually occur at fixed, pre-determined intervals. Operators ideally need a means of intervention to adjust the rate at which events unfold, not just to cope with nightly variations or mishaps but from the more severe changes in timing brought about by changes in the cast or musical directors.

Measurement

The sensors available for the measurement of position are significantly more accurate than our eyeballs, especially if we are operating 20 feet

away from the item being moved (usually in a blackout!). In this instance we can choose either to feed the positional information derived from the sensors directly to the computer or to the operator for action. It is in the latter case where the presentation of information to the operator as a rapidly changing set of numbers has often been difficult to interpret. The computer screen affords us with opportunities to present positional information and guidance to the operator in a much more meaningful form.

Communication

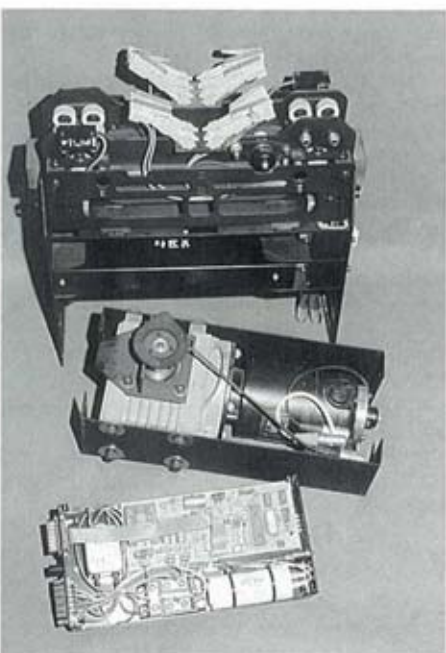
One of the biggest problems to be overcome is how to communicate our wishes and ideas to the computer — the conventional screen and keyboard being a somewhat restricting and inefficient interface. Computers, once instructed as to what to do, will faultlessly follow those instructions. One way of 'teaching' them what to do is by example. If a particular effect can be operated manually then let the computer capture the manual operation for subsequent repetition. Alternatively, man and machine have to meet halfway and communicate in some form of shorthand language.

Richard Bullimore made the point that however accurate and reliable a system is at performing its allotted task, all its potential for cost savings could be wiped out if it takes a long time to programme and re-programme it, especially come the technical rehearsal, when directors will demand instant changes at the drop of a hat.

Reliability and Safety

Today's computer equipment, if utilised correctly, is very reliable. Today's operator, if treated with respect, is also very reliable. But, on odd occasions both will malfunction. When considering a complete control system (including operator) there should be provision for self monitoring i.e. man should check the performance of machine and vice versa. There should even be provision for machine to check machine if possible so that errors can be self-diagnosed. It should be impossible for the operator unknowingly to put the equipment into an unsafe condition.

Things can go wrong outside the system. People and props can get mixed up with moving scenery, sometimes with disastrous results. If an actor is required to be transported by a piece of mechanised scenery then his life can quite literally be in the hands of the operator. We must learn quickly from the few accidents that



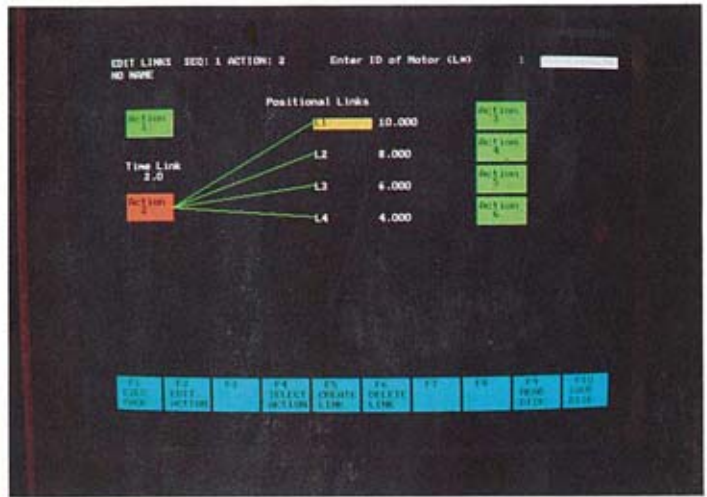
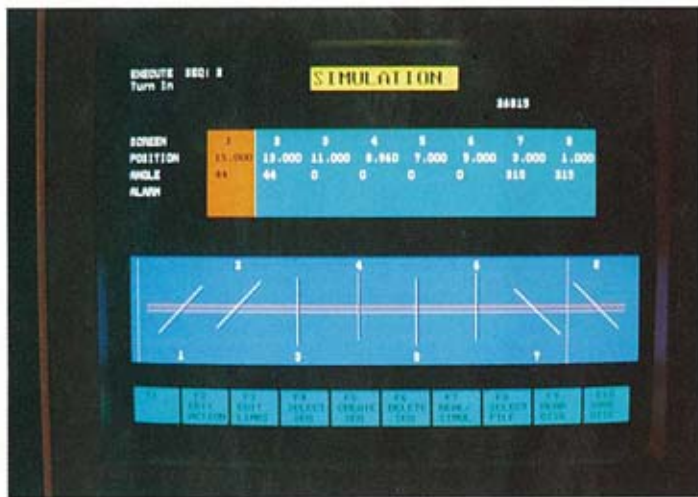
Motor carriage equipment used to manipulate screens.



Dramatec Effects' Jim Douglas.



Mikki Jablowska, the scenery operator on Miss Saigon at Drury Lane Theatre.



Above, the computer simulation of screen positioning and angle, and right the edit link sequence.

have happened in order to avoid repetition.

A practical example of the solutions to some of these problems is the computer control system supplied by Dramatic Effects Ltd to Triple E Ltd for the London and New York productions of *Aspects of Love*. The brief was to provide co-ordinated control of eight (nine on Broadway) wooden slatted screens measuring approximately 2m x 6m and weighing 100kg. These screens were required to move from side to side of the stage and to spin about their vertical axes. It was decided early on that, in this case, the system would be extremely difficult to operate manually, so the emphasis was placed on providing a highly reliable automatic system with manual control for intervention in the event of a mishap.

Each screen has an associated linear and rotary motor driven by an intelligent microprocessor-based controller capable of positioning the screens to a high degree of accuracy. These controllers report the screen's position to, and receive commands from, a central computer responsible for overall timing and co-ordination. The problems of programming were solved by the devising of a 'language' to describe the screen movements. At the lowest level there is a 'move' by one screen only which can be grouped with other moves to form an 'action'. Actions can be linked by time or position to form a complete 'sequence' which is the event instigated by the operator on cue.

Programming is aided by the ability to run the system in graphical simulation to check that screens will not collide before trying a sequence 'for real'. The simulation also serves as a check on the positions of the screens while running and any major discrepancy between the reported position and the simulated position of a screen is signalled to the operator.

The system in London only has provision for manual control of one screen at a time. The manual control on the system for the Broadway production was for two screens (one for each hand), and overall the control was ergonomically better thanks to the input from Whiz, the London operator.

If we look across the Atlantic at our fellow brethren on Broadway they appear to be further down the road of Theatrical Automation than we here in the UK. Some insight as to why we seem to be lagging behind arose out of my talking to Richard Bullimore. He considered that there was an opportunity to progress the state of the art with the production of *'Chess'*. The original design required many trucks to come on and off stage to precise deads, and it was obvious that the designer's ideas were guided by what he had already used in the USA. The technology to achieve the required effect did not, at that time, exist in this country, but there was enough leeway in the production budget to fund its development. It is fairly common

knowledge now that things did not work out as planned and that in the end the operation of the 'chessboard' was performed manually, as opposed to by computer as originally hoped. In Richard's opinion, the failure of this venture contributed to a lack of faith and confidence in computerisation that has set the UK end of the industry back a number of years. He would now (quite sensibly, I think) only look at backing a project which represented a much smaller increment in development based on what anyone had achieved to date.

Mike Barnett's opinion of the American approach to automation is somewhat mixed. While they may be further down the road, they may also be occasionally suffering from their national characteristic of being prone to excess. The American productions of *'Starlight Express'* and *'Phantom of the Opera'* are controlled entirely by computer. The latter production requiring a special room the size of a lorry container to house the equipment which, one gathers, was built generally to military specifications. In contrast, the London production has one equipment rack of electronics and the show is handled comfortably by one operator who is kept busy and interested. Similarly, the bridge in *'Starlight'* is successfully (and much more gracefully in Mike Barnett's opinion) manually operated in London by well motivated personnel. The total reliance on the computer in the USA has, to his knowledge, led to the complete failure of the bridge on at least two shows, due to malfunction.

On the other hand the control system that impressed Mike most was supplied to manipulate the *'Dragon'* on the Siegfried and Roy spectacular in Las Vegas (L+SI, April 1990). It is possible to manipulate the beast manually using four operators, each with two joysticks. The team develops and rehearses the moves, and when everything is to the liking of all concerned, the computer is switched to record for a 'take'. The stored moves can then be repeated exactly, ad infinitum or edited to further refine the effect. However, the operational team continues to rehearse the moves, ready for the day on which the computer fails to co-operate!

Broadway has its own set of problems to be considered when mounting a show there and the decision to use automation on a production is affected mainly by the prevailing local conditions. In the West End the indications are that Theatrical Automation can achieve a reduction in the running costs of a show in return for slightly increased production costs — a situation which I gather is to be favoured by managements.

Let me reiterate that this article represents a personal viewpoint and in no way do I purport to the presentation of an 'in-depth' or 'balanced' survey of the subject. I hope my

mention of past mistakes does not make anyone too uncomfortable. In engineering it is always vital, I believe, that we learn from those jobs that did not go quite according to plan. I am willing to admit that I am not completely blameless in this respect. On the basis of 'no gain without pain' I gave the production team a hard time on the London production of *'Aspects of Love'* and I shall always be grateful for their patience and understanding. In this case the final outcome was successful and we were able to analyse the experience and learn from the mistakes such that the supply of the equipment for the Broadway production happened in (almost) copy-book fashion.

I perceive a challenging time ahead. The technology has now arrived to get a lot more motors 'quietly revolving' to the benefit of the entertainment industry as a whole. I look forward with anticipation to what the next few years will bring.

Jim Douglas began his career in theatre in charge of the sound department of Theatre Sound & Lighting Services, providing equipment and support for many West End shows. He moved to the National Theatre as chief sound engineer at the time of the transfer from the Old Vic to the South Bank in 1976. As a founding director of Green Ginger Ltd he went to work there full time in 1980 designing stage lighting control equipment. This was followed by a period with Polaron Controls Ltd designing architectural lighting control equipment. He eventually set up his own company Dramatec Effects Ltd in 1986 to provide a technical consultancy, design and build service to the entertainment industry.

Over the years he has been responsible for technical innovations. If you ever used NAB carts for sound effects, then you can blame Jim for their introduction to the theatre. He built an experimental, two preset manual sound desk with matrix routing and control grouping, was possibly one of the first people to design a microprocessor dimmer and is sure he is the first person to design a microprocessor-based precision position controller for the linear motor.

This Jim Douglas would like to point out that it is another Jim Douglas that works for Vari-Lite.

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The Mission in performance.

Photos: Adam Stevenson

Andy Watson spent over three years as a Vari*Lite operator on many prestigious tours before getting the much desired opportunity to design a show which was The Mission's last tour. Phil Wiffen, The Mission's LD for several years, was unable to do the tour due to other commitments and when he saw what Andy had done he was full of praise. For a new designer, Andy showed a lot of talent and creativity and we will no doubt hear much more about him in the future.

Billy Idol, that wild man of rock, hit town recently and I went to see him strut and pose at Wembley. Michael Keller was the lighting designer and the equipment was supplied by Samuelsons.

The Mission Brixton Academy LD: Andy Watson

Whilst studying for a degree at Sussex University, Andy Watson teamed up with Louise Stickland to build their own lighting rig. A couple of years were spent doing local gigs until Louise left and Mike Owen, now with Vari-Lite, joined Andy. Another year was spent doing 'seedy little

pub gigs' although they did have a residence at the University. One day Andy saw an advert in The Guardian for Vari*Lite operators - he applied and got the job. His first task was the Nationwide Building Society Tour in 1987 which consisted of about seven gigs in six weeks! Straight after that Andy worked on the Prince 'Sign of the Times' tour with Roy Bennett which he described as brilliant fun, but hard work. This was followed by The Cure 'Kiss Me' tour and a host of other smaller tours. Andy worked with Roy Bennett again on the Brother Beyond tour as well as with Pete Williams who Andy describes as a great bloke, a good designer and someone to have a lot of respect for.

"I then got to programme The Cure's 'Prayer Tour' with Roy Bennett which was an education," admitted Andy. "It was very good and I learned a lot. I didn't make it to the end of the tour for various reasons. I ended up doing The Mission with Phil Wiffen, their LD for many years, at Reading Festival. Because of that, I then did the tour with him early in 1990. Through those connections, when Phil left to do The Sisters of Mercy and I had just finished Vari*Lite operating for Sinead O'Connor, The Mission asked me to be the LD for this tour.

"I got very frustrated doing just the Vari*Lites

because it's a strange position to be in on a tour. You've got the designer and they, sometimes, know what they want, tell you and you do it. That can be good if you've got a lot of respect for them, but if you haven't there's not a lot you can do about it. Then you get people that you actually work with and you can throw ideas to each other to come up with a collaborative design. I've been on tours where designers have bought in Vari*Lites because they are under pressure from the management who seem to be under the impression that Vari*Lites will make the show. They don't seem to realise that they've got to know how to use them or what they want from them. So you end up designing the major part of the show and you don't get any credit for it, let alone money!

"With the trend towards moving lights and generic lighting all being controlled by one board I like to think, with my Vari-Lite background, that I'll have an advantage over many lighting designers. The advantage is not in terms of the technical side of it, because most top LDs wouldn't operate the board themselves anyway. Having spent three and a half years working with moving lights, I know what they can and can't do. I can visualise in my head, the same way that a conventional LD can, not only the colours and the lights, but also the movement as well. That will give me a head start.

"Some designers are very scared by the technology. I've worked with people who really don't want to use Vari*Lites but have had to due to management and band pressure. They either get resentful towards you or leave you to it. It's great to work with people like Phil Wiffen because he is very receptive to ideas, but at the same time he's got a lot of ideas himself. He's a very talented guy and he's not scared of admitting that someone else has come up with ideas. There are a lot of people around who will be totally open to ideas and then take all the credit for the show. I think there are a lot of people with ego problems in this business.

"When I was originally asked to design The Mission rig, I wanted to avoid, at all costs, the 'truss and two Genies' type of approach. I wanted something a little 'esoteric'. With a limited budget and only 16ft of truck space available, the rig had to be compact enough to fit into small clubs and tents in Italy and also not look inadequate in vast Eastern European sportshalls.

"The rig basically consisted of three upstage



In order to make the rig as versatile as possible, 21 of the 100 par lamps were fitted with colour changers.



The rig features three Genie Superlifts fronted by Expanet grilles which create a diffused effect.

'Teenage-Mutant-Ninja-Death-Types-From-Hell' Genie Superlifts each of which carried a vertical 4ft section of pre-rig truss. Bars of Par lamps, a Molefay unit and other bits and pieces hung off the truss at angles. In front of each structure was a 7ft x 5ft shaped Expamet grille sprayed black and subsequently painted with UV patterns by myself and Keith Morris, the production manager. These produced a slight light break-up and disguised the content of each 'tree'. It is also very important to note that one of the grilles had a UV 'trademark' fish on it (which I am sure will please Pete Williams). The 'T-M-N-D-T-F-H's' overhung a 40ft truss which carried six bars of three Par lamps at odd angles and was trimmed at 10ft with a specially UV painted 'Pollack-esque' sharktooth gauze hanging from it.

"Unfortunately, when the truck arrived at Light & Sound Design we only had 14ft of truck space not 16ft and, despite our best efforts (including 15 lamp bars and four Manfrottos in one meatrack-of-death!!), we had to leave behind the two Genies which were supposed to support the truss. This gave us 24 hours to practise our telekinetic levitation. Having failed miserably at holding things up by art we eventually resorted to an assortment of scaff, a bunch of ratchet straps and two very long suffering Manfrotto stands.

Billy Idol Wembley Arena LD: Michael Keller

When Michael Keller was a small child of eight years old, he decorated his room with coloured lights and psychedelic posters. Many an hour was then spent experimenting with how coloured light could change the atmosphere or change the look of something. Michael pursued this fascination throughout High School ending up with a small lighting show of his own. After school he went to work for a nightclub where, as usual, one thing led to another. Eventually he found himself working for the promoter Bill Grant in San Francisco where he operated in the main arena before touring with bands like Santana and Starship. A number of years were then spent working for Morpheus because Michael thought that automation was going to be the way of the future and it would be a good idea to learn it. With Morpheus he did a Lionel Richie tour which



Rock touring Billy Idol style.

"Apart from two down stage Manfrottos for wash/frontlight the rest of the rig was scattered around the stage — Par 36 ACL strings, a pair of 5ks, 2 Sils, 2 Omnis and an army of UV guns.

"In order to make the rig as versatile as possible, 21 of the 100 Par lamps had colour changers as did five Molefay units and the two 5k Bambinos. Apart from the washes and ACL strings all the other lamps were on separate channels giving me great flexibility which was very important as I love the feel of direction and asymmetry in both focus and colour. Because of the relatively large number of channels and the use of ColourMags I spec'd a Celco 90-way Gold which was a delight to use.

"It has to be said that the first part of the tour was a nightmare with regards to the colour scrollers. I was using a lot of gels on the ColourMag strings and the MoleMags had a lot of saturated colours in them as well as diagonally slashed combination frames. However, the problems were solved with a lot of hard work and spare gel frames.

"Both Tim and Adam Stevenson were great — nothing was too much for them and I couldn't have wished for a better crew. In fact almost everybody on The Mission crew was helpful and enthusiastic — a real 'family'. I hate the sound versus light factioning; it's so pointless and so

helped him to obtain the Tina Turner 'Private Dancer' tour. He was also director for the Tina Turner 'Break Every Rule' tour as well as the Paul McCartney world tour.

"I heard that Billy Idol was going out so I called the management and said that I'd like to submit a plot," explained Michael. "I knew that other designers were up for it also. I submitted one plot but they said it wasn't the direction they were looking to. I said fine and sent them a second plot which they were really happy with although they cut it down! It's a fairly small rig, there's only a total of 120 cans up there and 88 of them have colour faders on them whilst the rest are ACLs just to get some finger looks.

"Originally I wanted 12 Telescans but that got cut back to seven and, again originally, each one was going to be motorised so it would go up and down to present positions but that also got axed! The remaining seven Telescans are hung in an array. Christopher Ducret, our Telescan operator and programmer, is probably one of the best there is. He's done Paul McCartney, Pink Floyd and the programming for Madonna so I'm really lucky to have him with me.

"We've had three different programmers from Vari*Lites, it was a little bit difficult at the beginning, but has worked out well now. There are 38 Vari*Lites, 16 VL2bs and 22 VL4s and they've worked out well. The Vari*Lites and Telescans are the hard edge lamps and the Pars are all basically soft wash.

"We're using a new colour fader which Morpheus sells and they've been great, very reliable. I've found them far superior to other colour scrollers because you go to every colour instantly. They are a designer's dream because you can sit there and say 'well let's just add a little more yellow to there' and dial it in. There are a couple of small drawbacks, but the advantages outweigh them. In America we used Obie and over here Samuelsons who have both provided an excellent service.

"Part of the show involves a live broadcast to Scandinavia, Spain and Italy, and I've made a few slight changes. We're adding audience lighting and a couple of more spots so we can get more fill light on the other

tiring. Eds Barlow (FoH sound), Damian Hughes (monitors) and I had a very good relationship which is very important when you have to compromise because time is limited, and venues change.

"The tour started in Nice at the beginning of October 1990 and then went to Italy, Yugoslavia, Hungary, Germany, France, Portugal, Spain, Switzerland, Czechoslovakia, Belgium and finally Britain, finishing with two shows at Brixton Academy. Overall it went very well and I loved being given the freedom to create atmosphere and the look I wanted without having to worry too much about the band always being lit. Most of the time they'd find a dark corner and hide in it — brilliant! The rig worked very well with the strange roofs (tents etc) and variable stages. In fact, I didn't like the Brixton shows very much because the rig was stretched and 'flattened' trying to cover the wide stage. Attempting to play a snow blocked Aston Villa on that weekend wasn't fun either.

"I'd like to thank Adam and Tim for all their devotion as well as everyone at LSD and The Mission themselves."

Andy Watson is not sure what is coming up next but hopefully, he will be operating Vari*Lites for Phil Wiffen on the Sisters of Mercy tour at some point this year and, with a bit of luck, doing some more designing.

musicians besides Billy Idol. I tend to light heavy on the main artiste and really bring him out which is great for a live show but for cameras you need more balance. It won't change the theatrical look.

"The tour started on July 31st, the day after I finished the McCartney tour! We did two weeks rehearsals in Los Angeles and then an eight week tour of the USA and Canada. The European tour is for six weeks and then we do Rock in Rio and some South American dates in January. I've been down to Patrick Woodroffe's 4:1 scale studio to see his design for Rio and to work out my ideas. It's been good especially under these circumstances where you've got very limited design time. As the mock rig was there I could go in and mimic what I'm doing with my show already and get the basic looks. That way I can spend more time when I'm out there on the Vari*Lites. We're taking our Vari*Lite operator with us as we feel that the lighting is a very important part of the show and the management is real happy with it."



For only a small rig, the lighting packs a punch.

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Gary Glitter

Brixton Academy

LD: Chris Clow

Well, what could be better to end a week of Christmas over-indulgence, than to be seriously rocked by the one and only 'Leader of The Gang'! So, the day before New Year's Eve I went to the Brixton Academy to experience the Gary Glitter Gangshow and talk to Chris Clow, LD on 'The Red Hot Reputation' tour.

"He just gets bigger each year really. When we started off again three years ago, it was just a back truss and two Genies and the 'big' rig was two trusses, which looks pretty small at Birmingham's NEC! That first year it was just one truck, then it was two trucks and now it's five. This is also the first time we have used moving lights with 20 VL1s on the tour.

"Gary only tours at Christmas and we started off doing clubs, colleges and Christmas balls, that sort of stuff. Then we started throwing in a few dates at the NEC and we are always in Scotland for Christmas Eve, playing three nights at the Scottish Exhibition and Conference Centre. This whole tour has sold out which is great."

Have you done any special shows or one-offs?

"Well we did Docklands last year but it didn't go brilliantly. There was a circus on in one half of it, then Gary came on stage after ten o'clock. So as it was a two hour show, by midnight he still had 15 minutes to go. It didn't really go down very well. I think the tickets were a bit expensive and the travel is difficult."

Do you get involved in the set or costume design?

"Yes, I did get involved in the set. The set is pretty much the same as last year, all grey Marley and white, so it was very bright. We used to have this juke box structure in the middle which he used to appear out of - a Wurlitzer, but we blew that out as we had used it for two years running.

"This year we made the whole set darker and added a structure at the back - a 'periactoid' thing which spins around. It's got mirrors on one side, a stylised urban scene on the other. It was designed for 'A Chorus Line' and the manager now owns it."

The periactoid is a huge steel structure, made up of eight triangular columns next to each other. The columns spin on their vertical axes and stop to present three scenes, exactly like the automated billboards.

"It's a pretty major thing to put up every day. Had they told us earlier that this was the sort of thing they were looking for I would have just done it with drapes and also hung the mirrors at an angle, the idea being that the audience are able to see themselves, although it can lose effect in some venues. Here it should be OK as the floor is sloping up at an angle.

"This year, unlike the last two, Gary has become involved in the set design and the look of the whole show. The previous two years, the production manager and myself just got on with it and he didn't see it until he came down to the rehearsals. This year I had more time because I wasn't on the road before the tour started but, as ever, some decisions were still being made up to three weeks before the tour started! With two drum kits you are pretty much restricted anyway. Gary likes to run around a lot, so you've got the back catwalks. I think next year we are going to go for a more curved type look, ramping at the side with the two kits in the middle.

"This tour he's wearing red, black and silver. He had one outfit created by a top designer, it was all red, gold and shimmering. The jacket looked really good with the

Vari*Lites on it in red. Gary is very big on audience participation and that's why we've got the eight Molefays on the PA stack and the mirrors at the back. Because of the time of year the tour goes out, everybody is in the party spirit. When you see the audience, it looks like a football crowd, they really get into it, especially when they can see themselves.

"When I run the show, I work very much on feedback from the stage. There are certain set cues that we do with the Vari*Lites, using them for specific things but when it comes to running it, it is not always the same because Gary is always stopping and chatting to the audience. I run both desks during the show with lamps on the Avolites board and colour changers, a few ACLs and the banners on the Celco board."

Apart from the mirrors and the UV screen, what special effects have you used for such an outrageous performer?

"We were going to have some pyros but that was dropped for various reasons. When the stairs lift up, a Maxibrute is revealed with quite a punch. The stairs rise with Gary on them and, with the aid of a flying harness, he remains airborne while the stairs return to earth - great effect!"

Have all the stages been at least this big?

"No, we do have to reduce in some cases. When I designed it, I did it in such a way so that I could reduce it in width by taking out the centre pieces of truss which can be easily repatched. In some of the sports halls we've played you still can't get it in and we have to take out the front truss as well."

How did you get into this business?

"It started when I was at college. I was doing Sociology at Newcastle Polytechnic and rather than go to lectures, I would go and work at the City Hall. Then I met Brian Croft at T.E.A. and just sort of fell into it that way. I often do dimmers as well when I'm on the road, but on this tour I'm also stage manager, so Lyn and Nathan, the crew, take care of the Q-Patch and dimmers.

"We've got two riggers on it because of the structure at the back. It's quite hard to put up. So we've got a rigger out on that and one doing the kirby flying, but they both work together doing everything so that helps us a great deal. We've got 22 Rainbow ColourChangers, moving trusses, moving stairs, 20 VL1s with six on the floor (they come out into the audience) and plenty of audience lights!"

How did the connection with Neg Earth Lights come about?

"Well, it went out to general tender but when I did it previously, it was a Seefactor gig and through the connection with Bob See it went to Neg Earth. They have done a really good job, it's all new gear. In fact, I went up to the workshop a couple of weeks before we went out and there was just a pile of cardboard boxes filling the hall. I asked where the rig was and they just pointed - 'there!' It's all good gear though.

"We did Newport on New Year's Eve and then a couple of dates at the NEC. These last two weren't originally planned, but as we got snowed in at Birmingham and had to miss one show there, we had to go back and it's been selling so well they decided to add another date. Then Gary goes off to some theatrical productions and I go on to do production/stage management type work."

I then talked to Lyn Scotten about the 'periactoid': "Well, it's a bit of a problem to put up, but it works well as a method of changing because it looks very flat and it would be difficult to actually carry three backdrops, especially mirrors, and do it properly.

Unfortunately, as it was designed for 'Chorus Line' it would normally be in one theatre for several weeks not touring back-to-back like this. During the show I run the strobes and the UVs and Bob operates the flying winch that lifts Gary up during the show. When we were rehearsing we found that the grandfather of the guy who was sorting all this out, was the man who did the original Peter Pan flying. He did it right back when it was all the rage and he just decided to carry the tradition on. He did all the rope splicing and stuff. So you have all this rock and roll technology mixed in with old theatrical techniques - well, they do say Gary Glitter is the Peter Pan of Rock 'n' Roll."

How have you got on using, for the first time, a system that is completely DMX?

"It's been great. I used the channel exchange facility which proved useful in an incident where the Molefays had been plugged up wrongly and all the Rainbows have been fine. In fact, the only problem we had first was the tape we used to attach the gel strings. As a result, some of the strings were ripped off so we just changed the type of tape. End of problem.

"It's a very colourful show. There's also a four cell cyc unit and an O/W Par at the foot of each of the four banners, so Chris can chase the banners in white as well. The two drummers are a major part of the act and are really highlighted. There are a lot of Raylight circuits around each drum kit and during the show Gary will go over to the drums and point them out and the Rays will chase."

Watching the slick show it's easy to see why Gary's re-emerging popularity is growing so fast. The 46 year old 'Leader' maintains total control over his eager gang and had us all rocking in minutes with a great party atmosphere. He could teach the young 'uns a thing or two!

Lighting Crew

Chris Clow - LD
Nathan Matthews - crew chief
Lyn Scotten - dimmers
Bob Niering - set and ground rigger
Mark Wade - main rigger
Phil Washington - rigging/colour changers

Equipment List

- 1 x Avolites QM500/90 channel console
- 1 x Celco Series 2 60 channel console
- 1 x Avolites Q-Patch system
- 1 x Avolites 180 channel DMX decoder
- 2 x Avolites 72 channel dimmer racks
- 22 x Rainbow ColourChangers
- 4 x Terrastobes with controller
- 1 x smoke processor
- 1 x cracked oil machine
- 6 x 400 watt UV guns
- 3 x (6x12) Lekos with iris
- 47 x bars of six
- 10 x ACL bars of four
- 10 x 4 cell cyc units
- 1 x Maxibrute
- 8 x floorcans
- 9 x Molefay units
- 24 x 8' pre-rig truss
- 2 x 5' pre-rig truss
- 6 x sleeve corner blocks
- 6 x 3M tower truss
- 4 x 2M tower truss
- 2 x 1M tower truss
- 10 x 1 ton verlindes
- 6 x 1/2 ton verlindes
- 6 x 1 ton C.M. hoists
- 2 x Avolites 6 way motor control
- 4 x long throw Lycians

Steve Warren



The Vari-Lite truss arms were constantly on the move throughout the show.



When the stairs were raised, as shown, the effect of the Maxibrute was blinding.

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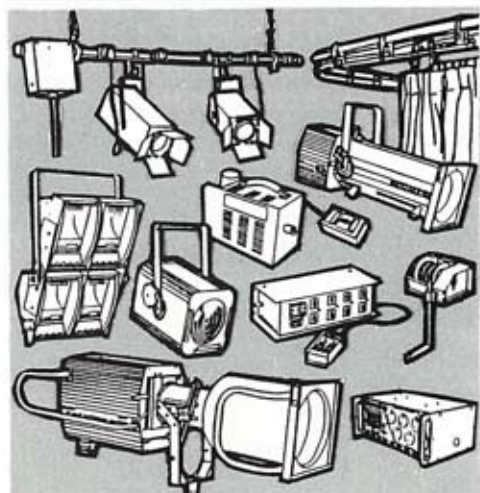
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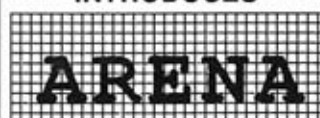
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VIEWPOINT

Coral Cooper on Life on the Road

My introduction into lighting was through Ian Buxton's company BLADE. I was employed as a 'Girl Friday' to assist with a local festival and other productions that BLADE was involved with. These included a small 40k lighting rig installation for a club in Stoke-On-Trent, and I eventually became the resident lighting technician. I still consider this an excellent way to 'learn the trade'.

The club had live bands on three nights a week, many being well-known i.e. Sad Cafe, Edwin Starr and Sigue Sigue Sputnik etc... I was then asked to tour as LD for the Climax Blues Band and following that decided to leave the club in favour of touring.

As a single parent with two young children still at home, I was not in a position to accept tours that took me away from home for longer than about a month, so I tended to specialise in 'one-offs' and conference work, which are financially quite rewarding. As a result, I worked as a freelancer for Mushroom Lighting, Entec and smaller conference companies.

In 1987 I went to Europe with Barclay James Harvest, in charge of special effects which included a fibre optic butterfly. The lighting and set design was by Ian Buxton, who was by this time designing for Simply Red. I admire Ian's work very much and consider him one of the most original and interesting designers I have seen.

In the summer of 1989 I was designer/operator for a circus/pageant in Birmingham in which Bob Geldof's management had an interest. This led to me being offered the job as LD for Bob Geldof in May 1990. From then up until last Christmas I toured extensively throughout Europe as a working LD for him.

The show is a fast moving rock show, starting with the newer Celtic influenced rock and returning to the more well-known Boomtown Rats numbers, even semi-punk at times.

I chose not to use many special effects, so the two truss rig was stocked mostly with Pars and Ray lights with three strings of Par 64 ACLs - about 180k in total. The dynamics of the rig came from two inverted triangles underhung on the back truss, each carrying 18 Ray lights and Molefay units.

The desk used was the MA LCD 60 and I was absolutely delighted by the performance of this control desk. Being digital it enabled me to control chases at a phenomenal speed, especially with Ray lights.

I found the MA board extremely accurate and reliable (even under duress from Italian mains supplies) and extremely 'user friendly'. The show was an old-fashioned style rock show, sometimes with many chases running at the same time, all of which I could access when in the memory cues to alter speed with ease.

Through Europe and the UK we toured a two truss rig supplied by Entec with only one crew person plus myself, so it was physically quite hard work.

On a personal basis I don't find being female detrimental to my job. I don't expect my crew to do anything that I cannot do myself, so when decisions have to be made on rigging, channel changes, phase and mains changes I feel confident in making those decisions. This stems from being a crew person myself. I know how I like to be treated by an LD or a crew boss and I try to treat my own personnel accordingly. I feel that many of the girls in the business over compensate for insecurity by being rather bolshy with the people they work with generating a feeling of resentment toward all the woman working in rock.

There is nothing to stop women working in this business. It is just as difficult for a man to get started as it is for a woman. The only thing in favour of men is sheer physical strength, but that is not what lighting design is about.

Women are becoming increasingly involved, as in every other walk of life as crew riggers, drivers, and in management. If you do your job well, then you will end up where you want to be - male or female.

I feel that apart from a little 'friendly rivalry' the lighting personnel should try for good relations with sound and backline technicians - give and take on all sides makes the job much easier.

This was underlined by our recent gig in Poland, when, because of border delays, plus the bus leaving the road and falling into a ditch, we didn't arrive in Warsaw until 5pm.

The show was due to go up at 7.30pm and already 10,000 people were waiting outside in sub-zero temperatures. A Polish TV crew was already installed and filming us every inch of the way.

A stage crew had been supplied, but as my Serbo-Croat is not up to scratch communications were difficult. Everyone on the crew rallied to get the lights airborne, sound guys, backline, merchandising and even the band. Bob Geldof himself was carrying lamp bars and hanging them. The show went up only 15 minutes late.

My sincere thanks to everyone involved in 'Bob Geldof 90' especially to Entec and Cerebrum Lighting for their unswerving support and to my delightful Welshman who acted as crew, Iolo B. Jones.

Lighting, sound, management, backline technology - all these jobs have women working in these fields who are so busy that they haven't got time to write articles.

We females don't always get the 'dirty end of the stick'. I do not consider that we are treated any differently from men. We are taken seriously - we are not constantly the butt of sexist remarks - though if I didn't get an odd sexist remark, I think I would be disappointed. The job is what we make it!



Coral Cooper.

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