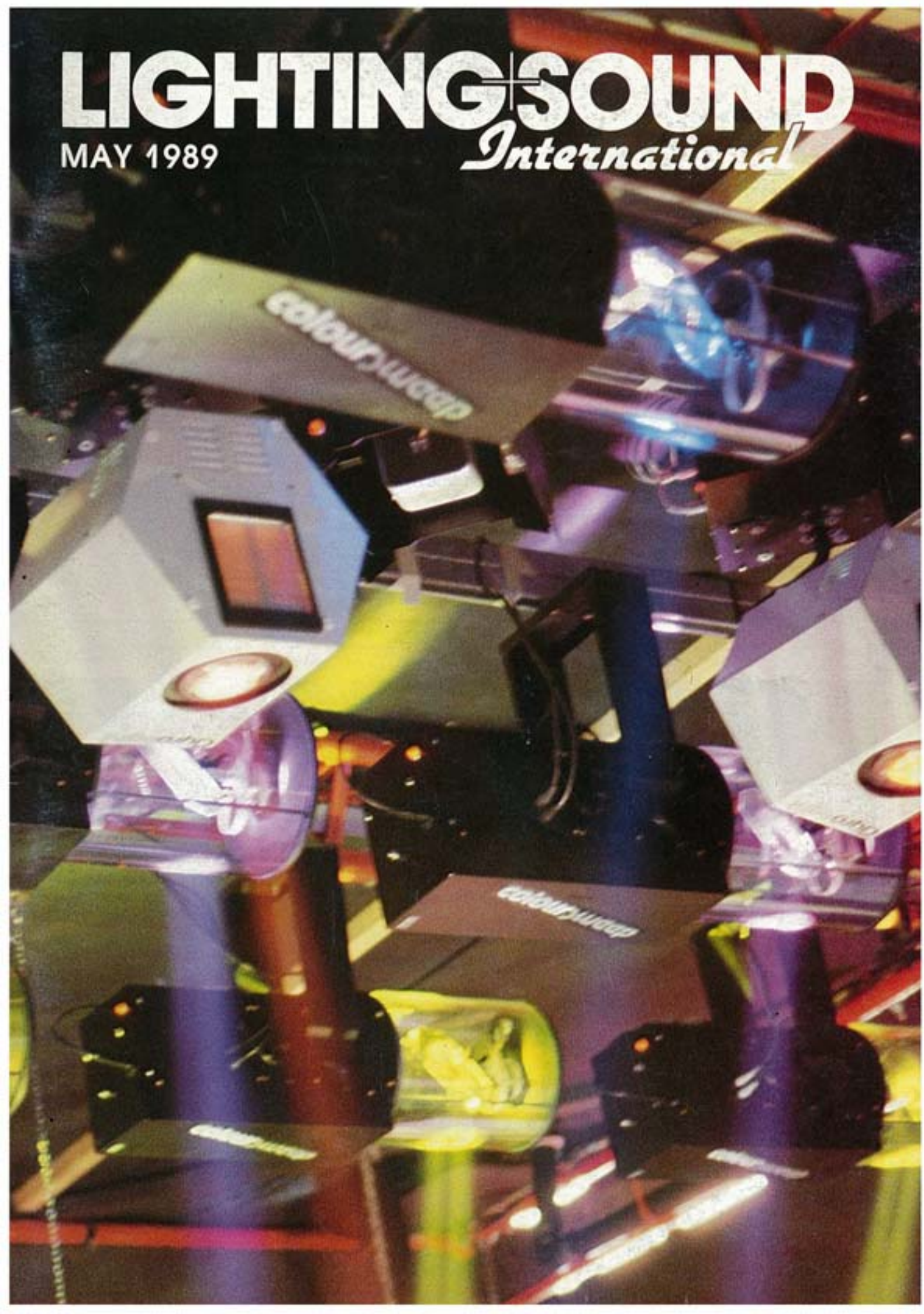


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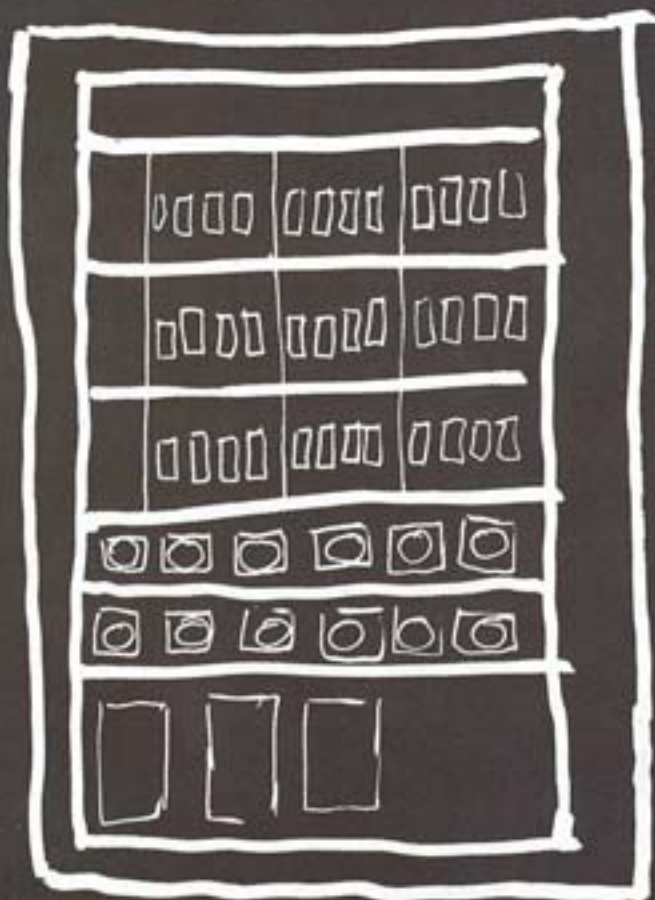
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LIGHTING+SOUND *International*

MAY 1989

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Trade Show Cover Story

Our cover this month pictures Laser Systems new Colour Sweep units and long-established Gyrolights. They were part of the British input at SIB in Rimini, featured in this issue pages 27-32. Pictured above is an over-view of part of the SIEL hall in Paris taken courtesy James Thomas Engineering's 'chair on a change hoist'. We can't remember whether it was Ruth Rossington or John Offord who took the photograph, but they both got down safely (SIEL review pages 35-39).

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Editor: John Offord
Assistant: Ruth Rossington

Telephone: (0323) 642639 Fax (0323) 646905

Editorial Advisers: Tony Aken, David Bearman, Andrew Bridge, Peter Brooks,
Jenny Cane, Tim Chapman, Mike Gerrish, Kevin Hopcroft, Tony Kingsley,
John Lethbridge, Rob Peck, Iain Price-Smith, Neil Rice, Hazel Simpson.

PLASA Office:
7 Highlight House, St. Leonards Road,
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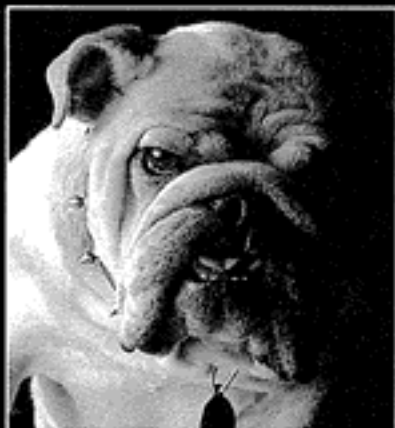
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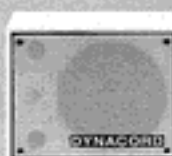
Words will not do justice to the revolutionary technological advances achieved by the Dynacord PCA Series amplifiers, probably ten years ahead of their time.

In this case, hearing is believing.

To whet your appetite, let's tell you that these processor controlled amplifiers have inbuilt intelligence which will significantly better the sound from virtually any loudspeaker system. This is achieved largely by 'Dynamic Signal Processing', which defies the laws of physics where speakers are concerned. If you're worried about loudspeaker failure, don't be, the 'Thermal Brain Circuits' act as your Guardian Angel, monitoring voice coil temperature and offering constant protection under any conditions, whilst retaining full dynamic range, with no perceived deterioration of acoustic quality.

To hear the amplifiers with bark but no bite, visit the Hitchin showroom soon.

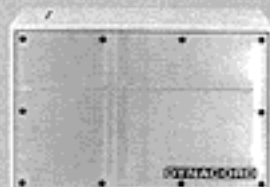
**A selection of Dynacord CL series loudspeaker cabinets
— adding even more woof to the PCA's brains!**



DYNACORD CL812 COMPACT CABINET An unobtrusive 150w two way cabinet with 300mm cone speaker and Dynacord's new HXE-100 bi-exponential tweeter. Can be used full range or as a mid/high cabinet; Dynacord's new adjustable rail suspension system gives easy mounting for "flying".



DYNACORD CL815 An interesting long throw loudspeaker cabinet with some unusual properties. Incredibly efficient (max 132dB/1m!) this three way cabinet has an EV Proline bass driver, four columnar coax mid-range speakers and a JBL 2405 slot tweeter. The columnar technique for the mids gives a wide 160° horizontal dispersion in the speech frequencies, with a tight 30° horizontal dispersion, which can be extremely useful for many environments. The sound quality is excellent. Can be driven passive, or active two way, or three way, via the rear switchable crossovers, and can be used stand-alone or combined with bass cabinets.



DYNACORD CL820 BASS HORN Compact 400w "half w" folded horn using the EV Proline 380mm bass driver. Punchy bass, designed to be used in coupled pairs or quad arrays.

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Distribution Breakdown?

Rumours spread at Rimini

A shock wave went around the SIB exhibition halls when a rumour spread that one of the major Italian manufacturers, with a worldwide distribution network, was no longer prepared to support their overseas agent on an exclusive basis.

Various dealers informed L+SI that they had found product being shipped directly to their customers and, although unconfirmed, it was assumed by them that discounts were also involved, and it was pointed out to us that there would be very little reason for the customer going directly to the factory unless there was likely to be a cost saving.

One American company who sought confirmation of dealer support, following the delivery of product direct to one of their customers in the US, told us that they came away with no comfort following talks with the supplier in question. Other distributors were able to report similar stories from their own territories.

All those we talked to asked not to be named, but the general feeling was that the situation could spell disaster both for the manufacturer themselves, their existing outlets, the Italian disco industry and the lighting business as a whole. "In the first place, it's been tried before with disastrous consequences, especially for the instigators," said one.

From L+SI's observations, there can be many reasons for a customer by-passing his agent, and often this is due to a bad debt record, and ramifications can have a domino effect. In addition, agents are unlikely to be willing, or even able, to provide technical

support which has been, and still is, the essential ingredient in the successful marketing of foreign product overseas.

Nowhere is this more apparent than in the US, where imports from abroad are treated with suspicion and all Europeans tend to be lumped into the same basket. As a result, all sales of disco equipment to the US could be affected, especially if other manufacturers follow suit in a rash of self protection.

"The real danger is that the Italian disco industry will become a country equivalent of Tottenham Court Road," was another comment we heard, "and when things go wrong there will be little possibility of getting technical help."

The overall view was that the moves could spell danger to the industry as a whole, and that PLASA should make urgent representations to APIAD with a request that pressure be applied to persuade the manufacturer in question to reverse their decision.



Electric Chair

L+SI's Ruth Rossington gets an over-view of SIEL in Paris (see feature this issue pages 35-39).

White Light Acquire Modelbox Limited

White Light (Electrics) Ltd has acquired Modelbox Ltd, the successful computer-aided design company specialising in theatre work. New, up-to-date hardware and software is now installed at White Light's offices in Filmer Road, Fulham, together with the Modelbox computer file of over 100 theatre ground plan and sections.

"It is a clear demonstration of the company's commitment to providing the best in new ideas and services for all designers and technicians throughout the theatre, both now and for the future," White Light's John Simpson told L+SI.

Jands Instinct at ABTT Trade Show

AC Lighting will be displaying the Jands range of lighting controls on their stand (13) at the forthcoming ABTT Trade Show at the Riverside Studios in London, and it will include the international release of the new 'Instinct' console.

Following hot on the heels of the successful ESP 24 and 36 channel boards, Instinct is the result of over 12 months research and development. It will provide 2 presets of 48, 60 and 72 channels with separate scene mastering. Scenes are arranged in pages or banks of 24 scenes, and a total of 34 pages of memory are available providing a grand total of 896 separate scene memories. As with the ESP 24 and 36, Instinct allows the operator to allocate scene memories against chase memories.

In addition, it has many important new features including 3 softpatch tables fully proportional to 200 dimmers, using DMX 512 output protocol, and a 24 character by 2 line back lit LCD display. For the rest you'll have to check it out at the Show with Michael Tanner, lighting sales manager of Jands.

Also on the AC stand will be details and samples of the Great American Market's new line of Gam-Color diffusion material.

Cue Distributorships

Cue Systems have been appointed by HW International to distribute the complete range of Carver professional power amplifiers in the UK. In addition to the existing range of Carver products - the PM-1.5, PM-350 and PM-15 amplifiers and the PMX crossover module - Cue Systems already have both stock and demo units of the new Carver PM2.0t powerful ultra-lightweight amplifier. The company, who specify Carver amps

for use with their professional Hackney Cab loudspeaker systems will be providing full back-up for all Carver products.

Cue have also been appointed as the UK distributor of the complete range of Klein & Steck Technology Line loudspeakers and will be offering from the range, the t3, t3pb, the t1 and the tW.

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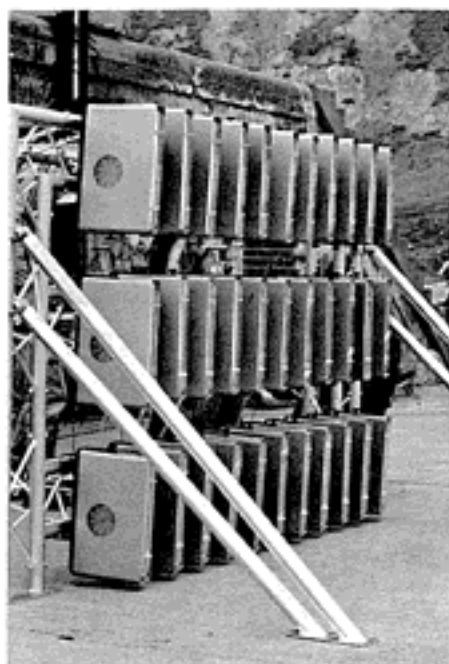
Extended range

By innovative design, TA Series Full Frequency Systems achieve extended range performance at both ends of the spectrum. The TA3, for example, is only 22½" high — yet it produces lows you can really feel with a well-defined midrange and extended high frequency response. That's because it's a 4-way system. So the combination of two overlapping 10" units, a CDC™ HF driver and a CDC™ UHF supertweeter ensures each device operates just where it's at it's most efficient.

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Whether in full-range or sub-bass mode, the C1 Controller assures perfect sound by combining the benefits of dedicated system equalisation and fourth order electronic crossover in one sophisticated package. It controls and configures the systems correctly yet avoids the unnatural excesses of many processor based systems — another reason for specifying TA Series.

If you'd like to hear more, write or call now to arrange a demonstration.



Red Nose Day: 11.30 a.m. The bank of Terrastroses on the Dock at Newhaven Harbour.

Sitting on the Dock of the Bay!

It was a cold, wet, blustery day when Optikinetics' Dave Thomas and crew prepared to demonstrate the effect on a large water jet when illuminated by a mass of strobe lighting in the presence of daylight. The black clouds rumbling overhead had other ideas, but the boys from Opti were not to be deterred.

A frame bearing 30 Terrastrobe units, each rated at 400 watts was assembled on the docks at

Newhaven - just in time for the rain! Power was supplied by a mobile unit comprising an alternator driven by a diesel engine and the water was courtesy of God, until he decided he'd had enough and sent the tide out.

In the meantime, though, East Sussex Fire Brigade gave nature a helping hand and pumped life water, using a Chubb monitor, to a height of 100 feet. With the strobe repetition rate at approximately 15Hz, a bright region of the water jet was clearly visible. When the strobe repetition rate was reduced to between 5 and 10Hz, there was a more pronounced flicker with droplets falling from the main jet also being clearly visible.

To the dismay of the soaked and freezing onlookers the trials were terminated shortly afterwards. They had lasted long enough, however for John Evans of Leisure Innovation to assess the potential of a strobe lit water jet for application by his company. For the rest of the party, it was home to bed with the consoling thought that, if Arctic conditions should be met again, it is possible to erect a makeshift bivouac from thin air and a soggy crisp packet. I shall refrain from being witty about the fact that it just happened to be Red Nose Day!

Lights up at Waterloo

British Rail has appointed leading design and communications company Imagination to design an exterior lighting style for the facade of Waterloo Station. The scheme, which will highlight many of the architectural features of the building such as the Victory Arch, is scheduled for completion in early June.

The lighting scheme, designed by Simon Bruxner-Randall, head of lighting design at Imagination, comprises three main elements. First, a soft background wash in blue floodlighting; second, white light to pick out particular features and lastly, amber light used at the main arch window to create a feeling of 'inner energy and warmth'.

Beasthire for Sound

In the On Tour section of the March issue of L+SI it was mistakenly reported that the company Total Control was responsible for both the sound and lighting on the Dr Hook tour. In fact, Beasthire, a PA hire, sales and installation company from Manchester provided the sound throughout the tour. L+SI apologises for not crediting their involvement with the tour.

Britannia Row mark Expansion Plans

In a deal signed on March 1st, Britannia Row Productions acquired audio distributors Pro Britro. Nick Mason and Norman Lawrence were replaced on the Pro Britro board by BRP directors Bryan Grant and Mike Lowe. Nick Mason retains his ownership of the Britannia Row building complex and of Britannia Row Recording Studio. Besides taking a majority shareholding in Pro Britro, BRP also acquired the assets of Britannia Row Equipment Ltd, which has now ceased trading.

Smart Moves

Smart Acoustics Ltd, the sole distributors of Cetec IVE real time sound analysers and Renkus-Heinz compact processor controlled loudspeaker systems have recently been awarded a £100,000 contract to design, supply and commission the entire sound system at the 'New Clubhouse', part of the Eden Beach Hotel in Malta. The speaker system was designed with the aid of the latest CAD package from America and is based around the central cluster of Renkus-Heinz SR1A cabinets.

The company has also recently moved to new premises and anyone wishing to know more about Renkus-Heinz speaker systems and the design facilities available can contact them at 38-39 Westgate Chambers, Commercial Street, Newport, Gwent NP9 1JP. Tel (0633) 252957

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Last Seen in Rimini

Optikinetics parked Trilite truck had by far the best exhibition site throughout SIB; airline pilots Ian Potter and Pete Maddison of Learning Sight & Sound as they cruised the halls (below); and bottom, visitors Graham Barron (Lizard Lighting) and Ian Brown of WB Lighting (right) call in on John McPhail and Alison Stewart of Advanced Lighting Systems.



The Eagle has Landed

Concert Light Systems have made an exclusive addition of 24 'Eagles' to their hire stock. "The Eagle fulfils the unique requirement of a dichroic/changer/gobo within a focusable profile spot format," said Paul Normandale of Concert Light, "and control is via conventional memory desks, integral dimmers and XLR connectors."

Le Maitre Official M.O.D. Contractors

Le Maitre Fireworks have been undergoing a very extensive assessment from the Ministry of Defence involving intensive study of work practices, R&D techniques, quality control and safety. The programme has taken some three years to complete and Le Maitre are now official Ministry of Defence contractors.

No more R.S.D. please

UK pro-audio equipment manufacturer Recording Studio Design has been in the throes of great change in the past six months. After the appointment of Andy Haigh as managing director in August, 1988, the company has changed a great deal internally, and as part of the changes, the R.S.D. name is to be dropped completely and the company will be known as Studiomaster (UK) plc from May 1st.

Record in the Making?

On Friday 31st March, Farrahs hire company supplied six complete sound systems to four European countries. There were two Ford presentations in Cologne and Frankfurt for production companies, Imagination and Aspen respectively; and Spectrum had booked the services of Farrahs for shows in Paris and Amsterdam for their clients Bayer and Caterpillar.

The largest amount of equipment had to travel the furthest. The National Youth Theatre travelled to Moscow for a production of Murder in the



ADB in Gothenburg

Pictured above is the ADB S28 control system in the Gothenburg Municipal Theatre. A feature on the theatre's production of West Side Story will be included in our June issue.

Cathedral and took with them Apogee speakers and processors, Metro Comms and a Soundcraft mixer.

Farrahs have also recently appointed Playlight and West London Electric as dealers for their full range of Anchor portable sound products. In addition, Playlight will act as a Metro main dealer.

At the Heart of Things

Effects Lighting of Leicester have relocated to larger premises within the city. The move to a more central site allows increased workshop and fabrication space and easier accessibility for staff.

Celco Exports

Celco, manufacturers of lighting control equipment, have recently supplied Belgium television station BRT with a Celco 60 Major lighting control board and a Series 2 dimming system.

Keith Dale, Celco's marketing director, told L+S that export is now a major part of Celco's business with over 40% of its equipment going to Europe, 22% to North and Central America and 9% to Japan.

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FAX 3-7642543. **NEW ZEALAND:** Spotlight Systems, Tel. 64 9-789354, FAX 64 9-780542.



Rob Peck.

PEOPLE

● After 14 years of service, **Rob Peck** is leaving ICElectrics. His decision comes after the recent restructuring of the company since its acquisition by Le Maitre Holdings PLC in 1988. The Bordon factory is now a manufacturing operation with sales marketing and accounting carried out from Le Maitre Holdings' head office in Croydon.

ICElectrics will now be run by newly appointed director Dick Carrier who will be assisted by Laura Catt and technical director Mick Galloway. Rob Peck is at present considering the various offers that have been made to him.

● Pulsar are creating a technical project support department which will be controlled by **Andrew Graves** as project support manager. Andrew is joining Pulsar from Mecca Holidays, where he was technical services controller. He has wide experience of the technical problems involved in lighting installation work, together with computer and programming skills.

The new department is in response to the changing disco market. Ken Sewell, a director of Pulsar, explained to L+SI current trends: "In the last two years the disco industry has seen a strong move towards intelligent lighting together with integrated control systems. The technology involved places a burden on the installer in terms of technical back-up and programming skill, which the manufacturer cannot expect the installer to carry unaided."



Andrew Graves (second from right), Pulsar's newly appointed project support manager, pictured at SIEL with Claude Lanof (Pulsar France), director Ken Sewell, and Brian Baker.

Pulsar will provide support services to assist installers and in the case of sophisticated equipment such as OSKA or Golden Scans will liaise with installers throughout projects. "We expect to provide programming support and intend to set up a 'hotline' to aid lighting operators with any programming or operational problems," said Ken Sewell. "It has been our experience that minor operational difficulties can assume unjustifiable proportions if the lines of communication are not maintained."

Pulsar will shortly be expanding their factory area and will be fitting out a major demonstration facility. The company will also be arranging training seminars for operators and installers so that products can be installed and used as effectively as possible.

● In preparation for 1992 and the single European market, Celco, manufacturer and distributor of lighting control equipment, has appointed **Thomas Reimann** as export and sales co-ordinator. Thomas has extensive experience of export procedure having worked for SCL (UK) and Hapag-Lloyd (UK), two international liner agencies. Hailing from Switzerland, he is fluent in French and German.

At Celco, he will be responsible for the organisation and control of all export and shipping functions, as well as providing back-up support for the sales and marketing operations.

● **John Coe** has been appointed as product manager for Eurolight Ltd. He took up his new position in early April having previously been product manager for Lytemode Ltd. John's main task will be to support the company's existing UK distributors and to expand the sales by appointing further agents throughout the UK. With new products in the intercom, lighting control, paging, internally wired bar and stage management ranges, he will be seeking new agents. Any companies interested should contact John Coe at Eurolight's new factory.



Thomas Reimann.

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Takeover of Court Acoustic Sales

L+SI has been informed that the assets, trade mark, trading title and goodwill of Court Acoustic Sales Ltd have been purchased by Brett & Christensen Ltd, a company which is anonymously backed by a business consortium including one of the biggest names in pro-audio.

The 'Court' range of graphic equalisers will continue to be manufactured, says the release, and first deliveries can be expected to be made during May 1989. It is hoped that the backlog of orders will be cleared by mid-June.

The R&D department has been expanded and several new products are already planned including a 45mm fader version of the popular GE60, a completely new range of equalisers using active filters, spectrum analysers and a large range of digital and analogue signal processors. Court Acoustics will continue their operations from 29 Beethoven Street, London.

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Aspects Launch for TP Sky-Tracker

Making a dramatic appearance in central London on 17th April, a Sky-Tracker multi-beam searchlight was stationed in the Aldwych to welcome 'Aspects of Love' guests to the first-night party at the Waldorf Hotel.

Manufactured in the US, but available exclusively in the UK from Theatre Projects Services Limited, the Sky-Tracker's beams could be seen up to 10 miles away. The unit has its own generator, incorporates four 2kW xenon sources, and TP currently have three available, with more coming on stream during the summer, including a 7k version.



Starlight's Starflower

Starflower, shown above and right, is the latest product in the Starlight range from Starlight Design of Bourn, Cambs. Bright multi-coloured beams are showered in time to music to produce the stunning effect shown here.

The unit has jack or microphone sound input, is fan cooled, comes complete with M33 250 watt 24 volt lamp, is ideal for installation or mobile use,



and is competitively priced, say Starlight Design. For more information ring (09544) 8841.

Award for Blaydon Communications

Essex-based TOA Electronics Ltd, manufacturers of sound equipment, have named Blaydon Communications on Tyneside as 1988 Distributor of the Year for public address equipment. Blaydon are the sixth company to have been presented the award. Judged on three criteria - total increased turnover, knowledge of products and marketing technique, Blaydon were selected from 55 national distributors for the firm.

Blast from the Past

Having undergone extensive refurbishment, what was once a Victorian Fire Station is now a modern discotheque. Christened, appropriately enough, Flames, the new Liverpool club provides excellent facilities and a sophisticated environment. Sound installation company, Strike Base used Community's CS speaker range, incorporating 6 CS52s and 4 CS 50BS into the design. Together with Community products, Rauch DVT 250 amplifiers were used.

Some equalisers are more equal than others but they keep quiet about it.

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New A&H Dealer

Allen & Heath have announced the appointment of H&B Communications as their London dealers. A 32:16:16 Saber will be on permanent demonstration at H&B and the complete Allen & Heath range of studio mixers will be available through them.

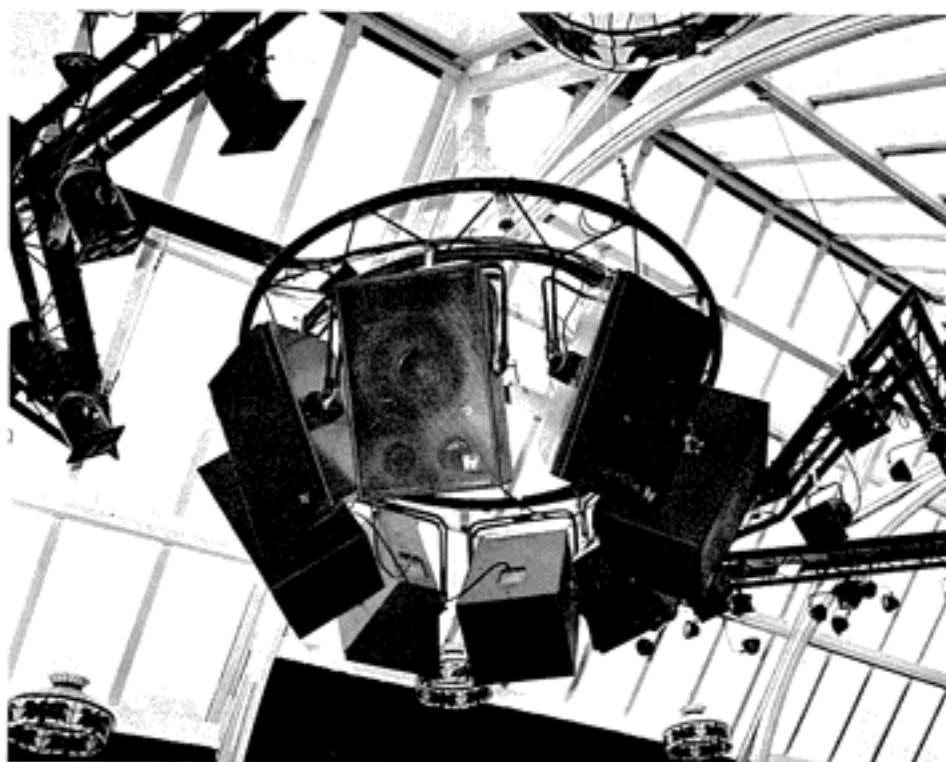
Relocation for Eurolight

Eurolight Ltd are now located in new premises. They are just 50 yards or so from their old position in a new and considerably larger factory unit.

The move has been brought about by an increase in demand for Eurolight products both from the UK and abroad, managing director Nick Mobsby told L+S. "The site offers three times as much space and has enabled us to build considerably better facilities in terms of manufacturing space, finished goods storage and sales office and showroom areas. Segregated areas have also been provided for mechanical and electronic design."

With major projects such as the Olavshallen in Norway, Glasgow Concert Hall and the recently won West Yorkshire Playhouse contract, the new factory will allow the company to continue to meet client delivery demands whilst facilitating greater stocks and off-the-shelf delivery on a wider range of products.

A new catalogue covering all products is currently being printed, and anyone wishing to receive a copy should contact Eurolight at their new address: Unit 1, Maple Industrial Estate, Maple Way, Feltham, Middlesex TW13 7AJ telephone 01-751 6400.



The Electro-Voice central cluster configuration at The Gallery, Leeds

Gallery installs Zenith

The Gallery, formerly known as Coconut Grove, is a new cafe/bar situated in Leeds. As part of a complete remodelling programme, co-owner Paul Lambert asked Zenith Sound Systems to install a system that would combine the better qualities of a high powered hi-fi system with the punchy delivery of a disco system.

David Littleboy of Zenith Sound Systems responded by installing an Electro-Voice sound system supplied by Shuttlesound. In order to give total room coverage without floor transmitted bass response, Zenith flew all the E-V bass and mid/high speakers in a central cluster configuration. The new system consists of E-V Motivator 2 and EVX 150 woofers in TL 606 cabinets in a configuration that utilises Amcron MA 2400 and MA1200 power amps

Equipment installed at The Gallery

- 2 x Delta shaped Trilite Rigs
- 8 x Pulsar Par 56 floodlamps
- 2 x Lampo Littlestars

- 8 x 4 way mirrored pinspot spinners
- 8 x 1 way mirrored pinspot spinners
- 12 x Mode Star-Lite scatter strobes
- 1 x ZB20 remote smoke machine
- 1 x Mode Arcline controller

- 4 x Electro-Voice Motivator 2
- 4 x Electro-Voice FKMTV2RS
- 4 x Electro-Voice FXV150 1000 watt bass speakers
- 4 x Electro-Voice TL606 AX bass cabinets
- 4 x Electro-Voice FKTL6A
- 1 x Amcron MA1200
- 1 x Amcron MA2400
- 1 x Electro-Voice EX18 crossover
- 1 x Yamaha Q2031 graphic eq

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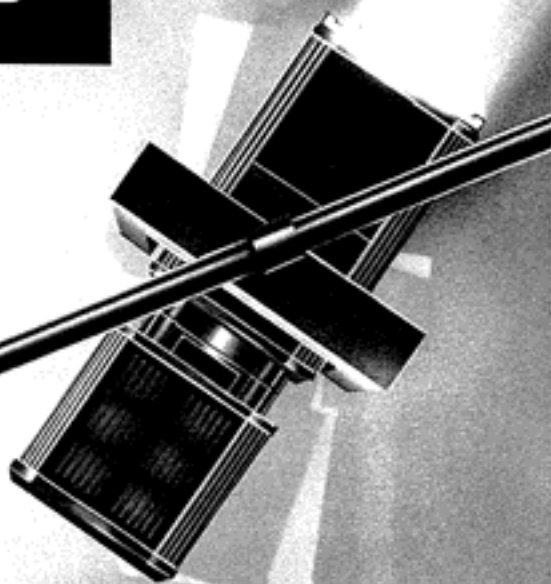


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Aspects of Love: the Lighting

Julian Williams talks to Mike Odam and David Edelstein, two of Britain's leading technical-specialists who have worked behind the scenes on Andrew Lloyd Webber's latest creation.

The pressures brought to bear on those involved in the putting on of the so-called 'mega musicals' are enough in themselves - but in the mounting of a new Andrew Lloyd Webber production, those pressures can be overwhelming, as every technical department endeavours to fit in with the other to meet the expectations of such a high budget production with a known advance, and a theatre booked for an expected minimum three year run.

Aspects of Love is just a part of Mike Odam's and David Edelstein's busy schedule, and though each cover entirely different sectors of the industry, they come together representing their companies as part of the technical team who put on this lavish musical. Preparing 'Aspects' took a 12-week period from get-in through to press night on 17th April at the Prince of Wales Theatre in London.

The show itself is a musical based on the novel by David Garnett, and a relatively small-scale piece portrayed in light operatic style.

Limelight Services, whose Mike Odam was responsible as production electrician, had a brief which required him to be in the theatre throughout the whole production period, and to make sure all the lighting equipment worked on cue.

In this case, lighting designer Andrew Bridge, whose documentation of the design for any show is highly detailed, produced a schedule and layout of equipment some four weeks into the fit-up for Mike Odam to cable up and assess the necessary dimmer and plugging requirements, and get to the stage where a full brief of equipment required could be given to Theatre Projects Services.

Such provision for a trademarked show - now that the GLC require only three months to pass before a show is 'permanent

- necessitated the equipment being permanently installed for a run of some considerable time.

Mike Odam explained: "The entire FOH outlets were disconnected at the dimmer room and channels were re-routed to the stage. All the FOH circuits were run to new positions from a separate dimmer room with its own mains intake, providing for 112 ways."

Armoured multicores were run to each location, where the exact number of circuits was required in the new positions, being integrated with some special stage lighting, to the proscenium boxes, rear balcony, circle front, and the inclusion of a neatly installed mid-auditorium bridge with a couple of follow spots housed at one end.

"We had to put more dimmers backstage with armoured multicores to suitable points and hardwired as close as we could to the various stage positions," said Odam. "Looking at the lighting plan, it changes every day, adding and subtracting lanterns!"

Asking him about some of the most difficult tasks, he mentioned the cyc position which was awkward to install due to the shallow depth of the stage area. At the back of the set is a 30 foot curved brick wall, which to stunning effect splits as the top half flies out - revealing the tops of a mountain range, complete with gauze! Because of the 'zig-zag' shape of the 'wall' the lights had to be appropriately staggered around the back behind the curved sections of the wall to light the mountain range with specially adapted MR16 'Howie' battens, along with the use of Par batten sections.

The false front header above the forestage also houses these special lighting units which are like light boxes illuminating the inside of the set.

Because of this header, the first five lighting positions are downstage of the iron, with the

first spot bar on bar 6. It is a tightly packed show in the grid, without any space allowed for light bars. "Aspects has 44 scenes, so for this reason Strand's PALS system goes towards providing most of the lighting work," explained Mike Odam, "with the other units producing the gobo washes and effects."

Not yet working on the new custom-designed Galaxy Motion panel, due to current teething problems, but temporarily controlled from an IBM computer, the ultimate concept of PALS is to integrate the 'moving light' with the ordinary stage lighting on the expanded Galaxy control board, using a single operator.

"They had two systems for setting up the show, with a stalls control pod for the motion, with record and playback facilities, in addition to the facilities on the Galaxy main board. Problems occurred with the two operators trying to record on to the same Galaxy crate," said Mike Odam, though he expects them to eventually run on the Galaxy - but with two operators. The light curtains were also adapted to make the individual lamps focusable to 'fan out' the light output.

Due to the limited time available for him to organise rigging around the 24 hour use of the stage by various departments, his crews were split into two shifts, with up to 15 on the night crew!

In discussion with David Edelstein of Triple E during rehearsals, he explained how his rotating screen drive mechanisms had been designed to move the set of louvred-shaped screens, which are a principal feature of the sets.

"There are two tracks at the mid-stage area, which are 16 metres long," said David. "On each track there are four linear motors, making a total of eight altogether, housed in

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David Edelstein.



Mike Odam.



From 'Aspects of Love': Giuletta's studio in Venice.

photos: Clive Barde



Building the wall.



In the garden at the country house.

a purpose designed chassis. Underneath each linear motor is a conventional permanent magnet driving a gear box which gives you a vertical shaft. Hanging from that vertical shaft are the eight screens - one to each rotary motor. The screens are 20 feet high and seven feet wide and stack at 90 degrees to the track in the stage left wing."

Control of the 16 motors is by a computer, the result of which allows the screens to be used in a series of shapes across the stage, either straight on or at angles to the track. The control for each linear motor can be set to stop within a millimetre at any desired

position along the 16 metre track. Also, the acceleration and deceleration distance can be set for each linear motor for each sequence, and at one metre per second. The weight of a combined linear and rotary motor is 50 kilos, and the screen that is hanging from it is 75 kilos, so each unit is therefore 125 kilos total in weight.

The rotary motor has two encoders: one on the back which governs the speed in giving acceleration and deceleration distances, and a second encoder, fixed on the shaft itself, is a 360 encoder with a built-in limit switch for the positional control of the

screen. With a maximum speed of 12 rpm you set the angle of the screen that you want it to end up at, and the position on the track where it goes.

"Using the computer is like painting a picture," said David Edelstein. "With a 40 megabyte memory hard disc this allows for almost 1000 potential sequences. Each sequence can include a series of actions, which might be the eight screens moving to a linear position along the track, when they arrive, and the link to the next action as either a positional link or a time link. For example, if screen 1 gets to 14.5 metres, all the



Rose and Alex in the café at Montpellier.

screens rotate to a set position or you can take a link to any of the other screens.

"The computer gives complete control over the motors, where they go and where they stop, and what angle they end up at. When it is programmed, you can first run the sequence on the graphic simulator and see if any of the screens are going to hit each other!"

Although Triple E have had the inevitable

teething problems to overcome, it has taken them just two months to refine the system.

Aspects of Love is an extremely subtle production that has been mounted with high expectations, assured by the fact that it has drawn together many experienced elements of British technical and creative expertise. And Mike Odam and David Edelstein and their companies are just two of the reasons why.

Note: Triple E's linear motor system was launched in 1987. It won the ABTT Product of the Year Award in 1988.

Additional credits:

Lighting hire equipment: Theatre Projects Services Limited

Electrical installation by Excel Electrical Co. Ltd.
Lighting effects by Howard Eaton Lighting Ltd.
Assistant to the lighting designer: Hugh Vanstone
Production design by Maria Bjornson

ASPECTS OF LOVE

Lighting Equipment

(as at opening night)

(list courtesy Theatre Projects Services Ltd.)

Lanterns

Cantata 18/32	30	M16 Microflood	6
Cantata 26/44	38	Par 46 internally transformed	21
Cadenza EP	12		
Cantata PC	3	Accessories	
Prelude 28/40	6	boom arm	102
Leko 4.5 x 6	2	Leko top hat	55
Leko 6 x 9	57	Par 56 top hat	12
Leko 6 x 12	50		
Leko 6 x 16	31	Truss	
Leko 6 x 22	4	5'	111
Sil 15 1.2K	4	10'	85
Par 64 L/N	23	15'	54
Par 56 S/N	87	20'	49
Par 36 S/N	3	25'	25
Par 56 batten	6	30'	39
Howie batten	56	40'	32
Minuette fresnel	42	50'	33
Minuette PC	18	60'	10
Patt 23	22	75'	10
Patt 743	4	Grelcos	175
Patt 23N	2	3 way Lumex	31
Patt 123	1	series splitter	43
Ianiaro 5K	1	5m Lectriflex	2
ET 1000W	1	10m Lectriflex	13
		20m Lectriflex	8
		30m Lectriflex	7
		50m Lectriflex	4
		staggered female spider	18
		female spider	3
		male spider	12
		stage box	6

Mains

100' 32A 10 Cee/Cee	2	Pani BP 1.2K	3
50' 32A 10 Cee/Cee	1	dimmer shutter	3
120V 500VA transformer	5	film drive unit	2
12V 225VA transformer	2	18cm lens	2
Superswitch	2	60cm lens	1
10' x LR	3	extension rod	2
individual fader	3	Pani 500W beamlight	2
4 way CG rack	2	24V transformer	2
4 way CG desk	3	Solo 2K followspot	2
10' Bleecon	1		
50' Bleecon	1	Rigging	
Bleecon Grelco	1	large Tallescope	1
		4'6" HB	1
		swivel arm	1

Effects

storm cloud discs	9	PALS System	
fleece cloud discs	5	Cantata PC PAL	14
3.5" lens	1	Cadenza PC PAL	14
4" lens	10	independant colour changers	40
5.5" lens	2	data distribution units	2
adjustable mask	13	power/data boxes	36
divertor mirror	4	5m data cables	68
Bowen strobe	2	stalls pod complete	1
Sil 30 strobe	3	Galaxy keyboard	1
Cantata gobo rotator	20	additional memory in Galaxy	1
KK wheel	7		
Minimist	4	Dimming	
12" mirror ball	18	Permus 24 x 10A	6
24" mirror ball	3	Permus 12 x 10A	1
Sil 30 Coloursette	12	Permus 6 x 20A	1
individual controller	6	Permus 12 x 20A	1
		Permus 24 x 20A	1
		Permus kits	10

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Aspects of Love: the Sound

Tim Frost talked to sound designer Martin Levan during set-up at the Prince of Wales Theatre.



Martin Levan at the CADEC desk during set-up.

From *Cats* onwards, Martin Levan has been designing both the sound and the sound systems for Andrew Lloyd Webber's mega musicals. The latest show to hit London and, no doubt move on to Europe, America and the Orient is *Aspects of Love*, which opened at the Prince of Wales Theatre in London on 17th April.

The new show is on an altogether more intimate scale than, say, *Starlight Express*. The sound of *Aspects* has been designed to reflect the mood, and relies on invisible reinforcement rather than up-front PA. That is not to say there has been a minimalist approach to the sound system. The final package which is being rented from Autograph Sales, is costing in the region of £400,000.

While putting on *Aspects*, Martin Levan is still involved in the new renderings of *Cats* and *Phantom of the Opera*, that are opening up all over the world. I caught him at the theatre two weeks into the installation. He had been Paris the day before, sorting out the system for the Paris opening of *Cats*.

"Those are very much versions of the same show. Once you've done the sound design in London, you find there are *Phantom*s opening up all over the world. They are a bit less work, but there is still a lot to do.

"A brand new show requires a vast amount of time and energy spent developing the ideas. When you design a show, you set up a character that stays with the show. The basic concept is there, the shape and the style of the show. We have very different sound systems, as the shows are very diverse. *Starlight Express* and *Phantom of the Opera* are about as diverse as you can get, and require very different treatment," he explained.

Martin works in close collaboration with the writers and director, designing the sound within the development of the show. For *Aspects*, the main reinforcement system carries through ideas tried out on *Phantom of the Opera* two years ago. Instead of using commercial PA systems or even boxes to his own designs, Levan's main speakers are

studio monitor drivers used open, without any form of box at all. The drivers are mounted either on the aluminium plates, using the bolts that hold the magnet, or in an open frame with nothing that impedes the sound from the speaker.

The idea came as one of those good-ideas-at-the-time. The sound is there to energise the air rather than fighting it, creating an open feel that is considerably less directional.

"I wanted to create a speaker system that didn't create a focus to it - a fairly omnidirectional system. It seemed like quite a nice idea. We did some experiments with it, and running the drivers from about 200Hz up it gave a very open sound with all the colouration gone. All the perceived wisdom about feed-back problems and units blowing up - none of these things came to light at all. I've had just as many feed-back problems with clusters and tight arrays. We were ready for the problems, but they never occurred."

The open speakers are four each side of the proscenium with four more at the top. The drivers are a mix of Tannoy and Urei studio monitor dual-concentrics. Although the show isn't heavily amplified, each speaker has its own Yamaha 2602 to give the system adequate headroom.

Each driver has its own 1/3 octave graphic equaliser, which will be set up in 'real time' during the rehearsals.

"I don't take a great deal of notice of what it says on an analyser," Martin Levan emphasised, "as long as the show sounds good. The only time you see me with a pink noise analyser, or a TEF, is if there is a specific problem to test for. There is a 1/3 octave eq on virtually everything, but sometimes it doesn't get used very much. I guess 75% of them are used. You have to have them there as you may only get two or three goes at a particular scene before you've got an audience. You need to have the gear to hand to be able to make fast changes."

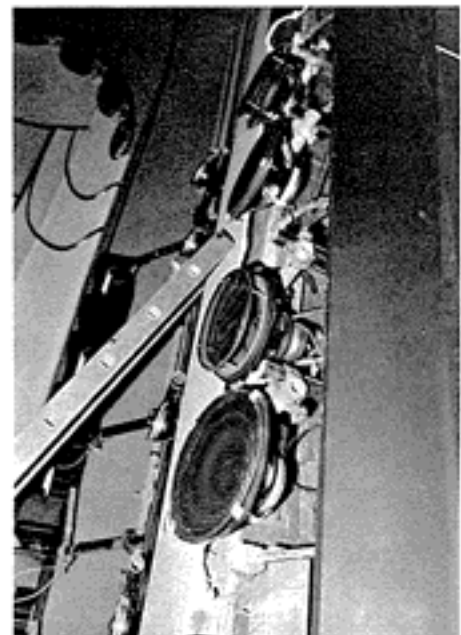
The Urei's are passively crossed over. This is the first time they are being used in this particular situation. Martin Levan had the option of spending time researching out an active crossover system for the Urei's, but felt the time was better spent working on parts of the system that would have more impact on the overall sound. The same situation happened with the Tannoys. In the London installation for *Phantom*, the Tannoys are crossed over passively, but as time pressures reduced, he was able to research active crossovers and now all Tannoys are actively driven using one channel of the 2602 for LF and the other channel for HF.

Open drivers have virtually no useful output below 200Hz or so, therefore the bass is dealt with by a separate array of speakers. Next to the dual concentrics are a line of Bose 303 sub-bass units which, in turn, are reinforced by a pair of Bose Acoustic Cannons flown high, house side of the proscenium.

The 303s are run up to 300/400Hz, although they don't put a lot of energy into them at that level. But as they become a little directional, it is fairly important where they are placed. The 303s were first used in Japan, and Martin Levan uses them because they're compact and "... they do sound rather nice." Around the stage, space is at a premium so the size of the Bose was an important factor.

The aim is to make the system completely invisible to the audience. Panels in the set have cut aways with scrim panels to let the sound through. To maintain the intelligibility and keep the sound's sparkle, there are rows of 2" and 3" dome tweeters mounted on the underside of the circle. These are also used without boxes.

"Whenever I used little speakers like Bose 101s or Control 1s, I'd always graphic them to turn them out like a tweeter. The choice of using dome instead of a full range speaker was from the feeling that we didn't want the colouration of a box, especially when you only need the system for the top end



Open chassis Urei drivers with Bose 303 in background.

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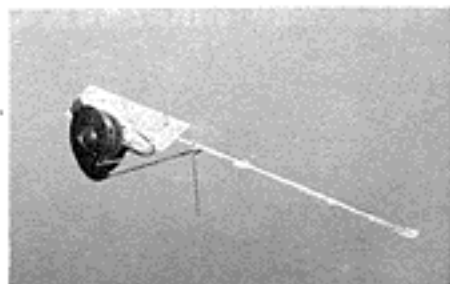
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Ceiling-mounted Dynaudio 3" dome tweeter.

anyway. When you're underneath an overhang like this, it is primarily the high end you need to fill in. If you try and fill in full-range, you can get into all sorts of focus of attention problems. Upstairs we are using JBL Control 1s, but will probably graphic them so there's not much low end left."

The delays are set on the long side, which helps to focus even more on the performer on the stage. But the amount of the delay depends on the type of show. With Starlight, where it's a tight, bright rock sound, it has to be set exactly. But with a sweet orchestral sound you can get away with a longer delay.

In fact, the band is surprisingly small. A string quartet, woodwind, horns, harp, grand piano and a couple of synths - 14 players in all. The band and the performers are mixed through an automated 56 channel CADAC E series desk with several special features.

At the stage I saw the system, two weeks into the installation, and a week to go to rehearsals, Levan had fired up the computer for the first time. The software had been transferred to run on a PC computer. Everything worked first hit, albeit with a fractionally slower reaction time. The desk has programmable faders throughout the input side, 12 main outs and 10 subs. What is very new is the special programmable routing module developed for Levan by Clive Green at CADAC.

Although the very big desks, like the one installed at the National Theatre, incorporate automated routing as part of the overall automation system, it is the first time such a module has been incorporated in a more 'ordinary' theatre desk. The routing system can patch an input to any of the group or sub-groups, or any of 10 special direct outputs. The system is going to be used primarily for on-stage special sound effects.

A single NAB cart machine will be used as the effects source. The destination of each consecutive effect will be automatically selected by the module under the control of the main computer. The overall effects path has taken up a certain amount of thought in itself. Even at this stage there is still a possibility that hardware may change once rehearsals get under way.

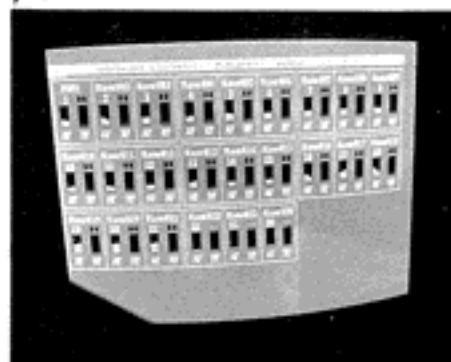
"The effects may well come from carts. Over the years we've played around with all sorts of ways of doing effects. We have used 8 track tape for Phantom, London and 16 track on Phantom, New York, LA and Toronto. But unless there is a special job that NAB carts can't deal with, I like to use something that is very simple and reliable."

In fact, the effects channels are the only area where boxed speakers are being used. There is a mix of Apogee AE3s and AE5s placed within the set for specific effects. The Apogees were chosen for their high output, relative to their size and for their clean sound and tight directional pattern.

Voice mics are all Sennheiser radio mics - 21 in all - generating their own set of problems. The receivers are placed under the stage, with the aerial cables kept as short as possible, to minimise the losses between

aerial and receiver.

"With the radio mics, we are always trying to squeeze that extra 1/2dB out of the signal strength. When the mics are placed on the body, you lose even more of the very limited power so you are scraping around for that extra 1/2dB here and there."



Sennheiser radio mic monitor screen.

Another new device to London, is a display system developed by Sennheiser for the multiple microphone system. There are video monitors both by the mixer and at the side of the stage. Both monitors can display the RF and audio outputs of up to 27 receivers. Since it is a diversity system, each display cell has a pair of bar graphs for the RF and Audio and there is space to 'name' each of the channels with the character using the mic. From the display, it is very easy to see if there are any problems. The stage side monitor has a key pad so that the sound operator dealing with the mics, can monitor the output of the receivers on his headphones. For more obscure problems, Martin Levan has video taped the monitor so that he can analyse the radio microphone's performance after rehearsals.

The CADAC computer plays an important part in the management of the radio mics, with automated group selection of the channels so that they can quickly re-group radio mics on stage depending on the scene. The automation is an essential part of the show freeing the mixer for more creative work.

"I'm a great believer in one man mixing," confided Martin Levan. "With 21 radio mics coming in and out all the time, you're mixing a band and you're mixing the show - you've got a lot to do. The computer deals with all the mechanics, leaving time for the creative work. The show has to be performed at the desk."

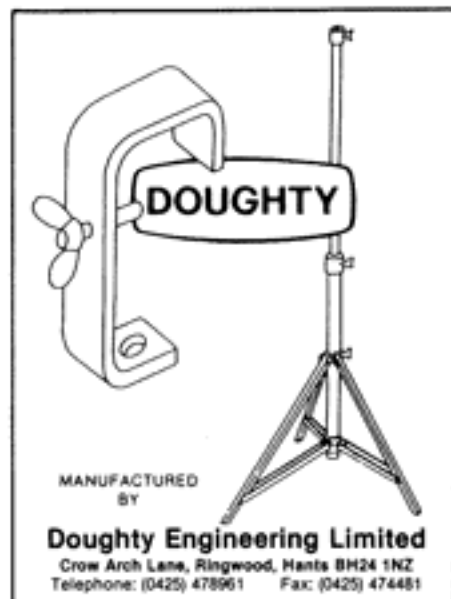
The technical sophistication is used as a tool, just a means to a creative end. "You do a design for a show, you want to do more all the time, deal with some problems that came up on the previous show.

"If it gets a bit more complicated then you have to add a bit more automation so you have freed yourself to deal with the important tasks. Creative work is always like that. You want new challenges and you want to explore new areas. You can't stand still. If you don't do it, someone else will."

Equipment

CADAC E Series computer theatre desk with 56 inputs, 12 groups, 10 subgroups
 1 Yamaha MC1608M mixer
 3 Yamaha MV802 sub mixers
 1 Yamaha DMP7 digital mixer
 1 Akai MB76 mix bay
 72 Yamaha PC2602, PC1602 and P2075 amplifiers
 24 Tannoy 15", 8" and 6.5" dual concentrics
 6 Urei 15" dual concentrics
 11 Bose 303 sub woofers
 2 Bose acoustic wave cannons
 9 Apogee AE3, AE5
 55 Dynaudio 2" and 3" dome tweeters

8 JBL Control 1s
 26 Yamaha Q2031 and DEQ7 Graphic Eq
 8 Yamaha REV 5 reverbs
 2 Yamaha SBX90 processors
 5 Klark Teknik DN17 delay lines
 21 Sennheiser SK 2012 bodypack transmitters
 42 Sennheiser EME 1036 diversity receivers
 60 Sennheiser MKE2 red dot microphones
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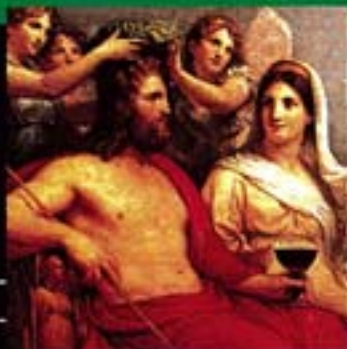
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Continental Focus: SIB/Magis - Rimini, Italy

The big show at Rimini (SIB and Magis) will always be a must on the annual calendar - despite the annual shifting of dates that leaves overseas exhibitors and visitors cursing the overlap with other international events.

And it will always mean different things to different people. SIB is the bit that's been around longest, and the discotheque orientated people, and particularly those with design on their minds, know that if anything's going to come up that year it's most likely going to be on the Adriatic.

The international theatre brigade haven't quite recognised the Magis element yet (located in Hall F), but it's here to stay, well-supported by companies such as Spotlight of Milan (backed up with product from the likes of ADB and Niethammer), De Sisti, Ianiro, Quartzcolour, Arri, Rosco and the rest. Also in the Magis hall were film equipment com-

panies, lamp makers, sound, seating and design companies, and names like Celco, Tomcat, Teatro, Helvar and Genie all came up on a distributor's stand somewhere in the hall. Fly, seemingly Italy's leading lighting control company, provided a natural link from the world of theatre to that of the club and discotheque, located as they were next to the entrance of Hall E - the home of the big big in-show shows from Coemar, TAS, Ampilux, LED, King's Sound, and Music and Light Production. It's where the out-front Italian disco boys have their bit of fun and make their annual sales to the massive home market in addition to hosting the big international buyers.

Over the bridge and across the Via Della Fiera, the four halls A, B, C and D are really one big hall with subjugated arms, and here you'll find everything else. Big and small stands with everything from the major

displays from the likes of High End Systems, SCM, Clay Paky, Laser Systems, Laser Grafix, ACR, Sapro ad infinitum, to design set-ups and pretty girls dancing in foam filled tanks. The noise levels are high and the provocativeness very pushy.

It's impossible to tell the stay-at-home reader everything about these major shows; all we can do is endeavour to paint a picture - and one that may well be quite different from reports in other trade journals. But we asked **Tony Gottelier** to give us his attitude, in particular to the multitude of look-alike mirror-based lighting equipment; **Francis Reid** to keep us in touch with new light sources discussed in seminar; and **Mick Martin, Graham Barron** and **Paul Dodd** to venture a personal viewpoint from their desks in the UK, having had a few days to let the dust settle.

The rest I hope we've covered reasonably well with the pictures . . .

Bring on the Clones

Lighting designer **Tony Gottelier** took a long hard look at SIB and tells it the way he saw it . . .

The doubts first started creeping in as I faced the Monday morning rush hour traffic on the M25 heading for the 10 o'clock flight to Bologna. (Still, at least I made it - others were not so fortunate, despite driving most of the way on the hard shoulder!)

These doubts were, of course, fully confirmed on arrival in Italy when facing up to a one-and-a-half hour wait for a coach to Rimini and another similar time for the journey itself, eventually arriving at five o'clock in the afternoon. An entire day travelling, just to reach a European destination, and it wasn't even a package holiday!

I had started out with great enthusiasm, firmly believing that this show would be of major significance. Looking back, perhaps that was a bit naive, nevertheless, there was much new product to look at, even if there were no major new developments.

I feel that the three most lasting impressions for most people will be the sheer size of the exhibition itself, the huge scale of the Coemar display and the innumerable articulate, or at least articulating, lights that were sprouting up all over the place.

Well over 400 exhibitors in three large halls is an impressive enough statistic, but all of that somehow paled into insignificance against Bruno Dedoro's vast cathedral to intelligent lighting. A simple, but gigantic floor-standing truss 18 metres high and square on open floor space was used to support and demonstrate a battery of the latest Coemar products. The metaphor was extended by the surrounding row of confessionals - the sales offices, and by the high altar - the control dias. (I have deliberately kept any apocryphal references to the pontiff to



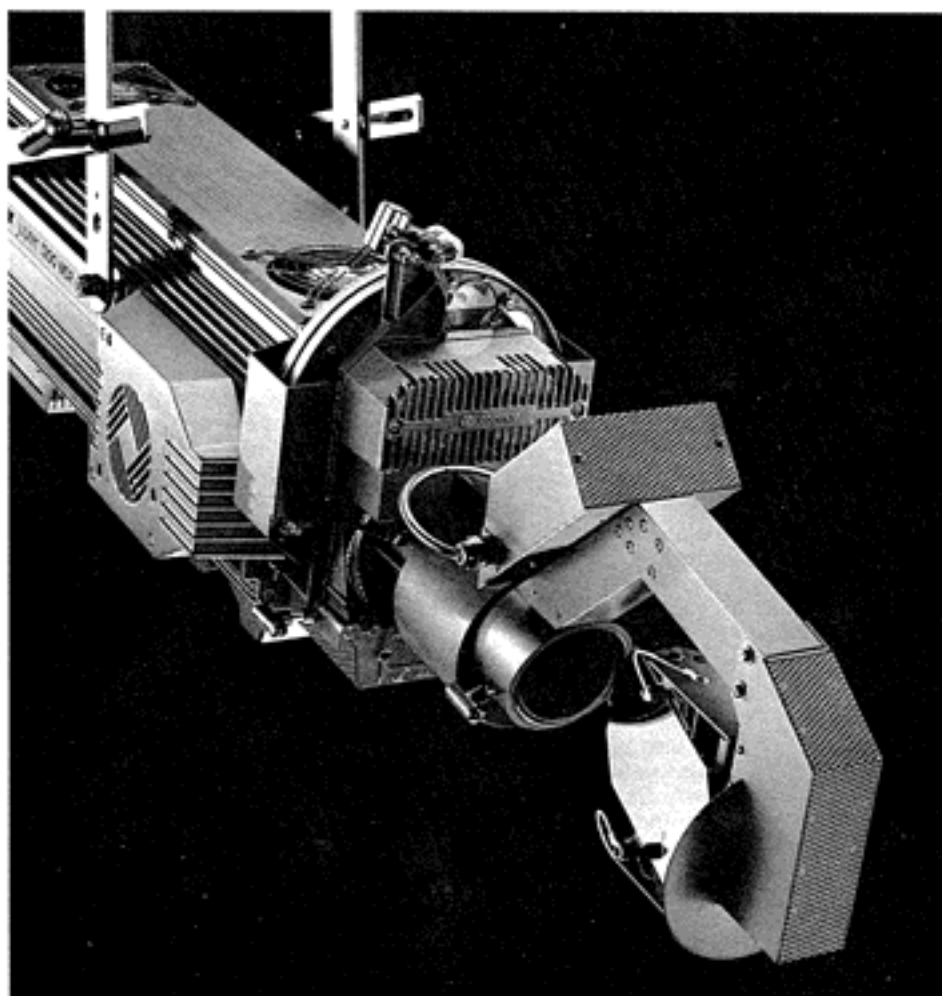
SIB in action, with the show's biggest stand from Coemar (above) and a typical scene from Laser Media's popular presentation (below).



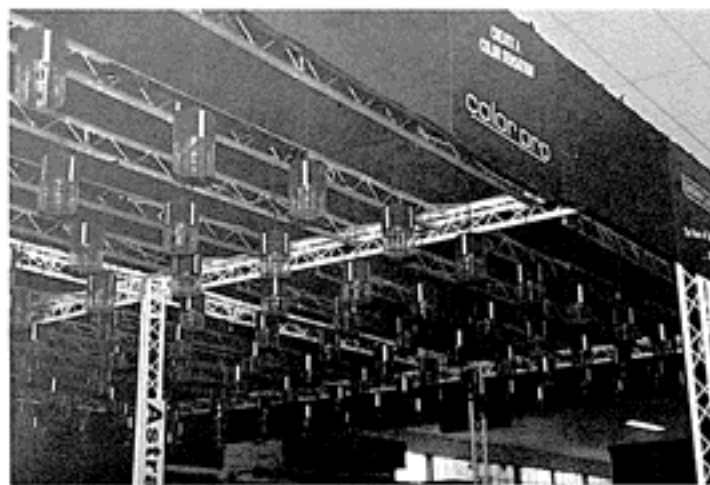
myself, in the interests of good taste).

It has to be said that, with the aid of a simple blackout at the windows and all the normal hall lights still on, this was one of the best, and certainly the most true to normal conditions, demos at an exhibition I have ever witnessed. A genuine opportunity to see the products perform in a similar ambient environment as might be expected in a discotheque. I have never been a believer in the totally-dark-room approach, which is very misleading, although I understand why manufacturers do it as it certainly sells product. So hats off to Coemar for a brave effort and to those other companies who made some attempt, even if away from the hall, to show their luminaires in 'real' conditions.

As to the Coemar demonstration itself: what it may have lacked in artistic input, it certainly made up for in the awesome power of the Jupiter's newly specified MSR lamps and the sheer brilliance of its dichroic colours. Although this is not a totally new product, having been previewed at Rimini last year and having made a tentative appearance at the PLASA Light and Sound Show also, another year of intensive development has resulted in much improved performance specification. Apart from pan, tilt, 12 interchangeable dichroics and gobos, all controlled by stepper motors, the latest models boast autofocus and also mechanical dimming via an auto iris and shutter arrangement. These latter items are optionally available via a new controller, the Jupiter 32, made for Coemar by Advanced Lighting Systems of Edinburgh. Otherwise, a 16 unit programmer for more standard requirements is available. To demonstrate their faith in their development efforts, Coemar are prepared to support the Jupiter with a three year guarantee.



Coemar's new Jupiter in close-up. It is available in 700 or 1200W MSR lamp versions, and has a multitude of features including pan and tilt, 12 interchangeable dichroics and gobos, autofocus and dimming.



Over-statement: High End Systems' huge Dataflash display.



Rosco's 1300 fog machine gets to work in the Magis hall.



The Italian-manufactured Space Cannon is available in three different sizes: 1, 3 or 4-head. Various power variations are also an option.



ADB's area on the massive Spotlight stand, with S28 in discussion.

Among other new Coemar effects are the Ritmo, a projector based on the same MSR series lamps which delivers coloured patterns and shapes triggered from a sound source and the Brio, which is a compact replacement for the Robot but with 400W MSR lamp, extra colour and gobos. Another interesting item is the Tunnel light which, using a new Philips lamp with a unique filament, generates a true cone of light without special fitting.

One of the disappointments of the show was the absence of Clay Paky's Superscan, their planned rival for the Jupiter, as it would have provided a useful opportunity for comparison. The intense competition between these two companies, often difficult on a human level, has at least stimulated some of the most exciting new developments in the market place today.

Clearly most British manufacturers, showing here on their agents' stands, don't consider this the show to make significant product launches preferring to keep their powder dry for Plasa. However, with such a strong European market and the importance attributed to it in a pan-European sense, I wonder if they have got this quite right. The Americans and others had different ideas.

Lightwave Research, creators of the highly successful and, incidentally, much improved Color Pro, hid this light under a bushel to maximise the impact of the launch of their much vaunted Dataflash. This turned out to have been a marketing error for, not only is there still considerable interest in Color Pro, but the European market did not seem ready for such an overpowering stroboscopic effect as provided by Dataflash. Nevertheless, I have no doubt that the highly inventive Richard Belliveau will come up with a solution to enable a wider appeal for this product. Perhaps an alternative light source, Richard?

Lightwave are entitled to make the odd mistake as long as they continue with their brave attempts to genuinely innovate and I hope this recent experience won't hold them back or turn them into cloners like the rest of the pack. On which subject, I lost count of the Robotic copycat clones on show at Rimini, there must have been a dozen or more. To make matters worse, there were probably a similar number of non-standard controllers in use, alongside them. Is it below the dignity of the average electronics designer to use one of the industry-standard data transmission protocols, especially as they have not yet proved to be inadequate?

At the end of the day, it's the customer who suffers through this obfuscation and the fact that most of them don't realise it yet, is

hardly a reasonable excuse. As one wag said to me, "Intelligent lights? First show me your intelligent lighting operators!" To which I would add, intelligent product designers. Once again Lightwave have scored here with their new data interface which allows either DMX512 or analog control of their Color Pro lanterns. In this way they are making them accessible to virtually any controller, from touch panels to rock desks. I, for one, will take bets that they will sell far more of these luminaires as the result, without any real loss of sales for their own controller. In other words, they have simply expanded the market.

Another company with a justified reputation for originality are ACR of Switzerland, who have been dabbling with dichroics for a number of years and whose Spectron I colour blending colour changer was probably an inspiration for Color Pro. Their new Spectron II, described as a magneto-optical colour changer, turns the three lamp method on its head, using three interference filters and a single light source instead to generate six colours and white. The 360W, 83V Halogen lamp with multifaceted reflector gives almost twice the light output of the original model with sharp edged beams and even colour distribution.

These people have also gone to a great deal of effort to solve the problem of the optical brightness of such luminaires in the hostile environments in which they work, which may reduce the efficiency by up to 40% in a short time.

What they have done is to isolate the optics in such a way as to ensure maximum cooling for the lamp while maintaining a flow of air around a sealed lens housing which acts effectively like a heat sink (see diagram). This is described, please imagine thick Germanic accent, as 'Optischer Cleanroom'!

The controller for this is an interesting piece of kit and is part of a family of sophisticated control equipment, all with membrane front panels. Apart from colour processing, these include control for driven spotlights, they make a motorised yoke for the Spektron, 128 channel matrix soft patch, modular 16 channel lighting programmers, both dimmer and power packs and a 256 channel/scene lighting desk with built-in real piano keyboard access. Interestingly, the designers of this equipment have seen the benefit of being able to provide integrated control with common protocols and all these machines dovetail into a neat multipurpose system. Whether they are also compatible with any of the industry standard protocols - a mute point - is not immediately

apparent.

Each programmable controller becomes a module within the system and its programmes are recalled by a single keystroke of the 16 white keys on the piano keyboard, and up to 16 different pages of these memories are accessed by the black keys. Most people will appreciate that this is necessarily a potted description due to the constraints imposed on this article, however more information can be obtained from Julie Garton at Optikinetics who are ACR's UK distributors. Opti's, by the way, unveiled their powerful Strobeflower effect at the show.

Once again, one was mightily impressed with the phenomenal laser presentations from both Tarm and Laser Media. The use of fountains by the latter was particularly inventive, indeed their 'party' piece was an extravagant production. It's not often I get winked at these days, and it was certainly a first to be at the receiving end of such flattering attention from a female laser graphic. Although its relevance to disco still alludes me, I feel sure that such expertise must find a receptive market at audio-visual product launch spectacles. On a less happy note, I was not so impressed with Laser Media's Color Rays on this occasion as they seemed to be down on brightness and colour rendering and I have puzzled long and hard as to why this should be. Was it seeing them as part of a show including lasers, where one had previously seen them demonstrated on their own, or is it that they have to be set up just right? Answers on a postcard please.

On this same stand, although missed by many due to adverse siting, were the first examples of Avitec's Light Mover. Providing pan and tilt, nine dichroic colour selection plus white, six gobos plus blackout, and auto iris, it also offers variable speed on the non-positional functions. It is based around the 575W HMI lamp much favoured for such products due to its high colour temperature.

British laser companies were much in evidence but, with the exception of Laser Graphics, seem to be reducing their dependence on laser product. Could this be because of an anticipated downturn in sales resulting from driven lighting making a large hole in the budget normally allocated to lasers? A point denied by Geoff Jones of Laser Systems, who nevertheless concentrated on the launch of their new Colour Sweep mirror driven articulating lantern and their colour mixing downlighter called Colour Bar. The Colour Sweep has its animating mirror cunningly protected in a Borosilicate sleeve, looking for all its worth like a latter day Panca, but will obviously benefit from the consistent brightness that this should en-



Operating the Starlite system control console. The Starlite remote colour change luminaires from Tasco were one of the Magis hall highlights.



Numerous control systems from Fly of Mantua confirm the company's position as a major Italian exporter following good overseas exposure in 1988.

sure. The product, which is available with a choice of 360W halogen or 400W HTI, needs some fine tuning especially on the control element but should find a receptive market once sorted.

Laser Grafix were impressing with much improved graphics which, as their name suggests, should really be their forte. For Laserpoint it was an unfortunate non appearance situation, following a dispute with the organisers and the allocation of appropriate exhibition space.

There is certainly some confusion brewing up over names. How about TAS, Tas Stage and Tasco? There is absolutely no connection between these companies as far as I know, yet the first two are both trussing manufacturers, one Italian, one British, in fact TAS had rigged a very impressive stage set at the show. Tasco, on the other hand, are the manufacturers of the Starlite moving light system as used in Metropolis (see April L+S). Their performance at Rimini, in conjunction with a desk which included a video graphic

plot of the stage from three angles, certainly confirmed that their system is ready to be taken as seriously in the theatre as it obviously already is in rock 'n' roll.

I particularly liked Le Maitre's LSX heavy fogger, which I somehow failed to notice at the PLASA show, and, as each unit despatched comes with a free copy of the Mick McManus joke book, I am sure it will sell like hot cakes (whoops). It will certainly add new meaning to that old song title: 'Smoke gets in your socks'.

New Light Sources in Entertainment

Francis Reid reflects on the Rimini Magis seminar

The primary purpose of any trade fair is to catalyse interaction between user and supplier. But it can also provide a forum for cross-fertilisation between an industry's various sections which tend to operate in parallel but with a considerable degree of isolation. Our entertainment lighting industry is at a point in its development when there is a generally recognised need for more cross-fertilisation between the procedures and technologies of the various live and mechanical performance media. The equipment on the stands stimulates a great deal of informal contact: we all roam the exhibitions looking for ideas, following up interesting observations by picking the brains of the sales engineers. But there is a growing urgency for the various lighting users to sit down a little bit more formally to talk with each other and with suppliers to establish where needs integrate and where they diverge. When this happens, we usually find that our needs are closer than we thought!

Magis chose the new light sources as a subject for just such an afternoon. Three lamp manufacturers (Osram, Philips and Sylvania) presented their view of the technology, and a quartet of lighting designers talked about their specialist

areas as light source users. Pino Pinori (cinema) and Aldo Solbiati (television) discussed lighting for their respective camera while I dealt with the theatre's human eye. Renato Neri covered the needs of live shows, the mega star concerts where the lighting has to bridge the needs of both the human eye and the video camera.

A major theme to emerge from the manufacturers was their apparent polarisation (I hesitate to call it war) on the respective merits of the established HMI and the newer MSR (Medium Source Rare Earth) lamps. The symposium listened but seemed reluctant to discuss the issue: I suspect that most of those present are waiting, like me, for hands-on experience with MSR lamps in appropriate luminaires under show conditions. However Mr Van Den Plas of Philips put a case that whetted this particular user's appetite for MSR.

Although there was some mention of the differing quality of light from various types of sources, much of the discussion was concerned with the potential of the high intensity available from discharge lamps generally. Users of a film or video eye are naturally much concerned with matters of colour temperature, while live show people home

in on the dimming problem. Few users seek an increase in overall intensity levels. Film and camera sensitivity do not require it and the iris in the human eye closes up in response to more brightness. Lighting is all about balance. In the 1960s the great American designer Howard Bay said 'all theatres should have one 5kW light but only one . . . give them two and the dramatic effect will cancel out.' A bit extreme perhaps, but nevertheless fundamentally true.

While a major attraction for lighting designers is the ability to make positive incisive lighting statements which cut through general tungsten halogen stage light levels, the really big advantages (and consequently potential market) are in large venues with long throws. With venues increasing in audience capacity as a response to economic pressures, it can be a very long distance from spotlight to stage. Only the light from discharge lamps is sufficiently intense to make the journey. Discharge lamps have long been the norm for follow spotting but are likely to find increasing general use, both in fixed and remotely movable instruments.

While the partial electrical dimming achievable with discharge sources can be acceptable in the studio, full control down to blackout is demanded on the stage. This means mechanical dimming and is mainly a financial rather than a technical problem. Remote mechanical dimming has been in regular use for more than a decade. Pani use



Rob Field of Lightfactor (left) pictured against the company's ingenious illuminated explanatory 'wall plan' for lighting control by 'Commander' and other units.



Laser Grafix were demo-ing both Midas and Prisma systems with help from Optikinetics and Wembley Loudspeakers.



Pasquale Quadri (right) demos Clay Paky's Golden Scan.



Part of the huge Spotlight Milano display in Magis.

motorised glasses, graded from clear through to opaque, on their scenic projectors while they and others have also used remotely operated venetian blinds. Diaphragms are another valuable technique, probably at their most currently sophisticated state of development in Vari*Lite. With focus, colour and mobility functions being incorporated into spotlights and controlled through digital information, mechanical dimming no longer seems the hazard (or indeed the unacceptable expense) that it seemed when we got our first CSI lamps 20 years ago. And if we are going to go to the expense of putting remote facilities on a spotlight, we might as well do it on a bright one!

Colour temperature has never had the importance in theatre that it has in film and video. Stage lighting designers have become used to taking into account the reddening consequences of dimming when choosing colour filters. However mechanical dimming offers the bonus of maintaining colour temperature throughout a fade.

But my own problems in using discharge lamp followspots (since the first 400 watt CSI in 1967) have not arisen from their quoted colour temperatures but from mis-matching of pairs. This has quite often been initial mis-matching between

new lamps, but more usually a lack of balance developing due to differential rates of colour shift. The colour shift curves presented in support of MSR sources are encouraging and I look forward to checking them with my eyes (in a theatre, of course, not in a lab.)

A cheering note for theatre's cost accountants (if any there be): with discharge sources, quoted lamp-life has some practical significance in predicting how long a lamp will last, whereas under electrical dimming life is virtually uncalculable.

The manager in me welcomes the cost-effective design improvements underway in halogen lamps, but my lighting designer's eyes tell me that halogen stage lighting has been very close to the end of the line for some time now. Future development is likely to mean only minor refinements in optics and mechanics plus a lot of badge engineering. Halogen spots will continue to be the backbone of theatre lighting rigs, but any improvements are more likely to be noticeable in the budgets than on the stages.

I remain hungry for low-voltage sources. Apart from the bulk and weight of their integral transformers, my 1961 Reiche & Vogel beamlights (24 volt 500 watt) were just about the finest tool that I ever had at my disposal. We still await heat-

stable electronic transformers. But at Rimini, Osram penetrated the usual gloom and doom on this topic with some hope for the day after tomorrow.

Meanwhile, my attention at exhibitions will concentrate on digital remote mechanical dimmers; and for static spotlights even more than for moving ones. Because, despite all the undoubted joys of being able to remote all the functions of a moving light, the most critical feature of a light beam is the angle at which it strikes the actor or object. Shifting this angle means physically repositioning the whole light. Or using a lot of lights. So a cost-effective approach is still normally going to mean a rig incorporating a lot of fixed instruments, even when some remotely movable lights are included to speed refocusing and offer opportunities for dynamic effects.

Lamps are the fundamental source of our light, and the history of the development of entertainment lighting shows virtual total dependence on the pace of lamp research, development and manufacture. The dialogue has traditionally been between spotlight manufacturer and the lamp giants. To include the user is rare, and Magis deserves our thanks for stimulating a dialogue that should surely continue.

Design Counts!

Avitec designer Paul Dodd wants to see it looking good

It was a welcome change to be in Rimini as a visitor rather than as an exhibitor this year, not to be tied to a particular stand but free to roam the spacious halls. For spacious they were, allowing exhibitors to construct some very impressive stands at very realistic prices. The cost per square metre of stand space was sufficiently reasonable to permit the budget to be spent on making those square metres look good.

Style and design flair is something of an innate talent for the Italians. Certainly there were some of the oh so predictable display shells, and a number of the 'black box/ten' variety too, although most of these were, at least, attractively clad in an attempt to enhance their external appearance.

Some of the most creative stands came from companies whose main activities are furnishings or interior design, which is perhaps a significant indication of the importance Italians place on creating an extremely imaginative and totally coordinated interior/image for their clubs. One design company, CREA, used the fuselage of an old aircraft as their stand. A certain amount of lateral thought to catch eyes and awaken curiosity quite effectively. Another interesting display was an array of tubes and pipes of opaque plastic, that used crossfading neon to change the colours of the entire structures.

It is obligatory that I mention the Coemar stand at this point. A huge structure, totally open in a virtually blacked out hall. Highly visible, it provid-

ed the ideal vehicle to display their new 'Jupiter'. These powerful positionable mirror projectors needed the height and space to come into their own. They achieved the perfect display for these impressive units. The downside was the difficulty in locating staff to question, and the problems of discussion with too much ambient noise and distraction from such an open display.

In my opinion, Laser Media had the balance just about right. A spacious display area with banked seating, and open and bright section for discussing business away from the display, and easily distinguishable staff plus an excellent concept/design finish to the stand itself.

The message of Rimini was not to stick a mirror on the front of whatever, but that there is a whole lot more to stand design than the majority of what we have seen in London to date. Although I do not suggest arriving at Olympia 2 with parts of B.52's, it is the **thought** that counts!



Lila Franklin presses the button to fire the LSX low smoke converter on the Le Maître Lighting and Effects stand.



The design element. Tubes and pipes of opaque plastic used crossfading neon to change the colours of the entire structures.

Thoughts on Lighting Equipment

from Graham Barron of Lizard Lighting Designs

Considering that SIB Rimini is traditionally the launching point for new products on the European market, this year's show was a little uninspiring. The stands themselves were, as always, very professional and impressive in themselves, but when it comes down to product (which is what we are all most interested in), not many manufacturers seem to be developing anything that might be called innovative.

There were a few exceptions, notably the High End Systems 'Dataflash' strobe, which is taking them down a road that nobody else in the industry seems to be travelling on. Whether it's the right road remains to be seen. I have yet to find a job that requires more than half a dozen strobes, let alone the 144 that were on display here!

Most European manufacturers clearly see the way forward is to use intelligent mirrors. There were few lighting stands that didn't have some kind of moving mirror fitting, and every lamp source available, from the good old Par 36 to the mighty 1200 MSR discharge lamp (in the Coemar Jupiter), was being bounced off a piece of glass and thrown around the room. The one advantage of this is that it is now possible to buy 'intelligent' lanterns to suit any budget. Some lower powered units with only a simple colour change and positioning system will no doubt be appearing in low budget schemes. But you only get what you pay for.

This was aptly demonstrated in the displays by Clay Paky and Coemar. The up-market lanterns give an up-market performance. The Golden Scan show was as impressive as ever, but Clay Paky failed to come up with the new Super Scan as promised, although a model was on display.

Coemar, however, did show the previously mentioned Jupiter. With 12 colours and 12 gobos and a choice of 700 or 1200 watts of power, this seems to be the ultimate disco lantern at the moment. It's also good to see that they have the confidence to offer a three year guarantee.

On the smaller scale there were some nice novelty lights, notably the Proto from SGM. Again it's all done with mirrors, but this one is a good variation. One revolving mirror deflects the beam onto a static mirrored hood which appears to throw the light out at different angles.

Litebeam of Italy also showed some interesting projectors as did LED with their variation on the Moonflower theme. TAS, the staging people, had a small smoke ring machine which was very competently puffing out rings for hours on end - but you'd never get me up on their moving stage platform!

Studio Due also have a great variation on the Moonflower with 'Crazy-Moon'. But it's even more proof of what the European manufacturers keep on telling us: it's all done with mirrors.

A Non-Standard Show

Mick Martin of Axon Digital Design (creators of Oska) says it's time to reform the industry's digital dementia.

Rimini? Well, one thing's for sure, there was no shortage of standards at this show. Apparently mindless movinglightomania grows, and along with more dedicated controllers, obscure protocols and less compatibility for the user. It seems incredible to me that with the recent push for system integration, unique output protocols not only survive, but actually thrive.

The USITT DMX 512 standard is more than adequate to control any moving light systems, indeed virtually any lighting desk could control these lights if only interfacing was standardised. And yet not one manufacturer of these lights can see the validity of adopting a standard protocol.

There are many misconceptions about the DMX 512 standard which have not been properly addressed: one is its apparent 512 channel limitation, and another its resolution. The standard has a start code which allows for future expansion; and this expansion could include a page code, for

example, allowing up to 236 pages of 512 channels (if really necessary). The resolution can be easily increased from 8 bit to 16 bits if consecutive bytes are taken together - an increase from 256 to 65,000 steps. (The latter point was missed in Avolites otherwise stalwart support for the standard in last month's L+S).

Moving light systems seriously limit themselves by not adopting this standard, and in Europe manufacturers seem very reluctant to take this step. However, in the USA things are rather different. An example of this was seen at Rimini, where Lightwave Research of Texas has come up with a DMX 512 interface for its excellent Color Pro product.

Some years ago the industry adopted the 0 to 10 volt standard with unanimous success (well almost unanimous). Now is the time to reform the industry's digital dementia.



Strand Lighting/Quartzcolor party piece with leader Andrea Molinari (second left), Julian Mackenzie (right) and team. Stories were the Italian launch for Lightboard M and the world premiere of Quartzcolor's 'Quasar', an HMI/CID 1200W Par 64 head with flicker free electronic ballast.



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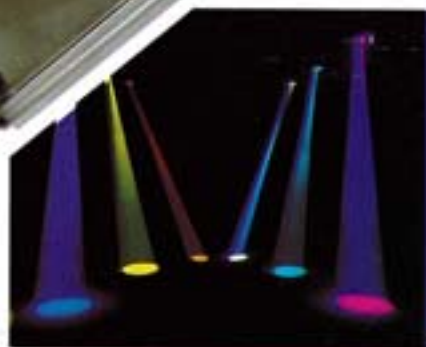
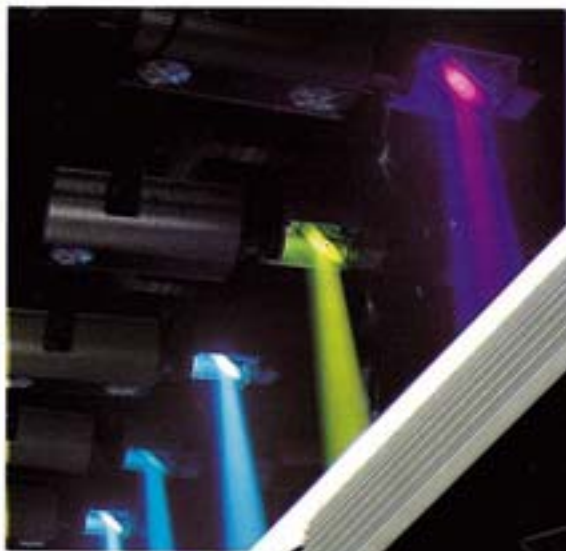
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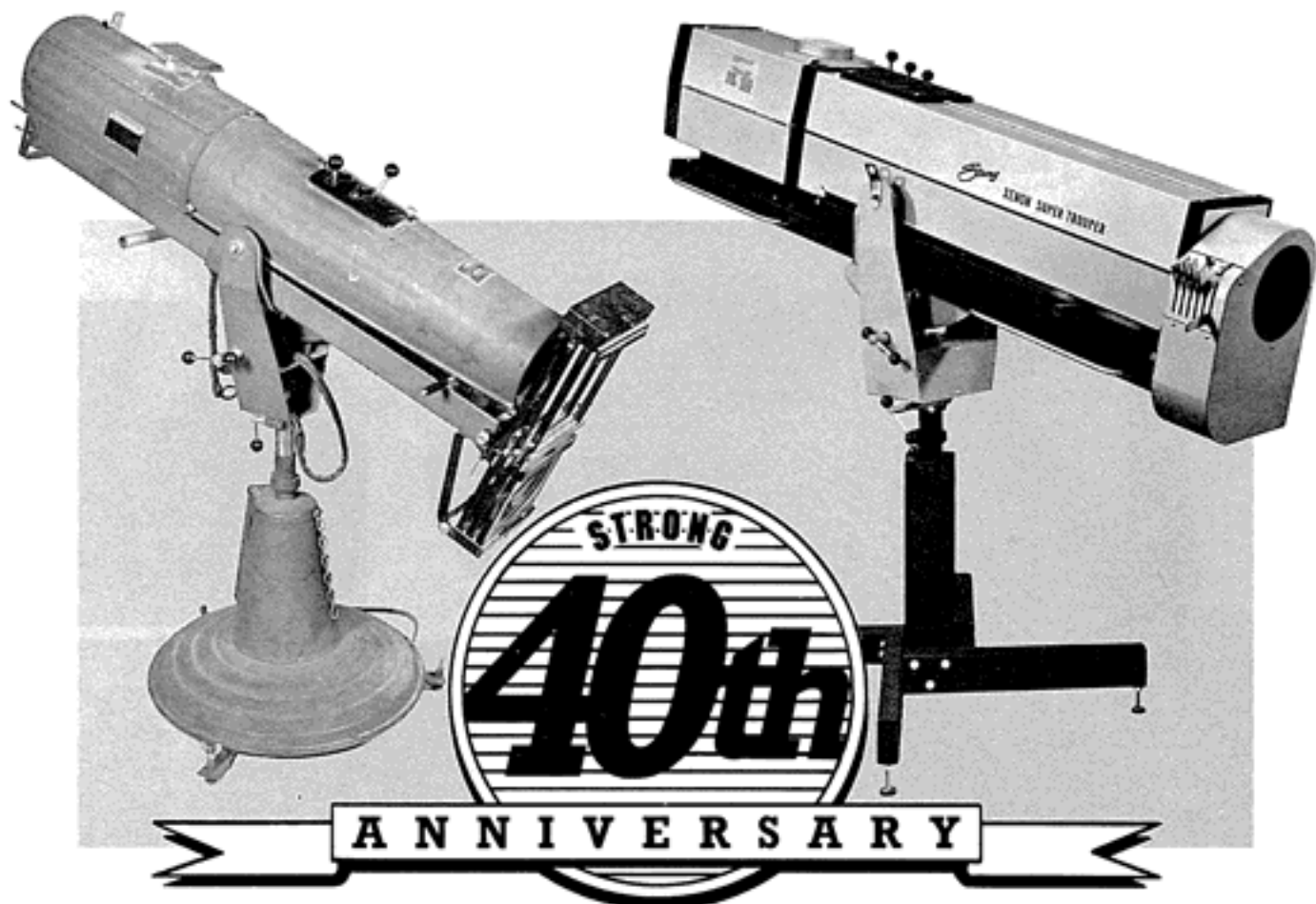
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Continental Focus: SIEL - Paris, France

Ruth Rossington reports.

For the lighting and sound industry, April in Paris has associations other than all its renowned springtime charm. SIEL - the seventh exhibition of the Salon International de L'Equipelement des Lieux de Spectacles et de Loisirs, represents many things, but perhaps most importantly of all a show of unity by the French lighting and sound industries.

Traditionally the French entertainment equipment industry has been regarded as a domestic curiosity in an otherwise outward looking country. It has sought to protect its home market and hasn't worked hard to export its products around the world. Now, there is a spirit of change in the air. French companies are becoming aware of the possibilities outside France and, with the market unifying in Europe, they are keen to promote themselves. So Siel was a serious show - for the French, and for those wanting to get into the French market place from outside.

French lighting manufacturers **Sapro** chose a novel way to show off their products. They mounted an exhibition stand on the rear of a trailer and just drove it in. Among the new lighting effects on show in Paris were the Laserlight System 400, a laser effects projec-

tor together with two attachments, CORM a fast colour changer and MAS, a mirror effect controlled by music. Epsom is a 12 beam effect projector along with Sound Magic, designed to control it. A double scanner Crazylight plus Crazy control were also seen for the first time (Sapro products are distributed in the UK by Jivelight).

Celco was displaying its full range of lighting control equipment including the Celco Gold, the Celco 60 Major, the Celco 30 major, two Celco Babies and a complete range of pro dimming equipment. It is the first time that Celco have exhibited in their own right at Siel. Previously their products appeared on the Pulsar stand and Keith Dale explained that the move was a direct attempt to create a separate identity for Celco at an exhibition that could enhance their 40% export figures to Europe.

The **Pulsar France** stand, under whose umbrella Celco sheltered, offered sanctuary for a host of other companies. As exclusive distributors in France for Celco, Pulsar, Clay Paky, Le Maitre and Adda Super Cases, the main point of the Pulsar stand was to illustrate the effects that can be achieved through the combination of a variety of equipment such as an integrated control

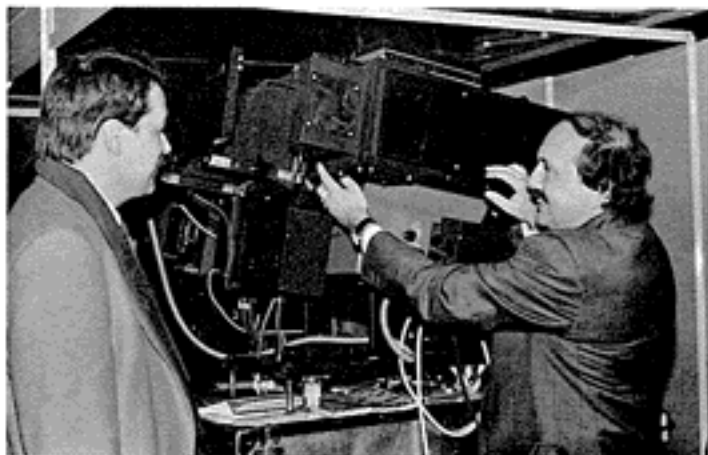
system i.e. OSKA and Clay Paky lighting. As ever, the stand was besieged by fascinated onlookers who were soon made aware that having controllers and effects together creates more than the sum of the individual parts, particularly when you've got a good lighting operator on board.

Sonoss mounted a large framework of Thomas trussing (they are Thomas's distributors in France) to demonstrate the multitude of uses and applications of the equipment. One feature of the stand that proved to be something of a crowd puller was the motorised chair lift which provided those brave enough with panoramic views of the entire exhibition. Also using Thomas trussing, the French company **Littec** were exhibiting a 'convivial' computer controller specialising in horizontal and vertical manipulation of lifting systems.

A fair selection of **Light & Sound Design** hardware was given prominence on the stand of French distributor Fiat Lux. The stand, which again collected together various companies, was an impressive reconstruction of the Arc de Triomphe. The monument, veiled in a gauze tricolor, rose high into the recesses of the Parc des Expositions and cunningly concealed a tier of of-



Steve Warren (left) and managing director Derek Halliday (right) of Avolites with Noël Djimtoloum of Regi Scène, France, their French distributors.



Pani's Hermann Sorger (right) shows their new automatic slide changer to Owe Holmund, managing director of COH-Marketing of Finland.



Rod Bartholomeusz (centre) of Cerebrum Lighting/Presentation Consultants with Martin Rihn (left) of Stacco and Jean Françoise Cheron of Fiat Lux.



Celco's Keith Dale (centre) with yet another two-hander on the Gold. It was the company's first solo effort at Siel.



SIEL 89: colourful and patriotic.



Celestion's SR system on display.



Lee Colortran's Joe Thornley checks his Windsor.



Celco's cardboard cut-out fashion show starring Keith Dale and Colin Whittaker.



Business in progress on the PLASA/L+SI stand, Laurence Chan (left) of Laser Theatre Lighting of Hong Kong with Le Maitre's Mick McManus and Chris Matthews of Laser Creations.



Oska and Clay Paky Golden Scans for Pulsar France.

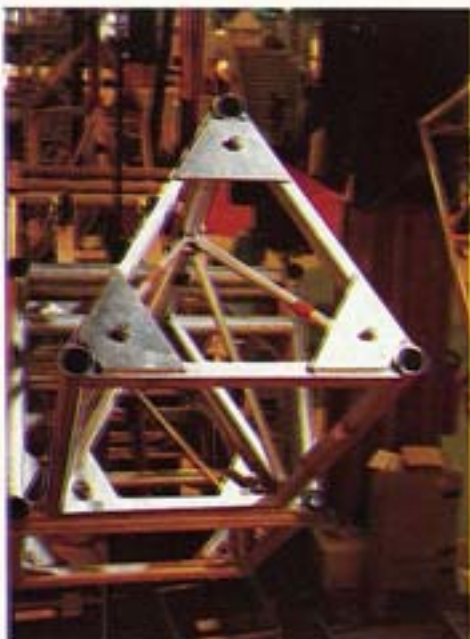
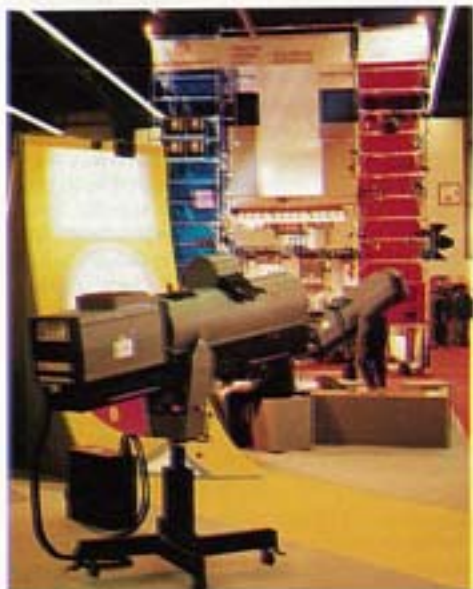


CCT's luminaire range on the CCTL stand.



Chosen for the Opera Bastille. Yves Ruellan of Hardware Xenon with one of their new followspots.

SIEL from all angles



Major interest in control system on the Robert Juliat stand.

Vari*Lites under the Arc de Triomphe.

fices. By far the greatest revelation, however, was the tropical haven at the summit which served as a magnet to all those British exhibitors seeking liquid refreshment away from the crowds. (At least this is what we had been led to believe, having not actually paused for refreshment ourselves for the entire four days). Rigged up beneath the Arc on LSD's trussing and ground support equipment was Colormag in full swing, alongside which were examples of Powerdrive equipment.

A quick trip around the Arc de Triomphe, minus the rotating traffic of course, revealed another British company, **Soundtracs** displaying the new SPA sound reinforcement console launched at Hamburg AES, which goes into production in July. Known primarily as manufacturers of recording consoles, the company is now applying the same technical know-how to gain entry into the sound reinforcement market.

Hardware Xenon featured a series of high-power projectors for communications and show applications. For 10 years they have been involved in the design and manufacture of xenon arc lamps. Most recently the company has developed a new generation of follow spots that provide both photographic quality definition by means of a five lens zoom that enables the beam to be varied from 3 - 12 metres at a distance of 50 metres and optimised cooling of the filters, iris and gobos. The projectors have been chosen as part of the specifications for the Opera Bastille.

Just as a point of interest, the Paris Bastille, we are told, will be the world's most technically advanced opera and it seems that most of the French companies showing at Siel have had a nice bite at the cherry. The inauguration of the first stage of its opening is set to coincide, appropriately enough, with the Bicentenary of the French Revolution on July 14.

Mole Richardson were providing the space from which **Lee Colortran** could illustrate their range of architectural, shop window, fashion and conventional TV and studio lighting. Their new modular Windsor range of theatre lighting is in the process of being introduced, and designer Joe Thornley was on hand to explain its finer points.

One of the few American companies in evidence was **The Great American Market** whose products featured heavily on the Dimaphot stand. GAM hardware was perhaps the most profiled equipment at the exhibition - the Access Control computer, first exhibited at PLASA, was on the R V Electronique stand and various other products also appeared on the stands of French companies who are not directly dealers. GAM's Bob Gordon explained that a large colour changer in the Colourwiz range is ready to come on line in the next few months. Siel was not to be privileged with its prototype as GAM were showing it at USITT in Calgary in the same week.

The ideas of a British company combined with input from the French brought about the set up of **CCTL**, the French assembly and distributing operation for CCT. As you might expect, the display featured *Minuette*, *Starlette* and *Silhouette* luminaires.

Fane Acoustics, **Harrison Information Technology**, **Carsbro** and **Ross** were all in evidence on the stand of Camac Audio, French distributors for the four companies. Fane had on display chassis loudspeakers and a collection of standard components, sharing the stand with a secondary line that the company have just begun to launch - the Fane Court series of loudspeakers, which had their first airing at Siel. As Mike Wood explained, the range is part of a complete audio series aimed at the French market and with Fane doing 50% of their business overseas, it is not hard to see why they should be concerned to promote their wares abroad.

Avolites' Derek Halliday reported the first sale of the QM500TD into France, courtesy of their agents Regiscene, who were providing a base for a selection from the Avolites range of control systems along with product lines from Turbosound and DDA. **Laser Media**, **Light Processor**, **Light Engineering**, and **Sound Creations** made their individual appearances in the Animation Lumineuse booth and **Zero 88's** range of lighting control consoles were on view on the Robert Juliat stand.

Many of the British companies in Paris were at the show to develop a marketing strategy with their French distributors. Mike Hall of

Rosco was there for just such a reason as was Graham Harrison of **Hill Audio** and Larry Dane of **Citronic** whose products were to be found on the stands of Dimaphot, High Fidelity Services and Prodis respectively.

Marks for individuality must get to **Teatro** for their unique 'stand'. As Mike Lowe explained, the intention was to get away from the concept of the stand crammed with products to one displaying only specific lines. Teatro were certainly exploiting the hospitality angle to the full. On this occasion, the company were showing their 2000W profile, 1000W profile, the fresnel range, plus an excellent line in Italian white bubbly.

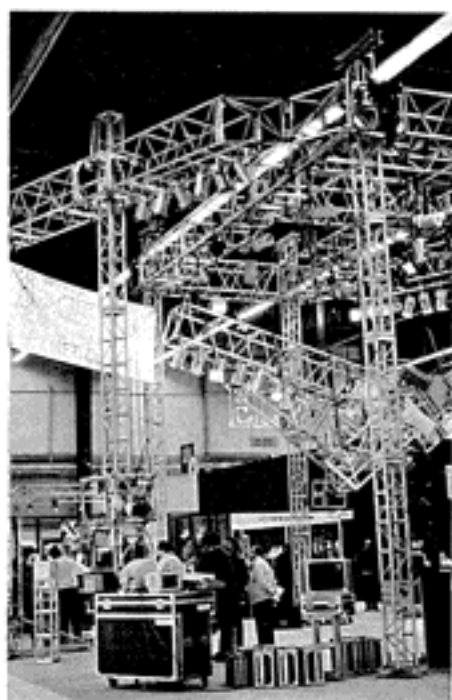
J. Collins launched several new lighting products including a new lighting controller the Master TL 8 2x4 channel, Key Flash and strobe control. In conjunction with this, it was also the first showing for the Stage 612 6x12 dimmer and the Super Flash 2 strobe controller. The company also manufacture a range of sound products under the name of Chesley, which includes amps and mixers, their latest being the Chesley M6001. J. Collins also had on display, alongside their own products, JEM smoke machines, for which they are the main distributors in France.

On the Link Laser stand, **Laser Creations'** Chris Matthews was on hand to demonstrate the remarkable Laser Video projection system. Also on the stand were Synchrolite Europe who still have to appoint a distributor in the UK for their grey Vari*Lite look-alikes that drew a great deal of attention.

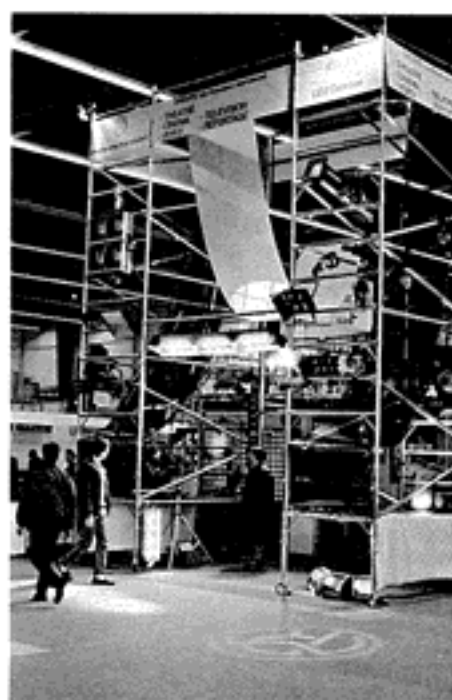
Ludwig Pani, on the stand of Koogan International, chose Siel as the exhibition at which to launch their new automatic slide changer for large scenic projectors. It is capable of carrying 60 slides in a computerised carriage, with variable projection times. New also to Siel was a 4kW stage projector complete with an automatic slide changer, which, as Hermann Sorger was quick to point out, provides the perfect medium for either advertising or architectural 'painting'. The new Ludwig Pani 1202 followspot was also in residence - part of its attractiveness is its adaptability and its compact design, as Hermann explained: "Austria is only a small country and we don't have that much space!"



Colorwiz on the Scenilux stand.



The Thomas/Sonoss combination.



Lamps/colour for Mole Richardson/Lee Colortran.



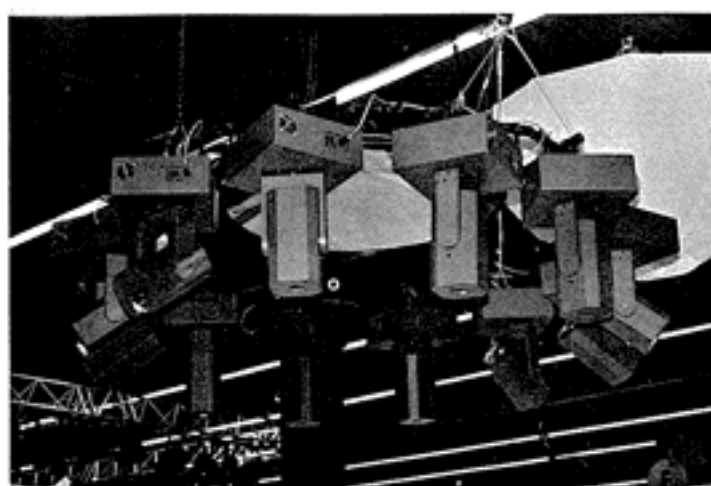
Michel Verlinde of Liltec on the Sonoss stand with the VGB 70 motor control system.



Stefan Ettmayer with Ludwig Pani's new HMV 1202 compact follow spot.



Mervyn Thomas (left) with Philippe Coudyser, James Thomas Engineering's French distributors.



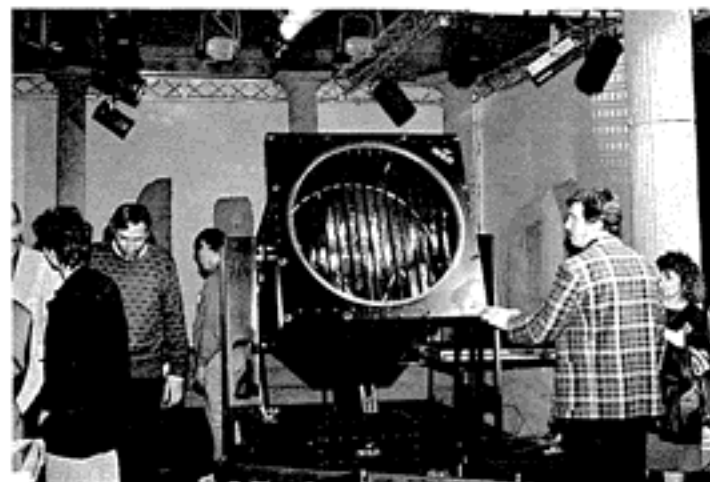
A circle of Synchronites from Dallas.



Italian tea time: (left to right) Teatro's Mike Lowe with Bob Abecera of Pariscene, Yvon Kleinbauer and Philippe Groggia, head of lighting and lighting control technician respectively at the Comédie Française, and Owe Holmlund of COH-marketing.



Citronic: pushing hard into Europe.



The Sirrus, ready for France 1989.



Ari GB's Tim Burnham (right) with their Imagine control system.

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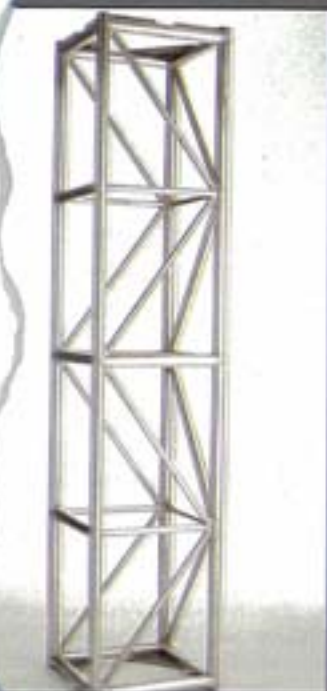
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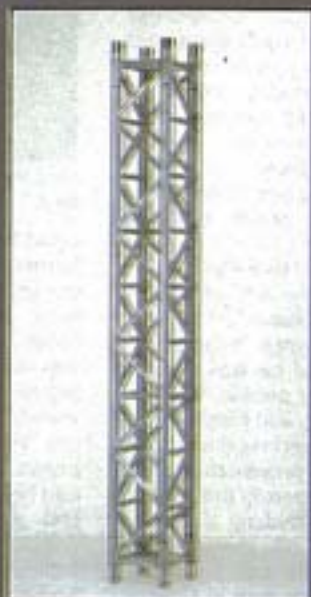
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Pre-rigged truss in trucking position (8'). Pre-rigged truss in hung position (4').



A-type general purpose truss.



F-type folding truss.

S-type square truss.

E-type triangular truss.



HAVE Facilities

HAVE Facilities' new South East London base is also the new home of Luff Light and Sound. John Offord talked to Mark Huffington and Alan Kilford about their future ambitions.

Originally announced in the news columns of our March issue, Luff Light and Sound, one of London's leading hire, sales and installation companies, recently became part of Mark Huffington's HAVE Facilities Group. And it is a combination of some considerable clout, with a joint turnover of over £4m predicted for the first year of trading.

Along with the takeover came a change of premises and the combined operation is now based on the Chiltonian Estate in Lewisham in South East London. £150,000 has been spent on renovation and refitting of the 20,000 sq.ft. premises, and when I visited in mid-April things looked well organised and smart, with just a few corners awaiting a final paint and polish.

Operationally, Luffs will retain its identity, and Alan Kilford (ex-Bose) was recently appointed as sales director, to work in close liaison with the managers of the Have Group. His specific brief is to establish Luffs as 'the' one-stop shop for the lighting and sound business.

The driving force behind all these changes and schemes is Mark Huffington, exceedingly well-known in the area of London-sourced audio visual and projection side of major presentations such as product launches, event spectaculars, and 'big' theatrical and operatic productions; but possibly less so in terms of the pure day-to-day world of theatre equipment sale and hire. Which is, of course, where Luffs will come into the equation.

Mark Huffington started Have Facilities in May 1984, with the simple aim of "doing each job properly as it came". Formerly managing director of Theatre Projects, he left because he considered he was making too much money for other people. He'd initiated TP's AV department, and his technical forte has been in the technicalities and trickeries and audio visual presentations. He was well known as TP's expert in the field at a time when it seemed anything a bit different, and anybody a bit special, was located somewhere in bits and pieces of offices split up around Long Acre in Covent Garden.

By 1989 he'd got Have Facilities to a position where it had already overtaken Theatre Projects' turnover with only half the staff. And the clients had followed: big names like Commercial Presentations, Imagination and Purchasepoint - three of the biggest outfits in the presentation business in the UK - were using Have's combination of equipment and expertise to take care of all aspects of a production.

Have's rental stock includes, as Mark Huffington put it: "all the general work horses for projection, lighting and sound". But what goes with that he considers more important. "We sell on people, rather than on equipment," he told me.

And many of the projects undertaken are special in their own right. Given Have's client base, very few jobs are ordinary. As Mark Huffington explained: "We have a reputation for doing the unusual, and doing the unusual well. And we also have a reputation for listening to what the clients want."

The background to Luffs is as different as



Mark Huffington: "... our people are extremely good at what they do, and they are going to go out and do it."

could be imagined. Luff Light and Sound was formed in the mid-seventies to provide the equipment and technical support for the stage productions of The Black and White Minstrel Shows, and its founder, Robert Luff, was also closely associated with several productions, including traditional summer seaside shows.

In 1984, then chief executive John Ball began to extend the company's operations into hiring lighting systems to the large West End shows, the first of which was the celebrated 'Guys and Dolls'. Many other well-known productions followed, including 'Follies', 'Les Miserables', 'Phantom of the Opera' and 'Metropolis'. Also during this time, Luffs were developing the installation side of their business, completing system installations in both sound and lighting for major London hotels such as the Royal Lancaster, Thistle Tower, Prince Regent and the Royal Horseguards.

Alan Kilford's recent appointment reflects a new energetic marketing approach, and an immediate consequence of Luffs' recent absorption into the Have Facilities Group. He was at Bose UK for five years, most recently as managing director.

I asked him about the new situation surrounding the operation, and how Luffs sits within it. "Although the company enjoys a fine reputation in the theatre world, and for prestigious permanent installations, many people are unaware that Luffs offers such a comprehensive catalogue of services. It includes sales, hire, design and installation, servicing of equipment, product distribution and trade supply, as well as over the counter sales," he said.

"Now that we've got new premises, com-

plete with a special trade counter, we can encourage our customers to visit the facility for their purchases. In addition, we have call on the expertise of the whole group, so we can offer the one-telephone call facility to the industry and its customers."

Luffs are main agents for many major manufacturers including Bose, Turbosound, Strand Lighting, Citronic, Harrison, Allen & Heath and many others, and current projects include the lighting for 'Metropolis' in the West End (cover feature in our April issue) and the audio system for the Royal Horseguards Hotel in London.

Backing up Alan Kilford are Ken Priddy (technical services manager) and Ian Ferguson (hire manager).

It will be Mark Huffington's drive, innovative thinking and major client base that will move the whole operation forward - and not only Luff Light and Sound. "I saw Luffs as a company that had a good background, but it had no flair for the future," he said, "and there's no way that Luff isn't going to be the best hire and sales company in Europe. I bought the company because it had good potential, and good agencies, and Alan Kilford joined us basically because we both like each other. We agreed terms over two cigars and two cokes, and I promised Alan that I wouldn't interfere for a year. His brief is to make it work."

And the talking didn't stop at that little range of bluntspeak. Mark Huffington reckons Have's AV equipment range of stock is the widest in the country, and that they are the biggest suppliers of equipment. They already had a wide range of lighting equipment, and coupled with Luffs' and the source of new equipment through their various

agencies, Mark Huffington feels that the Have Group can more than adequately source any production, from small to major international shows. The installation market will also be actively pursued.

"My aim is to make it a genuine one-stop operation," continued Mark Huffington, "Have will source the major productions, and we'll be the best - not necessarily the biggest. We have a group of people who all started from nothing, who are extremely good at what they do, and they are going to go out and do it."

"As lead-times on productions have got shorter - over my years in the business they've reduced from eight weeks to 10 days as an average - production companies have got used to us giving a service, as the industry has improved. In fact, better than call us a one-stop company, we should be called a one-telephone company."

In addition to the central basic stock of equipment, specials are frequently purchased as necessity has demanded. "We've even had to follow the fads," said Mark Huffington, "and I find it interesting that the Americans are aghast at what we can achieve over here."

All the time, the emphasis is on getting the job right. "I believe in open communication, and I also believe in spending a little bit more time, or putting in extra equipment at no charge - even on the smaller jobs. On the other hand, we will actually turn down jobs if



Alan Kilford and Mark Huffington on site at HAVE's new Lewisham base.

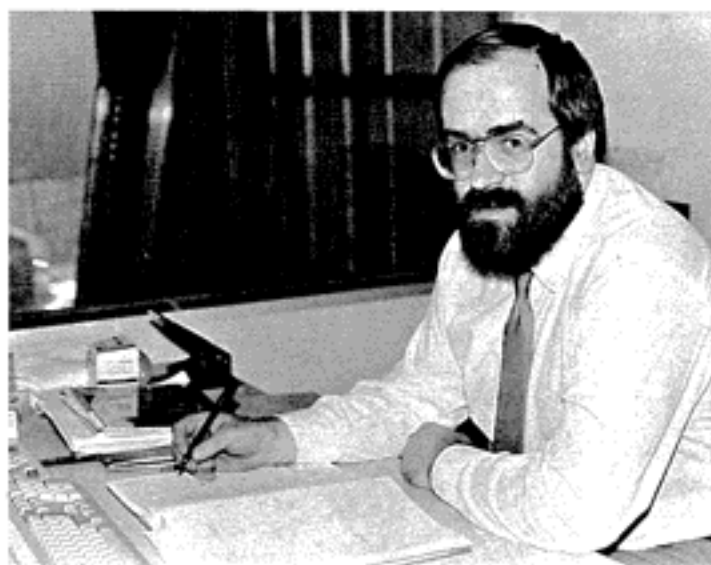
there isn't the money available to do them properly.

"We've gone too far down the line to afford to screw up any job," concluded Mark Huffington.

Alan Kilford had the final word: "I'm determined to get Luff's the same reputation for handling the unusual lighting jobs as Have Facilities have achieved in the world of major presentations."



Designer Phil Abbot is chief lighting manager, with a wide brief covering everything from AV to theatre lighting.



Ian Ferguson, hire manager, Luff Light and Sound.



Custom-designed sound equipment is part of standard procedure for HAVE Facilities.



Part of the warehouse with a hire order awaiting despatch.

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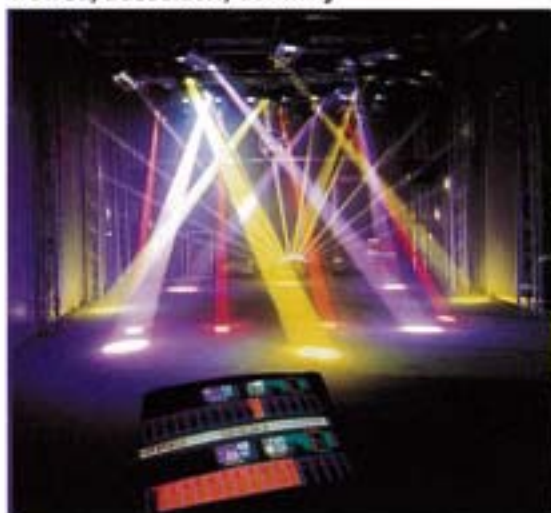
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Remote Control Luminaires

Graham Walne provides an up-date to our December 1988 feature.

Last year I was pleased to prepare a survey for this publication (December issue) of 'Remote Control Luminaires', and I concluded: 'L+S will keep an eye on providing a suitable update article in a future edition'. L+S always keeps its promises, and here it is.

Firstly, an update on products we have already featured. **Golden Scan**, which was so successful on the Pulsar stand at last year's PLASA Light and Sound Show, now has a sister product - the **Crystal Scan**. This is so new that information is limited at present, but the device is clearly aimed at those who would like Golden Scan, but cannot quite reach that level of sophistication; for example, gobos, irises and beam reducers are manually attached rather than remotely operated. Pulsar's own advertising clarifies - 'seen Golden Scan? Crystal Scan reaches the venues happy to settle for a close second'.

However, maybe you don't need to settle for a close second because Mushroom Lighting are now hiring Golden Scan, the only company to do so to date. A reminder: Golden Scan is a full remote control unit with pan and tilt available via a mirror system, six dichroic colours and three gobos. Dimming is not possible but there is remote iris, strobe and shutter; the light source is a punchy HMI 575 or 1200. Also look out soon for **Super Scan**, billed as a 'professional' version.

Another product now available on hire (from Cyberdescence) is the Strand PALS system. And staying with Strand products, their Parscans are available on hire from Meteorites Productions at Borehamwood. The purchase of most remote control devices requires a high capital outlay and the opening up of the hire market inevitably means that these devices will reach a wider audience. Hire is also a useful way of receiving product feedback.

The March issue of L+S featured two new devices, the **Color Ray** and the **Morpheus Pan-Command**, and since both articles went into detail, there is no point in my repeating others' words. However, for reference, let me clarify that whilst Morpheus has been around for some time, their Pan-Command control system is new. Morpheus offers the PC-Spot (sharp edge) and PC-Beam (soft edge). The Beam produces Par 64-like output all the way to flood focus and is fitted with an 11 colour scroller. The Spot zooms from 2 to 25 degrees and its colour mechanism will snap or crossfade, although there is an additional 11 colour scroller too, and 9 gobo patterns are also available. A constant theme of the Bill Klages article was the reliability, ease of setting up and operation of Morpheus. I have not been able to track down any UK agent so enquiries have to be directed to the USA.

Color Ray was detailed in Tony Gottelier's article, but it is well worth a second mention. This product is different in that it uses optical fibres to send light from a central lamp house to the scanners which provide pan and tilt. Four Dichroic colours plus white are available. Technically this product doesn't comply with the requirement of my original survey which featured equipment designed for lighting performers rather than for effects (Color Ray provides a laser-like beam of Cogent light). However, I think the fibre



Laser Systems' Gyrolight with control system.



A close-up of Colour Sweep.



Super Scan - introduced at SIB in Rimini in April.

optic method will catch on elsewhere; it's another of those ideas that has been discussed around the bar, and Color Ray has achieved it.

And so to products fairly new to these pages, **Gyrolight** and **Colour Sweep**, both from Laser Systems. Colour Sweep (see also SIB Rimini reports, this issue, Ed.) is a moving mirror unit (320 degrees pan and 110 degrees tilt) which, in addition to remote positioning, offers eight scanning profiles with speed and size options. Seven dichroic colours are available with step, strobe or sync. facility and the lamp is 400 watt high intensity. Gyrolight is a complete spotlight (400 watt HI source) with 360 degrees of continuous rotation in pan and tilt, eight dichroic filters with step and strobe facilities, eight gobos and variable motor speeds.

Varimot comes from Emil Niethammer, not a name perhaps that is at the forefront of theatre lighting in the UK, but a major name on the Continent where the unit is popular, especially in opera houses. Varimot is a precision high intensity 2kW Halogen unit offering +/- 1 cm error in pan and tilt over a 25 metre throw. There are seven versions dependant upon whether you need a wide or narrow angle zoom profile, fresnel or projector and all models can be fitted with either semaphore or scroll colour change. CCT will accept enquiries in the UK.

Another name more widely known on the continent than in this country is **ADB**, a company who were one of the founders of remote control, having installed systems in the Bolshoi in Moscow over 20 years ago. ADB are now launching remote yoke devices with accuracies of 1/1000 and 1/2000 and capable of fitting units right up to 5kW TV fresnels. In fact, the yokes will fit all



The Strand Lighting Parscan.

the new ADB range. This product is very new and there are no further details yet, so again I can conclude by saying that L+SI will 'keep you posted'.

Equipment discussed above:

(see also original feature)

Golden Scan

Hire: Mushroom Lighting (0604) 494866

Crystal Scan

mirror

pan and tilt, 2 lenses, 6 colours, strobes, manual iris, gobo.

Pulsar: (0223) 66798

PALS

Hire: Cyberdescence 01-446 4248

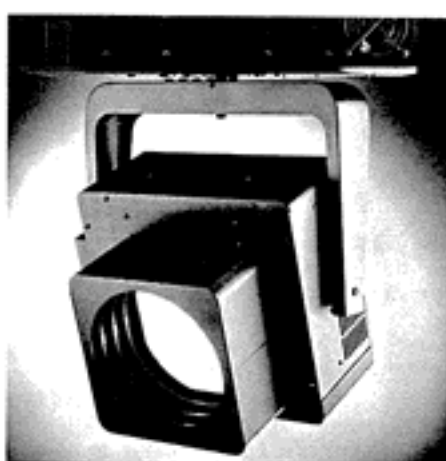
Parscan

Hire: Meteorites Productions 01-207 5111

Color Ray

optifibre

pan and tilt, 4 colours, cogent beam.



The PC Beam from Morpheus.

Lightfactor: 01-575 5566.

Pan Command

pan and tilt, zoom lenses, hard and soft edges, colour crossfades, zoom lenses.

Morpheus: (408) 295 4866 (USA)

Gyrolight

full remote

pan and tilt, 8 colours, 8 gobos, strobes
Laser Systems: (0633) 838280

Colour Sweep

full remote

pan and tilt, 7 colours, 3 gobos, strobes.
Laser Systems: (0633) 838280

Varimot

full remote

pan and tilt, 7 lens versions, 2 types colour change.

UK: CCT Theatre Lighting 01-640 3366

ADB

yoke

pan and tilt

ADB (Belgium): 010 32 2 7221711 (from UK)

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Meteorlites

The company who are specialists at moving lights around the world are now well-practised professionals in the art of moving the instruments by degrees. John Offord talked to Ronan Willson, who has also moved the company's base and at the same time invested huge sums in automated and television lighting equipment.

There is no doubt that young, privately-owned, professionally managed and singularly directed companies are now progressively taking over the reins of power in the industry - be it in manufacture, sale or hire of equipment. Many are approaching levels of turnover up towards the £5m marker, and more often than not, they are the driving force behind new ideas and innovations. The bosses are usually within a few years of forty, and have plenty of energy in hand to take their operations on to much bigger things. And as if to aid the process, some of the major operations whose markets they are attacking, have been going through a period of self-inflicted wounding.

We have already featured many such companies in the pages of our previous issues, and I would take a guess that the majority we have spoken to have at least trebled and in some cases quadrupled their business since the first edition of L+S in November 1985. To do it they have had to broaden their market base, and reinvest profits so that the latest technology can be taken on board - be it in new production equipment and research facilities or in the raw tools of the rental business.

We profiled Meteorlites Productions in late 1987 (see Vol.2 No.12) and the business was then Stevenage-based and essentially geared to rental, design and production of major concert tours, primarily for the rock industry. A little bit of television lighting business had also just begun to creep in . . .

Last autumn, director Ronan Willson took the company down to Borehamwood next door to the M25, and as part of the process has re-aligned the operation and invested massively in new technology equipment and allied facilities. I asked him about the background to the decision.

"The real concept behind the move was to increase the profile of the company. Out in Stevenage we were definitely perceived as being on the fringes; we weren't quite 'in there' as a London company. It perhaps

typified us as an operation; always just bubbling under the surface but not getting in there in the way I wanted. So the location change was very specifically to get close to or inside the M25, to have a London phone number, and to get a much more desirable position for people to come to. Also, we needed bigger premises.

"Here we are very convenient for both the existing Elstree Studio complexes (BBC and Goldcrest) which are a source of work in themselves and also extremely useful for any of our clients who wish to rehearse their shows. We have an arrangement whereby we can put our acts in at preferential rates. From a practical point of view it's good for everybody, because we can back-up and service a client during rehearsals.

"In Stevenage we were under pressure. We had a lack of space, as much in offices as warehousing. Coming here we now have an adequate facility for the work we undertake. We've got 23,000 sq.ft. and a very presentable office complex. The main advantage from day one was that we could organise all our facilities - equipment, racking, etc. - in a way that everything was clearly accessible.

"In the same way as location-wise we were on the edge of the business, in a pure business-sense we tended to be as well. So there was a deliberate strategy change to say 'let's grow, and let's get into the major markets and do our very best to establish ourselves as a division one rental company'. In addition to that we have set out to diversify and dispel the image that we perhaps had, which was that of a rock and roll rental company. To help break down that image we have diversified the hire stock, so that we can genuinely service all these different markets, being television, industrials, and so on."

Into Television

Over the past two years, television has provided an ever-growing proportion of Meteorlites' income, and it has come about on two pretexts, as Ronan Willson explained.

"Firstly, television is learning to use the technology and equipment of the rock industry, so the tricks and hardware we are already very familiar with have proved valuable. Also, we have chosen to diversify our equipment into conventional television lighting, and are therefore able to supply the total package. On speed of rigging we can save clients money. People who are used to working in conventional television technologies are definitely financially ahead by using rapid rig and de-rig equipment that rock has always used."

Automated Lighting - a major investment

Meteorlites has invested over £500,000 in pure inventory over the past nine months, and that's in addition to the spend on the infra-structure and facilities at the new premises. Much of the new equipment now out on hire is automated lighting, and Ronan Willson described his reasons for taking a direction that would frighten many a traditional hire company.

"Partly our decision was based on the fact that we have to remain competitive in the rock business, but we also recognise that the future of lighting is in new technology. The days of Parcans and simple luminaires en masse being the main lighting is really a thing of the past, and it was necessary for us to take a decisive step. We didn't want to dabble in a few changers here and there, job by job.

"The first thing we did was to negotiate



Ronan Willson: "the future of lighting is in new technology. The days of Parcans and simple luminaires en masse being the main lighting is a thing of the past."



Parscans in action on a major tour, Gary Moore style (lighting designer Paul Devine).

photos: George Bodnar

with Showlites in America to buy their British company Showtech, to take over lock stock and barrel all their inventory. It had a very large amount scroller technology and moving, colour changing Parscans. That was the first step. On the back of that we then bought heavily the latest generation of the same equipment, which are now sold by Strand - the Parscan and the full range of scrollers. In fact, we bought their entire UK inventory at the time.

"The result of those two acquisitions was that from literally having no technology we

then became one of the largest stockholders of scroller and associated automated lighting in Europe, and this has enabled us to be truly competitive on all our contracts, by not having to depend in any way on sub-rented technology. It has also enabled us to offer some realistic and viable alternatives to, for instance, a Vari*Lite show. While nothing we have is the equivalent of Vari*Lite, and the VL2 in particular is a product in its own league, there are clients who don't have the budget for these kind of items, and being able to present them with a

good looking automated show using different technologies does open doors in itself."

Meteorlites reckon they can now put a scroller on practically anything, from 1k or 2k profiles through to 8-light Moles and 2, 5 and 10k Quartzcolor units. And obviously they've now got a full range of film and television luminaires to put them on, based on Quartzcolor, from 2k Bambinos, through the HMI's, to 5 and 10k's. General stock-wise, Ronan Willson has stayed with Strand and the Cadenza and Cantata ranges.

"We've also broadened our followspot range," continued Ronan Willson. "We now have a substantial stock of long and short throw Xenon Supertrouper and Lycian HTI's. Aside from that, one significant piece of new equipment is a new ground support system. We have developed with Thomas a new tower which is capable of a two-ton payload with a 40ft trim height. Along with this is another Thomas product, their grid truss - a 1m x 1/2 metre truss which is capable of a 3-ton point load on a 60ft span. In fact, it is capable of unsupported spans of 100ft or so.

"The combination of these enabled us to build what we call the 'Wembley' grid, which is a 60' x 40' grid that stands 40' high and can have 9 tons flown from it. The entire structure stands on six legs and it was built for Iron Maiden at Wembley last year, allowing them to use their entire US touring system on ground support.

Technical Support

Holding a huge stock of entertainment lighting equipment, with much of it now involving far more tricky bits and pieces than



Snowy Johnson, chief technician, ensures Parscans are maintained in perfect order in Meteorlites' technical area. A total of over 350 automated lighting units are now held in stock.

simple racks of Parcans, trussing and cable, has also involved setting up support staff and facilities.

"It's taken time to piece together the team. It's not only true of the pure technical requirements, but throughout the company the infrastructure has taken time to get together, with a massively increased turnover compared to 15 months ago. But specifically on the technical side we have set up a nucleus of five people who handle all the maintenance, and within the team we have a broad range of talents, from metalwork to electronics, to handle all the routine maintenance as well as the construction of specials inevitably needed show by show.

"We don't take on many large scale sets, by we frequently undertake small projects like the building of risers, projection screens and backdrops - in fact any gadget or gizmo that might be required. Another element is provision of special pieces of control equipment which might involve a combination of electronics and metalwork such as customised control units.

"Our staffing is continuing to expand, and there are some high skills coming in. One will be a highly qualified electronics engineer who will be able to get involved in preparation of custom software, and also the implementation of the computer system we are developing including a completely computerised job management package. In future we hope we will be able to respond much more quickly when clients hit us with extensive equipment requirements. We want to be able to bid them literally in a matter of minutes!"

The key men who handle the various avenues of Meteorites' operations are: Tony Panico, who looks after outside broadcasts and location contracts; John Cadbury, who handles many of the rock and touring accounts; Geoff Benson, who takes care of dry hire and rental into studios and television; and Tony Slee, who handles the trade and industrial market. Ronan Willson, quite naturally, has connections in each area, but gets involved principally with the major rock clients.

Technology on the road

"There has been some scepticism about scroller technology, and how reliable it is," suggested Ronan Willson. "What we have discovered, and it's really very straightforward, is that the equipment is quite adequately reliable provided you manage and maintain it in the right way. And this means spending money. You can't hope to buy a few scrollers, chuck them on the shelf, and when somebody wants them send them out and expect them to work.

"There are two things: preventative maintenance to ensure the units are working properly when they leave, and very crucially, the skill of the man on the job. Provided you do these two things, then we have total confidence in all the automation we put out.

"And the shows we've proved this on in the last year have been quite significant. We've had Supertramp out with a lot of technology, Iron Maiden, Kiss, Elkie Brooks, and a very recent one that's still running - Gary Moore.

"Gary Moore is probably the pinnacle of the shows with technology at the present time, and we have no less than 96 devices on tour, including 24 Parcans, which are performing extremely well. I think it's an extremely good-looking show, and worth talking about because of the scepticism that has existed."



More Parscan action from Gary Moore.

So far, so good. But what about maintenance on the road, particularly for long tours?

"There is a guy on the Gary Moore tour whose job it is to look after the automated devices," explained Ronan Willson, "and he has the appropriate back-up from base as necessary. Any micro-processor device can crash at some stage, but it's a question of what consequences that can have. All the equipment has the ability to be reset locally, so that if one head does misbehave, you can shut it down, reset it, and bring it back on line within a matter of 30 seconds or so. From the show's point of view, the fact that it's got out of step is not in any way detrimental.

"A lot of problems tend to be power problems, and we've learned that the way to overcome this is to provide clean power. We carry line conditioners with all the systems to give accuracy of voltage. That, together with the other bits of general management protocol, such as cabling the systems, all add to the reliability.

"But the fundamental starting point is maintenance and the right man to look after the equipment. And for this reason we generally don't like putting the equipment out as a sub-hire because the skill doesn't necessarily go along with it. Someone may rig something, it may then malfunction, and because there's nobody who knows how to



The 400 watt HTI Strand Lightscan is a hard-edged automated fixture with two internal 16-colour changers, five gobos, remote control of iris, dower and focus, variable speed, and high digital accuracy. Meteorites will soon hold a considerable stock of these powerful light sources - ideal for major concerts or industrials.



Leading lights: (standing) John Cadbury, Ronan Willson and Geoff Benson, with (seated) Tony Slee, Dizzy Gosnell and Tony Panico.

deal with it gets a bad name. The result is they blame the equipment. The right man on the spot can maintain it to stop it from glitching, and if it ever does glitch he knows exactly how to deal with it."

Innovations

Along with expertise on high technology instruments has come some interesting innovations on the scroller theme. One is a followspot changer utilising a 'sandwich' of Geljet units.

"The Geljet was originally intended as a drop-in scroller for Pars or profiles, but our application is to put three of them together, with each one carrying two colours and clear. By arranging them in this way you can select the exact colour you want without having to scroll through several you don't want, and this is very relevant for follow spot changing, with dozens of changes throughout the show.

"We've found them to be extremely reliable and have made them to fit a number of spots, through the HTI range, Supertrouper, and so on. It gives a tremendous effect if you have 6, 8 or even 12 spots that all change, exactly in time with one another, and so rapidly. The other advantage is that the control runs on the analogue output of the desk, so actually built in to scene presets you can have the spot changes. It's an innovation that people have fallen in love with, and luckily they seem to end up specifying it!

Comparative Costs

Obviously the cost of hardware goes up dramatically if you compare a 'Par 64 show' with an 'automated' show - but there are advantages, as Ronan Willson pointed out.

"In running terms the client can often find a cheaper peripheral cost because the trucking is less, and one can do with 200 lamps what you might previously have done with 400. And it obviously means there's less in the air.

"More important, show's start looking less 'metal' and more 'creativity'. There is a real education necessary on the part of designers, because working with a static design is one thing, whilst learning to take the step into devices that change colour involves more forethought. But instruments that both change colour and move is a third step - and it really can be quite difficult in making that third step."

Who leads? Instruments or Designers?

"I'm sure the changes are designer-led. I'm aware of good designers being critical of software available within some automated control systems because they feel they want to do something that the software inhibits them from doing. Inevitably one can overcome these problems, but I think the designers will set the pace.

"The bottom line is that any self-respecting designer wants to get the opportunity to work with automation. Maybe as yet he hasn't had the opportunity, but we would all want to broaden our knowledge, I think.

"I feel that this is where some of the alternative technologies we're investing in are relevant because not everyone can afford the top of the range products like Vari*Lite. You can do an awful lot with Parscans, and in my opinion they are a very under-rated instrument. Anyone who sees the Gary Moore show will be aware of that. The colour change is extremely fast, the movement fast and accurate, and from a calibration point of view one can repeat the same show in different locations and the accuracy stays the same.

"Control-wise, on the Taskmaster board



Part of Meteorlites' huge warehouse at Elstree Way. Adequate headroom means full stage sets can be built.

there are a lot of copying facilities, grouping, and a number of things that make programming very easy. Having set up initial parameters of focusing and colour and groups, you can grab elements from other presets and build new scenes very quickly. Of all the products it's the Parscan that I feel most enthusiastic about, and also I think it's the most under-rated."

Europe and the Future

Meteorlites has been heavily involved both in America and Europe for a number of years, and Ronan Willson explained that there has been a massive swing towards Europe in international business of late.

"Our own base in America was established a little over three years ago, at what was probably the tail end of a boom in American business, which the industry had enjoyed for about 15 years or so. But now there's a real emphasis on Europe, and a real decline in America.

"Much of this originates out of Britain, although I may be biased. Certainly in the touring market the whole concept of 1992 everyone is opening up to. A number of hire companies have made decisions to form



Custom-prepared dimmers - part of the routine.

alliances with other local companies around Europe to form a network, or have actually opened their own regional offices.

"But the single point is that there is money in Europe. The demand is here for entertainment in a big way where it wasn't before. That's always been the strength in America, with big budgets on shows that could tour major arenas and stadiums for many months. But the business in America has been dying, possibly due to overcrowding. There are now tighter budgets, and promoters are being much more careful, whereas Europe is in a very optimistic situation.

"Traditionally, touring Europe has been a poor man's business, except for a handful of absolutely top grade acts who can sell stadiums. Now, more and more of what might be called small or middle market acts are able to play the larger venues, and the sheer number of acts going on the road, and the complexity and scale of productions has gone up, thus producing a much bigger demand."

As a result of these shifting trading patterns, Meteorlites made a decision about 18 months ago to place less emphasis on its American end. "Up to that point we had run a total parallel operation, and hire stock was maintained at precisely the same levels. So if we bought a desk we automatically got one on the other side.

"The choice was to narrow the scope of the operation in America, bring some of the plant back here to Britain, and to really concentrate all our efforts in one place, and get the best team we could here while still maintaining the ability to service our clients in America - which we still do."

Ronan Willson has taken some very bold and brave steps to lead Meteorlites into the future. So it's good to report that things are buoyant down on Elstree Way.

And by the way - that's '01' for London.



New investment: a complete range of television and film lighting equipment.

Upmarket with Options

Ruth Rossington visited the Arena Complex at Peterborough and the Middlesex and Herts Country Club at Harrow Weald - two new up-market venues that have put a deliberate emphasis on style coupled with a mix of facilities.



Director Ian Hopkinson at the Arena's TC control desk.

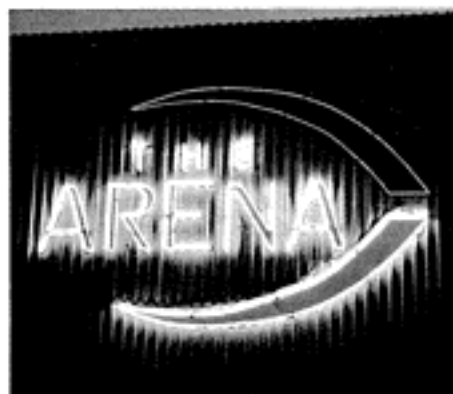
The **Arena Complex** is situated in one of the most unlikely areas of Peterborough. It, like many other leisure facilities that serve the area, can be found nestled in the midst of an enormous industrial estate. Known as the Eastern Industrial sector of the town, its provision for leisure was something of an afterthought - the planners, it seems, quite literally forgot and so a piece of land was

carved off and now serves as the home for such as Rollers (see L+SI January 1989), a bowling centre, a cinema and a restaurant.

It doesn't take great imagination therefore to picture the complex when Designer Lighting were first approached by Steve Hagger and Alan Treharne to design, supply and install a lighting system for the venue. When they viewed the site last November, it was little more than a concrete frame. Realising that a sound system had not, at that stage, been decided on, Designer Lighting suggested Sound Logic Systems and together the two companies embarked on a joint design programme under the banner of Total Control.

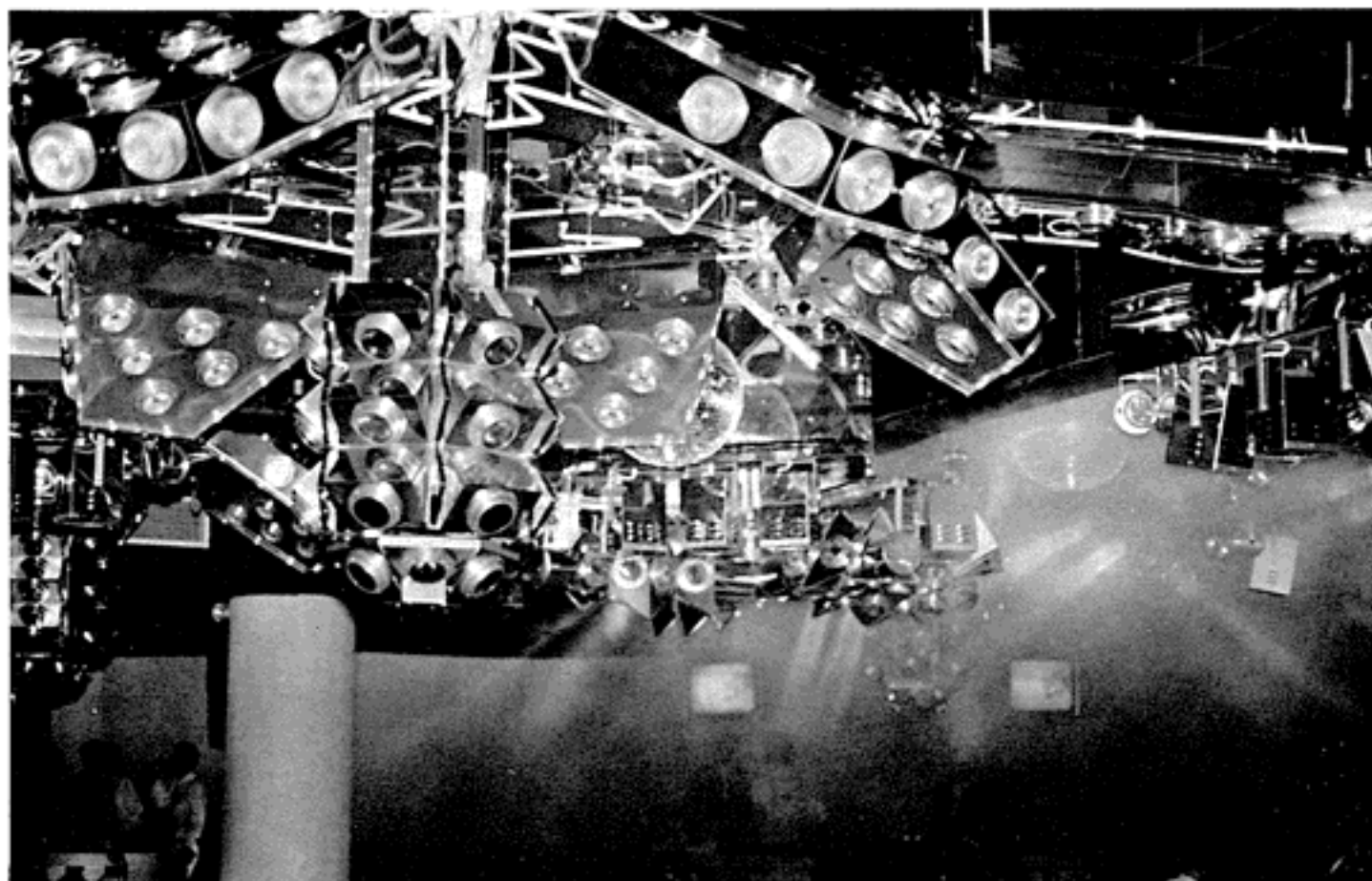
The brief was left wide open and Total Control were able to create a purpose-built interior audio-visual system. Faced with both the possibilities and the difficulties that such a brief offers, the company decided to build the focal point of the installation around the concept of flexibility, in line with the overall idea behind the venue. The open brief allowed the budget to run in phases and it was not until halfway through the project that the video system was added to the specifications. But first, back to basics.

The restrictions imposed by a relatively low ceiling inevitably meant that it was necessary to install a powerful and compact sound system. Total Control chose Electro-



Voice equipment and modified some of the EV components, to give it the option of upgrading to a live sound system. Formula Sound controls were combined with their own custom-built TC controls to create, in essence, a complete sound system that will run itself. A Soundtracs mixing console has also been installed and, like the loudspeakers, has been modified to suit the needs of the venue.

The computer components of the sound system, including a self-analysing graphic equaliser, absorb information from the environment and adjust the various levels of output accordingly. Technological sophistications of this nature reduce the



Part of the steel-finished lighting rig at the Arena, Peterborough, featuring Centaur units, 80 Par 36 and 24 Par 56 spots, and four Razor light panels. Lighting control is courtesy Jands 24 and 36 way boards (stage and auditorium), Microlite controllers (discotheque), and Pulsar dimmer packs. Stage lighting features Par 64's and 650W profiles, and auditorium lighting is based on CCT equipment.

human element in the equation and accommodate the constantly changing needs of the venue. However, the revelations don't end with the sound system. More discoveries follow in the form of the video system that to my mind, though possibly the least contributory element in the audio-visual system, has become the central feature of the Arena Complex.

The system, designed to interface with the sound system, is founded on the concept of a T.V studio. This is no overstatement; the potential uses of it are legion. As Ian Hopkinson took the trouble to explain, the permutations are endless and to name it is to have it. To give you some idea of its capabilities, it can mix up to six videos in one effect, play the tapes at a variety of speeds, recall earlier images and perhaps most frighteningly of all, remote cameras mounted around the building can focus on any person in the nightclub (bar the toilets, of course), take a picture, store it in its memory and utilise the image later. Those who go to nightclubs to escape public scrutiny may not entirely appreciate the technical developments currently taking place in the disco market.

The combination of these things is not overwhelming as one might expect, in many ways the audio-visual components of the club provide the backdrop to the style and character of the Arena Complex. The interior design is stylish and sophisticated, the pale blue and cream decor blends with the Roman theme to create a classical feel and like so many of its contemporaries, the club has aimed upmarket, relying on the decor and the facilities to attract the client base it's aiming for.

There is much more to the venue than a nightclub and discotheque; on the fourth of this month, an auditorium and restaurant will open extending further the boundaries of operation. Three businesses under one roof is no mean achievement and requires the right balance to be maintained. The conference facilities cater to a variety of requirements and are equipped with the latest developments in audio-visual technology. A 15ft screen at the heart of the complex can relay to over 350 delegates any message chosen and wedding guests can watch a video of themselves from earlier in the day.

An integral part of the complex is a cocktail bar which operates in its own right, but which directly overlooks the dance floor and bar. Soundproof glass ensures that the dulcet tones of the resident pianist are not interfered with by Kylie Minogue. The opening night for the Arena was more than just the celebration of a new club; it was the acknowledgement that a new style of venue is emerging.

Twenty four hours later and 100 miles down



Middlesex and Herts Country Club: a close-up of part of the lighting rig, showing neon 'veins' in the arms.

the road, another celebration of a different nature was underway. It's hard to believe as one approaches the canopied entrance to the **Middlesex and Herts Country Club** that it was once the Green Shield Stamps Social Club. That it now reveals no trace of its former mantle is a testimony to the achievements over the last year of the Hamilton Leisure Group.

Partners, Gary Van Praagh and Jeffrey Golding have invested £200,000-plus in a change of direction for the club, and the tenth anniversary celebrations mark a significant step forward for both the venue and its owners.

It was not the best of nights on which to view the venue, festooned as it was with balloons and streamers, but it was clear that the various interiors had been designed to create an ambient and relaxed atmosphere. Again the emphasis on style was uppermost.

Avitec (Electronics) UK were called in to upgrade the club only a month prior to the tenth anniversary celebrations. In effect, the

upgrade turned out to be a complete strip down and programme of rebuilding. Much of what could be salvaged from the old system which had literally sprawled as a result of indiscriminate additions, was retained and integrated with new equipment.

The lighting installation was carried out for Avitec by Phil Soltys of PST Electronics. The first problem to be surmounted was the lack of real time in which to effect the redesign. Working throughout the week, the only straight run was from Sunday through to Wednesday, the rest of the week, the club was open for business as usual. Understandably this engendered several nightmares, not least of which was the dismantling of the existing towers and the cleaning up operation, a necessity the four nights the club was open. The balcony lighting was tackled first, and once completed the pressure was eased slightly.

The dance floor was then relocated to facilitate the hexagonal moving rig which supports a mixture of re-used pinspots and



The stylish interior of the Garden Room, fully equipped with RAMSA speakers.



An inviting aspect: the entrance to the Middlesex and Herts Country Club.



Middlesex and Herts Country Club: the spider-like hexagonal rig.

36 new Nisel Nistar high-powered pinspots, Kremesa Harvesters, Music Flashes, Arcline and various beam effects. The design incorporates six various motorised effects including two Clay Paky Astron 3s, helicopters and the new Kremesa 'dentist' lights. The impact created by this mass of horizontal and gyrating effects is quite stunning. Visually the lighting in operation leaves a dynamic imprint on the mind - the neon flashes of pink and blue and the swirling greens, yellows and whites only serve to colour it in.

The lighting control system, Zero 88's Mercury, was modified by them to become a three channel controller to suit the hexagonal configuration. Rather than rely on commercially available systems, PST created a number of significant technical developments, one being their own custom analogue patch panel, allowing any of the effects to be moved to any of the channels.

The sound system at Middlesex and Herts was formerly a mix of Cerwin Vega B36 folded horn cabinets and ASS exponential horn-loaded bass cabinets. At least 10 years old, the Cerwin Vega drivers are the original ones and have never even been reconed. To these were added a JBL 24/25 for use with the ASS uni-cube horns. The aim was to get the crossover point low enough so that the placing of the bass cabinets on one side of the room didn't interfere with the directional input of the bass.

Like the Arena, the Country Club has developed its satellite facilities to target an extended leisure market. The Garden Bar and Fountain Suite are self-contained in their own right as is Hans Garden, a Chinese restaurant, and yet they are all an integral feature of the Middlesex and Herts. We've heard such a lot in the last few months about

the flexible entertainment concept, and the Arena Complex and the Middlesex and Herts Country Club are no exceptions. They certainly expose the limitations of many single-purpose venues.

Equipment List

6 x custom lengths Trilite truss
 36 x Nisel Nistar high power pinspots
 42 x 620mm lengths Blue Neon
 42 x 620mm lengths Pink Neon
 1 x Clay Paky Astrosider 'Tarantula'
 5 x Kremesa CR20P Harvesters
 4 x Optikinetics Super Slave strobes

23 x LED Microlight 1000
 2 x LED Lightflowers
 2 x LED Surfiers
 2 x FAL Ventaglio
 1 x Anytronics Megastar strobe
 2 x Kremesa CR600/2G 'Dentist Lights'
 2 x Clay Paky Astron 3
 6 x Kremesa CR90 Super 90° scanners
 2 x Zero 88 Custom Mercury
 3 x Zero 88 Touchlight 12
 1 x Mode SCT strobe controller
 1 x Mode SC4 strobe controller
 1 x Mode Arcline controller
 9 x Light Processor MPI power packs
 1 x Light Processor MPX matrix pack



Light show in progress at the Middlesex and Herts Country Club.



THE SHADOWS



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we sell expertise**



GE Lamps United Kingdom

ABTT Trade Show 89 London's Riverside Regular

Ruth Rossington called round the exhibitors for a taster of what's to come on May 18-20.

In yet another busy period of international trade shows (Showlight, Amsterdam and Expo Musica in Madrid are in the same week), the popular ABTT Trade Show makes its annual appearance at the Riverside Studios in Hammersmith from Thursday 18 to Saturday 20 May.

New this year will be an experimental scheme to cater for those serving the theatre industry who would wish to have a presence at the Show, but are unable to devote much time or money to the event. The ABTT office told L+SI that this will take the form of a **Small Firms Stand** which will be devoted to distributing information for any number of theatre suppliers, manufacturers, contractors and organisations at a minimal cost. Various levels of participation are available, and even as you read this there may well be time to take part. The man to contact is Ken Smalley on 01-286 9520.

L+SI's stand will be manned by Ruth Rossington and David Street, organiser of the PLASA Light & Sound Show. Editor John Offord will join them once he's collected his thoughts together after Showlight in Amsterdam.

A free admission card is included with this issue.

A & B THEATRE SERVICES

(0302) 64808

First ABTT showing of the Mini Dry Ice Box (see L+SI November 1988, p12).

AC LIGHTING LTD

(0494) 446000

Biggest stand ever will feature an international range of products, including such famous names as Pani (Austria), Spotlight (Italy) and Jands (Australia), plus Lycian, Altman, Strong, and GAM (USA).

ANCIENT LIGHTS

(0223) 410249

This year will see the launch of the successor to the infamous beermat!

ARK LIGHT

(0533) 478336

Examples of restored lanterns and spare parts.

ARRI (GB) LTD

01-848 8881

Full range of Arri lighting control equipment, including the new MIDI interface for the Imagine lighting control system.

ASTRALLOY INTERNATIONAL LTD

(0532) 465331

Minilight and Quatralight plus Astralloy's standard Astralite trussing system.

AVOLITES PRODUCTION CO LTD

01-965 8522

UK launch of the QM500TD control plus the Q Patch, Geljet 2 and the rest of the range.

BOOK BAZAAR

01-352 6810

The chance to make up the gaps in your theatre book collection.

CANFORD AUDIO LTD

091-417 0057

Complete range of TecPro communication systems, new Maxon 49MHz transceivers, plus many cabling accessories.

CCT THEATRE LIGHTING

01-640 3366

Entire range of luminaires and products from both CCT and Furse Theatre Products.

CELCO LTD

01-698 1027

On display will be the Gold console along with the Celco 60 and 30 boards featuring the Q-card digital storage interface, a selection of dimming systems and the Celco spring fashion collection.

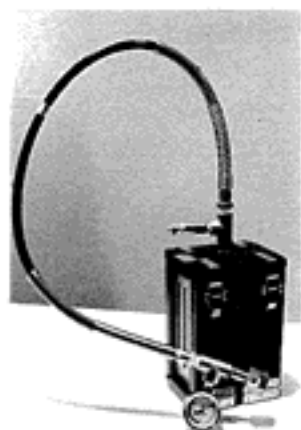
CERBRUM LIGHTING LTD

01-390 0051/4841

Two stands, one dedicated to Presentation Consultants showing LSD products including trussing, lanterns, motor controls and Colomag, one to the Powerdrive range of towers and the Amp-

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01-397 7830

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DC LIGHTING LTD

(0734) 418233

Stage, theatre and studio lighting plus a selection of equipment for photographic, micrographic and video applications.

DEW CONTROLS

01-504 5832

On display will be the full range of DEW dimmers and desks.

DHA LIGHTING LTD

01-582 3600

New to ABTT will be the automated Iris and developments on the motorised light curtain. Alongside these a range of moving effects, examples of the gobo range and samples of screen printing and fabric design.

DONMAR LTD

01-386 1801

Usual range of theatre equipment supplies from the Covent Garden specialists.

ELLIOT BROS LTD

(0865) 249259

On stand will be the Dillex, an intercom with single button selection, fully duplex two-way communications up to 11 channels, plus Harrison Information Technology power amplifiers and graphics and Tannoy loudspeakers.

EMINENCE AUDIO LTD

(0749) 840102


First showing of the new power lift Lighting Jack, complementing the standard range of lighting equipment stands, accessories and 19" rack units.

EUROLIGHT LTD

01-751 6400

Launch of the new Applause and Ovation lighting systems along with a range of dimming equip-

You are invited to the



TRADE SHOW 89

Exhibition of Backstage Equipment and Supplies

Thursday 18 May	10.00am — 6.00pm
Friday 19 May	10.00am — 7.00pm
Saturday 20 May	10.00am — 3.00pm

Riverside Studios, Crisp Road, W6

ment. Also on show, Eurolight intercom systems and updated versions of the Micron and Smart stage management systems.

PETER EVANS STUDIOS LTD

(0582) 25730

Full range of props including armour, columns, urns, book backs, ballusters, friezes and brick and stone walls.

FARRAHS

01-549 1787

Along with various other products will be the metro-audio communications range, Yamaha and Soundcraft mixing consoles and Apogee loudspeakers.

DAVID FITCH SERVICES

(0322) 339013

New and refurbished lighting equipment.

FLINT HIRE & SUPPLY LTD

01-403 3990

Ironmongery and hardware, in fact, just about anything for the manufacture of scenery.

FORMIS

(07356) 79639

A variety of effects will be on show featuring 3-D scenic panels, floor pattern painting machines, confetti, a tropical rainshower, artificial snow and snow machines.

GERRIETS

01-232 2262

The stand will be dedicated to illustrating the company's scenic and stage products as well as providing a social area in which to meet with customers and reps.

HALL STAGE PRODUCTS LTD

01-953 9371

Range of curtain tracks, scenery fittings and rigging equipment and a fully operational display of single and counter weight sets of cyclorama track sliding points.

HARLEQUIN THEATRE FLOORING LTD

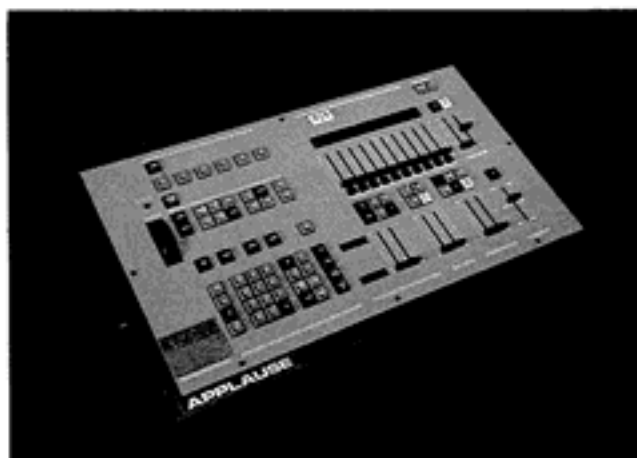
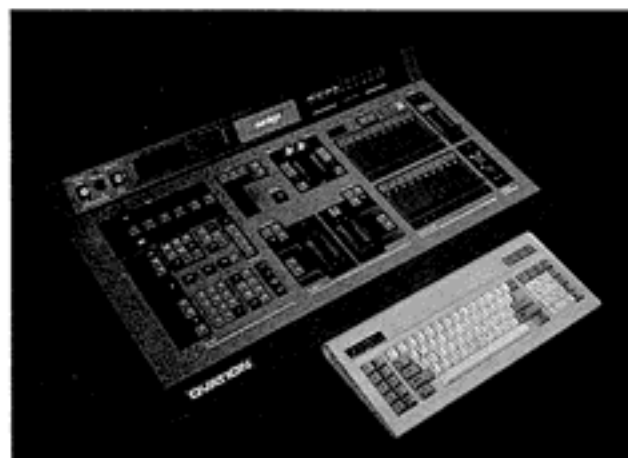
(0322) 865288

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(0753) 888447

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OVATION and **APPLAUSE** offer a new generation of lighting control from EUROLIGHT.

The systems include as standard a colour visual display, 3½ inch MS-DOS format disc drive, full effects package, 6 manual or automatic playbacks, dimmer profile, DMX multiplexed output, menu functions including macro keys, proportional softpatching and 10 multi-function controllers. Ovation also includes fade profiling, alpha numeric keyboard and 20 multi-function controllers.

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or contact Eurolight for full colour literature.

Eurolight Ltd Unit 1 Maple Industrial Estate, Maple Way, Feltham TW13 7AJ
Telephone 01-751 6400 Telefax 01-751 3334 Telex 888941 LCCI G

Along with a new product from Syrix will be the Sennheiser range of radio microphones and infra-red equipment for theatres, plus the Denon range of cassette decks, CDs and amplifiers.

KEY LIGHT (UK) LTD

01-689 6822

Although not actually on a stand, the company will oversee the supply of all power and mains distribution for the whole show.

LEE COLORTAN LTD

(0204) 73373

A demonstration of the 'Windsor' range of theatre luminaires will be the central attraction on a stand showing the 'Powermaster' range of dimming equipment, the 'Master Series' control desks and the spectrum of polyester and polycarbonate filters.

LE MARK TVS

(0480) 494540

Recent developments will be on display including the new tour label, a range of computer-cut graphics and a selection of reflective material.

LIGHTING & SOUND INTERNATIONAL

(0323) 642639

Us! Plus full information on the PLASA Light & Sound Show at Olympia 2 in September.

LIGHTING DIMENSIONS

(212) 677 5997

Promotional material covering the magazine and its November show in Nashville, Tennessee.

LIGHTING TECHNOLOGY GROUP LTD

01-992 7821

Exhibiting as Action Lighting, a member of the Lighting Technology group, the company will launch two new products - a heavy smoke dry ice machine and a new Thomas 1 kW fresnel.

LIGHT WORKS LTD

01-249 3627

First ABTT airing of a special effect projection system along with a rig of PALS from Cyberdescence.

M & M LIGHTING

01-722 4147

M & M's first appearance at ABTT will be marked by the showing of the Rainbow colour scroller, a new range of scrollers and ozone-friendly aerosols.

MAC SOUND HIRE

061-969 8311

Showing part of MAC's specialist range of sound equipment.

MARQUEE AUDIO

(0932) 566777

At the show will be H&H amps, the JBL control series, the Soundcraft Series 500 desk and cassettes, CDs and Blackfire mics.

NORTHERN LIGHT

041-440 1771

The system 2000 light control system, a stage managers desk and the promise of something more.

P L PARSONS & CO LTD

01-833 2031

The company will be demonstrating the demountable steel deck stage system available for sale or hire.

PHOSPHENE LTD

(0449) 678200

Along with a range of lighting and sound equipment will be scenery, merchandising and print materials.

PLAYLIGHT P&G LTD

061-793 5848

Arri control systems, Sennheiser radio mics, portable dimmer racks, patch panel units and splitter boxes from Playlight will be displayed alongside P&G's filled cloth, gauzes and a selection of materials.

PRIMARC (MARKETING) LTD

(0734) 596777

A certain crowd puller will be the 'blonds' and 'redheads' on this stand together with a selection of film and studio replacement lamps and the Venture HMI lighting.

RAT (MANUFACTURING) LTD

01-251 2437

RAT range of lightweight conductor and opera music stands.

ROSCOLAB LTD

01-659 2300

New products for ABTT include the chiller module for fog machines and a range of designer textiles, alongside the reintroduction of glitter.

SCORPIO CONTROLS LTD

01-569 2190

A complete range of studio lighting controls.

THE SOUND DEPARTMENT

01-7492124

Several famous names will feature strongly including MCS Auditoron, the MCA Combo computerised routing matrix and control system, Community loudspeakers and Industrial Research Products signal processing equipment.

SPECIALIST LAMP DISTRIBUTORS

061-873 7822

A display of replacement lamp bulbs for theatre,

T.V, photographic and video uses will share the stand with the full range of Chris James colour filters.

STAGE MANAGEMENT ASSOCIATION

01-587 1514

STRAND LIGHTING

01-560 3171

Strand's display will feature the latest, advanced Galaxy 3 control system together with the PALS automated lighting system.

TEATRO

(376) 780702

This year the stand is an elegant departure from the usual array of product, say Teatro. The emphasis will be on new product features and a hospitable environment.

TRAFALGAR LIGHTING LTD

01-360 0936

Everything on display is new - from the range of OHM speakers, through to the equipment from Lytemodel/Green Ginger to the latest catalogue.

TRIPLE E LTD

01-237 6354

Constructed of the new Unitruss system, the stand will accommodate the award-winning Linear motor system, two new curtain track systems and a full range of hardware including pin hinges and the Uni-Jack system.

VARIA TEXTILE LTD

01-549 8590

Varia will be showing their complete assortment of theatre fabrics - muslins, gauzes and calicoes - all non-flammable.

W B LIGHTING LTD

(0604) 499331

Part of the stand will be given over to demonstrating the new Jupiter from Coemar and the Enigma controller, whilst the remainder will show hire equipment plus a range of special effects.

WHITE LIGHT (ELECTRICS) LTD

01-731 3291

Together with manufactured optical effects for the Cadenza and 252 projectors, White Light will be showing the Model Box computer-aided design system.

ZERO 88 LIGHTING LTD

(0727) 33271

According to various sources, the Riverside will be witness to something quite unique this year, the nature of which remains ambiguous as the veil of secrecy draws ever tighter around Zero 88's plans. (In other words they've probably got some new bits, Ed.)

The LSX - For Sale or Hire

The LSX Low Smoke Converter converts the smoke output of either the Le Maitre Powermist or Smoke Processor machines into a low-laying cloud.

The effect created is very similar to that of using dry ice, but removes the hassle of boiling water and cardice.

Cloud density, depth, and the area covered are all controllable by using the variable settings on the LSX in conjunction with the variable flow feature of the related smoke machine.

The LSX should be floor-standing, but with the converter and accompanying machine raised, a waterfall effect can be created.

Size: 84cm(W) x 69cm(D) x 69cm(H) Weight: 80kg
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THX in the Cinema

Ben Duncan uncovers the efforts of Lucasfilm to set new standards for sound reproduction in cinemas.

Over the past five years, THX equipped cinemas have spread across the US and into the UK and Europe. The letters THX signify the seal of approval for cinemas meeting Lucasfilm's criteria. The THX marque makes strict demands on the quality of both the picture and the sound.

History behind the silver screen

Before 1980, the majority of cinemas were stuck with horn-loaded loudspeaker technology developed in the 1930's and 40's, notably by Shearer and James B. Lansing (the Altec-Lansing A-4 Voice of the Theatre speaker). In their time, both designs were years ahead of developments in other areas of audio, but as cinemas struggled to survive and retain credibility in the 70's, the strides made by domestic Hi-Fi, video and TV couldn't be ignored. Dolby Laboratories took the first step introducing their noise reduction system and incorporating equalisation to overcome the limitations of the infamous Academy Curve. The curve was a lowest common denominator frequency response adopted by the cinema industry in the 1940's, which largely restricted cinema sound to dialogue frequencies, to avoid upsetting the poor acoustics existing in most cinemas, many of which were converted theatres.

Also in the early 80's, JBL introduced new loudspeaker technology to the cinema, using direct-radiator and vented bass cabinets in conjunction with CD (constant directivity) hf

horns, to provide deeper bass and a more even response throughout the audience, at both ends of the audio spectrum. Then at the production end, Lucasfilm Ltd (named after its principal George Lucas, the film producer) realised there were serious compromises lurking in real cinemas, when they discovered that their high-fidelity, 70mm films couldn't be exhibited with the sonic impact that they were accustomed to hearing in their dubbing theatres.

The development of THX

THX began simply in 1981 when Lucasfilm's chief audio engineer, Tomlinson Holman, set out to re-equip the company's new re-recording stage and address the problems of reproduction in a unified way. In the same year, John Eargle of JBL and Mark Engebretson presented a paper at the AES, with proposals to bring cinema sound systems up to date.

They argued that a flat power response was needed for consistent coverage throughout the auditorium. As well as an improved speaker system, a special crossover was needed to achieve this. Holman enlisted the help of Siegfried Linkwitz (a microwave development engineer at Hewlett Packard who'd branched out into innovative loudspeaker system design), Stanley Lipshitz and John Vanderkooy (both professors at the University of Ontario) and Peter Schuck, a graduate student. The academics designed a passive crossover to achieve a response of

-24dB/octave that produced constant power (rather than voltage) over the crossover point. Today, the technique they used is widely known as the Linkwitz-Riley alignment.

The benefits of bi-amplification were well established by 1980, so Tom Holman and his assistant Gordon Jacobs naturally translated the passive network into an active crossover. Time delay compensation was included, so the sound emerging from the LF and HF speakers was in sync. The outcome was THX's proprietary dividing network.

'Baffles' or 'ears' have long been attached to the low frequency portion of cinema speakers, to enhance their loading at low frequencies. Classic cinema speakers combined horn-loading at high bass frequencies with vents, these being tuned to boost efficiency around 40Hz. The combination made sense in the 1940's, because power amplifiers and voice-coil power handling were both broadly limited to 30 to 50 watts, so the high efficiency gained by horn-loading was essential to produce suitable SPLs over the main dialogue frequencies. However, vented enclosures are 6 to 10dB less efficient than their horn-loaded counterparts, so the bass response inevitably suffered from a sudden shelf or 'step down' in their response, at intermediate bass frequencies, between say 100Hz and 150Hz. At the same time, the classic cinema bass horn's dispersion begins to widen unacceptably below 200Hz.

40 years later, when Holman began his



A view of THX 'behind-the-screen' speakers.



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work, loudspeaker power handling and amplifier power weren't a problem any longer. High levels of low frequency sound were increasingly part of modern cinema productions (especially Lucasfilm's) for ambience and to produce dramatic effects. Holman was also aware that the most elegant way to produce a smooth response down to 40Hz and below with a single source, was with a ported ('Thiele') enclosure. By flush-mounting the speakers in a wall behind the screen, Holman was able to extend the response of vented enclosures down to 40Hz **without equalisation**. Of course, the size of the wall and the materials used in its construction will influence the response, so they're carefully defined in the THX system's specification.

THX forces new principles

Everyone involved in designing, installing and using all manner of public sound systems knows the major role played by architects and builders in detracting from our best efforts. Inadequate budgeting and the specifying of unsuitable equipment come equal second. For a cinema to advertise itself as 'THX equipped', THX have a list of prerequisites. The cinema's acoustics have to be measured and improved if they don't meet THX's specifications. Next, the sound equipment installed has to be THX approved. The list of THX approved equipment is continually expanding: it includes Altec, EV and JBL behind-the screen loudspeaker components and selected amplifiers by BGW, Crown, Crest, JBL, Peavey, TOA and UREI to list but a few.

The cinema only qualifies for THX's licence after the venue has been completed and tested: the electrical and acoustic perfor-

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mance have to be certified **in situ**. Thereafter, the standard of presentation might slip. Mindful of human nature, THX make six monthly system tests a condition of the licence. Having played by the rules, licensed cinemas are rewarded with THX's marketing aids to help establish in the audiences' mind that the cinema is serious about high quality film presentation.

At first sight, THX's approach appears heavy handed, akin to government legislation along the lines 'we alone know what's best'. But let's not forget that THX is the brainchild of the same artists whose films are being shown. The THX system is a firm but polite way of inducing cinemas to pull their socks up and not cut corners. The specification works only so long as the cinema owner is interested in sound quality. If so, THX is ultimately for the benefit of everyone involved in cinema, not least the public: When they visit a cinema advertised as THX, they can be sure of experiencing what the film makers originally intended.

References and background reading

1. Cinema Sound reproduction systems: Technology advances and system design considerations, 69th AES technical meeting, Los Angeles, May 81; republished in SMPTE journal, November 82.

THX Theater Sound Reproduction System, RE/P, Dec 83 (USA)

Motion Picture Loudspeaker Systems Instruction Manual JBL.

MK.V1 cinema systems (Altec & EV)

THX installation across the UK and Europe is provided by **Bell Theatre Services, 917 Park Royal Road, London NW10 7LQ tel 01-693 0354.**

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ON TOUR

Carlona Forcer

Charles E. Stone, Kool and the Gang, (and others)

This month, I had been hoping to bring you an interview with Charles E. Stone, one of the few top black lighting designers, who is currently on tour with Kool and the Gang. Unfortunately, two days prior to our planned meeting, there was a death in Charles' family and he had to return to America. Before he left he promised to leave me a brief resume of his career as well as an equipment list. The resume came: the list unfortunately didn't. But he did want to take the opportunity to thank all his crew for their good work.

Charles E. Stone was born and raised in Memphis, Tennessee where, after high school, he majored in music. Through his interest in drums, he acquired an excellent sense of rhythm and timing - a feature of his work and a talent that those who work with him are quick to acknowledge. His ability to work well with various rhythms enabled him to work with many of the bands that came out of Memphis including Isaac Hayes, Mr and Mrs Rufus and Carla Thomas. One of the most significant encounters of Charles' life was his involvement with the late Otis Redding, an

experience which convinced him of the need to continue the work he was doing, and encouraged him to aim for greater things.

By the seventies, Charles had picked up groups like The Gap Band and Cameo, the work with the latter proving to be another interesting and enjoyable experience. The one person who impressed and inspired Charles above all others was Marty Wolf, the lighting designer for the Doobey Brothers, and many of Charles' techniques and work methods are a direct result of the influence Marty Wolf had on him.

He has been designing for Kool and The Gang for the last four-and-a-half years, and on the current tour he also takes on the role of production manager. He worked very closely with Steve Dawkes of LSD - a man he describes as 'one of the greatest cats I've had the chance to meet over the years'. Charles feels his concept of the show to be totally unique with lots of moving pieces, a high content of pastel colours, a great many eyes and scrims and a system of 550 lamps. The focal point of Kool and The Gang's show is its carnival

atmosphere. This, coupled with the excitement generated by the dancing, calls for constant use of changing colours, flashing lights, strobes and smoke. Having touched only briefly on some of the work of Charles E. Stone, I hope to be able at some point in the future to discuss his lighting designs in more detail.

I recently received a phone call from Peter Clarke of Supermick in reply to my comments on the lack of females in the lighting business. Peter would like to stress that Supermick employ several ladies including Lynne Scotten who has worked on the electrics/dimmer racks for, amongst others, U2, Bryan Adams and Frank Zappa. She is currently on tour doing the dimmers for Fairground Attraction. Other lady employees include Rebecca Hughes, who is the resident lighting designer at the Town and Country Club and who will soon be touring with Tanita Tikaram, and Robyn Jelleff who does a variety of work particularly in fashion and who is currently at the BBC.

The main article this month is dedicated to Brian Monahan, the personal lighting designer of Frank Sinatra. The show was billed as 'The Ultimate Event' and featured Frank Sinatra, Liza Minelli and Sammy Davis Jr. Unfortunately John Offord had the Derby & Joan that night, so I went in his place.

Brian Monahan lighting designer

'The Ultimate Event' starring Frank Sinatra, Liza Minelli and Sammy Davis Junior at the Royal Albert Hall, London, 19 April.



'The Ultimate Event' - with Frank Sinatra. Lighting design Brian Monahan.

"I went to theatre college in New Jersey where I originally started out as a set designer. It was one of those colleges where you did a bit of everything from sets to costumes to lighting, even acting. By the time I graduated I had realised that I wanted to do lighting," Brian Monahan told me.

"My first job was working for Strand Century in the engineering department draughting and designing theatrical systems. I learned a lot about wiring and all the hardware of the business. I worked there for about 18 months until I was offered a job in a new casino in Atlantic City. Casinos had just become legalised there and Strand Century was involved in the lighting for three or four of them. Having done the drawings and then gone down to Atlantic City on field trips, I was offered a job as lead electrician/lighting director. I stayed there for three years and I pretty much moulded the job into what I wanted it to be - that of a sole designer position with an assistant to run the board. We had Strand Century Light Palette, a full array of lights, dimmers, in fact everything you could possibly want.

"We did Las Vegas-style revues for the first two years which I designed with outside producers coming in. Then the hotel decided to go to star act policy booking acts like The Pips, which I lit, and some smaller acts. Then acts like Diana Ross would come in and my role of designer would transfer to being the liaison between her designer and the building. From that I've got to know a lot of designers like Allen Branton who has become a great friend of mine.

"Frank Sinatra came through a couple of times and when his lighting designer was fired/dismissed/quit depending on what story you hear, I was asked to take over for a week as they were going to the Kennedy Centre in Washington D.C. I did that followed by another week somewhere else, then

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ILLUSTRATED RIGHT: 5 WAY DUCTING SYSTEM
Comes complete 5 x 100mm x 1.5 metre lengths and front duct adaptor.
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another and so on until now, seven years later, I'm still here.

"In between I moved to New York and started a freelance career. I tried to get into more legitimate theatre which was where I felt I really wanted to be, and hopefully, from which, I could still do the Frank Sinatra shows. Frank's tours are strange compared to rock 'n' roll tours which can last anything from three to six months. The longest we go out for is usually three weeks, then home for maybe two weeks, out again for a week and home for three - so you're constantly bouncing back and forth. I fill the time at home with smaller projects or larger ones if I can squeeze them in. In New York, I hooked up with lighting designer Ken Billington who lights a lot of opera and Broadway shows. I became one of his assistants and helped with projects at Radio City Music Hall and off Broadway shows as well as pre-Broadway try outs. I'm still working with Ken to this day.

"Last November I became lighting supervisor on the road for Ann Margaret who performs in a very big style with a glittery Las Vegas show. We have lasers, front and rear projection, lots of scenery, dancers, singers and 40 musicians. It's a real thrill working for her.

"Then this 'Ultimate Event' tour came up and I was asked to design the tour which was originally planned to go out for six months with Frank Sinatra, Dean Martin and Sammy Davis Jr. Dean Martin dropped out midway through it and the tour ended abruptly. It started again with Liza Minelli taking over from Dean and I was asked to design for the new tour which was basically the same, but you can do so much more for Liza. She has her own lighting designer, David Agress, and we worked together on the show so that my requirements for Frank would fit in with his features for Liza.

"An important feature of the tour is that we're not only playing in the round in Europe, but also in proscenium, along with several opera houses and one nightclub. So the system has to be good at re-configuring itself, especially as we're only allowed one truck for lighting. The original design is in the round which converts to a proscenium system and then parts of it are pulled away to do the Royal Albert Hall, the Paris Opera House and the nightclub, which we did in Stockholm last week. It took a lot of planning but seems to work well. In the proscenium shows we obviously have a cyc and a scrim, floor templates and a great deal of projection onto the cyc, which gives the show a wholly different feeling. The show required to be almost totally re-cued from the round into the proscenium show. I had already fallen in love with Celco boards and I really wanted one for this show because the Q-card made it so easy to flip back and forth from the proscenium programming to the Royal Albert Hall programming.

"One of my favourite rock 'n' roll designers is Allen Branton, because he's always finding new ways to use equipment. Roy Bennett's shows for Prince are fabulous, there is a lot of creativity going on. Like Allen, he uses his equipment to full advantage and with a different approach every time. Whenever someone from the lighting business sees a show, they always say that they would have done it differently. That doesn't mean that it's wrong, it's just that everyone has their own view of things. The thing that I try to bear in mind when I see a review of a show is that the critic only sees the end product and comments on the production without knowing much of the background involved and the work that went into it. Often, and this comes from personal experience, the designer doesn't have full control. You have

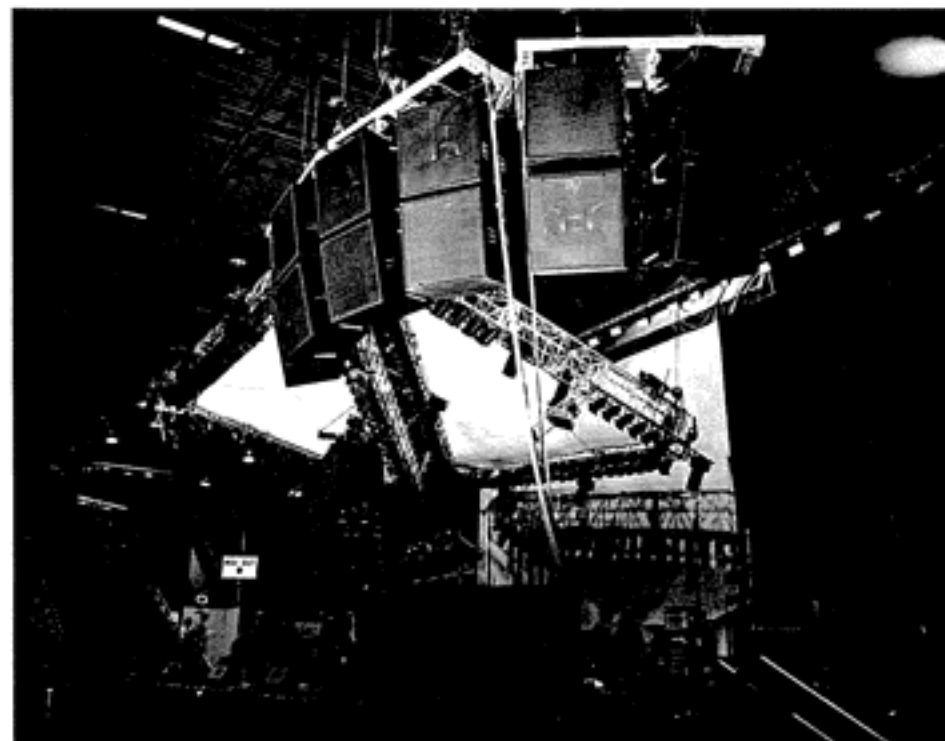
a director, in the theatre sense, or a star that has input, that may not agree with what you want to do. So, it's not always the designers fault if the show looks bad, others have, in some cases, to share the blame. Then again, if the show is good, it may not be to the designer's full credit. In the theatre Ken Billington is one of my favourite designers as he does some very interesting things.

"I like to work with other creative people as you can get a lot from other designers working on the same project because you can bounce ideas off each other. It's difficult doing someone like Frank Sinatra, where it's just lighting and no set or costume designer and you're the only creative person. In the theatre, you have other designers all looking at the same picture and seeing their little bit as well as what you are doing. I enjoy that much more and, just for that reason, I lean more towards theatrical shows.

"I'm currently moving my personal life out of New York, leaving an office there and I'm going to Ohio to set up a lighting consultancy. I feel there's a lot of opportunity there, and I know quite a few people involved in architectural lighting which is something very up and coming and has the potential which I can enjoy. It's like lighting a set on a stage that'll be there night after night as opposed to the one night concerts. Also, I'm happier when I'm working on many projects as I get bored very easily!"

Equipment from Samuelsons

240 ft Thomas trussing
300 Pars
48 Raylights
48 1K Lekos
8 9-Lites
8 Lycian 400 HTI Followspots (truss mounted)
Celco Gold with Q-card
Crew chief and liaison between Brian and Samuelsons - Ineas Mackintosh



Electro-Voice On Tour

SSE has reported increased demand for the Electro-Voice MT PA systems it purchased from Shuttlesound. One has been out on the road in Europe with TPau, a second was used on Roachford's recent tour while another was used at a recent Glasgow concert given by Simply Red. Another tour featuring the EV MT system is planned by Then Jerico and a recent major appearance by New Order at the Birmingham NEC also featured the MT rig.

Equipment on Tour

Fairground Attraction

(equipment: Supermick Lights)
1 x Avolites C30 console
1 x 72 way desk
1 x 40' truss (black Tealstage)
6 x tank traps
14 x 6 bars Thomas Par 64
2 x strings Par 64 ACL
3 x Sil 30 c/w colour wheels
2 x Par 36 helicopters
1 x smoke machine and fan
2 x 1 ton Verlinde motors
2 x Lycian long throw followspots (FOH)
1 x 40' Venetian backdrop
Crew: Tom Kenny (designer), Lynne Scotten (electrician).

Tom Jones

(equipment: Supermick Lights)
1 x Avolites QM500 180 way desk
2 x 72 way racks
19 x sections pre-rigged truss
4 x corner blocks
235 x Par 64
3 x 6 x 16 Lekos
3 x Thomas 8-lite units
16 x Active VLT's
2 x short throw Lycian HTI 400 followspots
3 x long throw HTI 400 followspots
2 x Smoke Processors c/w fans
8 x 1 ton Verlinde chain motors
Crew: Neil Montavon (designer), Ian Bracewell (rigger), Steve Allen, John McCullagh.

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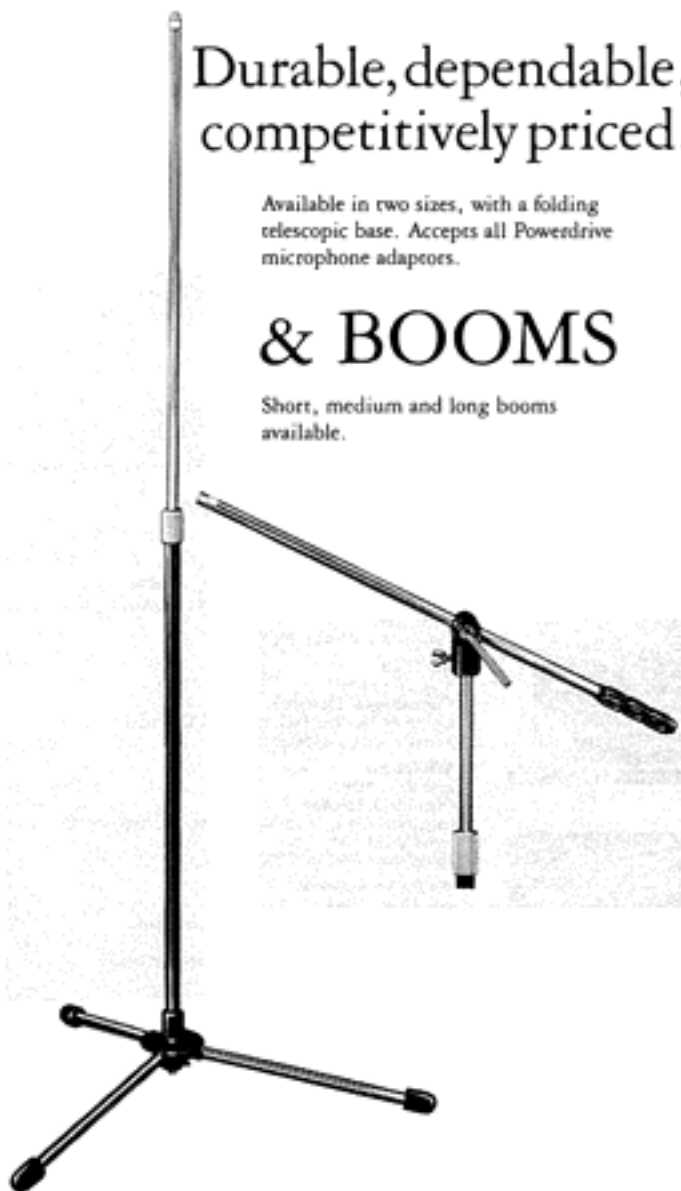
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PLASA News

Show Seminar Plans Take Shape

For the first time in its 12 year history, the Light & Sound Show (Olympia 2, 10-13 September) will be playing host to a series of seminars aimed at delegates from the broad spectrum of the lighting and sound industries.

The seminars, designed to give both end users and trade representatives the opportunity to track new developments and techniques, will be held daily throughout the exhibition. In total there will be six sessions covering different application areas. For example, the special needs of technicians, installers and venue operators will be covered in the Live and Touring Technology session, while the subject of Moving Lights will form the central theme of another.

Organiser Tim Chapman believes that the Light & Sound Show seminars are unique in the UK in that they seek to address a wide audience through a single venue. "In most respects the seminars will reflect both the variety of exhibitors and the widening areas of the visitor interest at the show," he said. "It is a long time now since the Light & Sound Show provided a simple forum for DJs and while one of our sessions will be aimed at

this group, we have tailored all of the others to be of interest to theatre technicians, presentation specialists, lighting designers, live and touring sound engineers, etc."

The final seminar programme will be available during June but a foretaste of some of the speakers broadly demonstrates the aims of the sessions. Speaking in the Moving Lights session is the man widely regarded as the 'father of moving lights', Peter Wynne Wilson, inventor of the original Pancan system. Also in this session, John Lethbridge, managing director of Cerebrum Lighting will add his knowledge as one of the world's leading distributors of a variety of different systems. He is also presenting a paper in the Projection Systems session.

Mike Snape, stage technical manager for Alton Towers, will be outlining his experiences in the highly specialist, but growing, sector of theme park management in the Installation and Design session. Alongside Mike Snape, Tony Gottelier, designer of London's Camden Palace, will discuss the latest trends and techniques in large venue installations.

Entrance to the Light & Sound Show seminars is by ticket only and these will go on sale during June. However, interested delegates should make a note in their diaries now as well as of the delegate fees, which are £85 for a ticket giving access to all six sessions, £40 for a whole day including two sessions and £25 per single seminar. A one-off seminar for DJs on the Sunday is £10. Seminar tickets include automatic entrance to the Light & Sound Show 89.

For more details watch our pages or contact Tim Chapman, 95 Ditchling Road, Brighton, East Sussex BN1 4SB. Tel (0273) 693610

For more information on the Light & Sound Show 89, contact show organiser David Street, 3D Services, 10 Barley Mow Passage, Chiswick, London W4 4PH. Tel 01-994 6477

Exhibition Diary 89

Expo Musica, Madrid

May 17-20, 1989.

Madrid, Spain.

Organised by IFEMA (Institution Ferial de Madrid), Avda de Portugal, s/n Casa de Campo, 28011 Madrid 1101. Telephone: 470 10 14.

Audio Visual 89

May 8-11, 1989

Wembley Conference Centre, London.

Organised by emap McLaren Exhibitions Ltd., 840 Brighton Road, Purley, Surrey CR2 2BH. Telephone: 01-660 8008. Contact: David Copeman.

Showlight 89

May 15-17, 1989.

Hilversum Studios, Amsterdam, Holland.

Organised by The National Illumination Committee GB in association with Netherlands Broadcasting Svs., NOB, PR Department, Postbus 10, 1200 JB Hilversum, Netherlands.

Contact: Maureen van Woudenberg. Telephone: 035-775115.

ABTT Trade Show

May 18-20, 1989

Riverside Studios, Hammersmith, London.

Enquiries: ABTT, 4 Great Pulteney Street, London W1K 3DF. Telephone: 01-434 3901.

NOTT 89

May 28 - June 2

Copenhagen, Denmark.

Union of Theatre Technicians in Denmark. Telephone: (1) 245808.

APRS Show

June 7-9, 1989.

Olympia 2, London.

Enquiries: APRS, 163a High Street, Rickmansworth, Herts WD3 1AY. Telephone: (0923) 772907.

Musika '89 Moscow

July 18-25, 1989.

Enquiries: Glahé International Group Ltd., Tel: (0787) 228086.

(Also Tony Andrew, PLASA general secretary, 0323 410335).

PLASA Light & Sound Show '89

September 10-13, 1989.

Olympia 2, London.

Exhibition Organiser: David Street, 3D Services, 10 Barley Mow Passage, London W4 4PH.

Telephone: 01-994 6477.

Association Enquiries: PLASA general secretary, Tony Andrew, 7 Highlight House, St Leonards Rd., Eastbourne, East Sussex BN21 3JH. Telephone: (0323) 410335.

ABTT NORTH

October 26-28, 1989.

Oldham College, Oldham.

Enquiries: Mr D.W. Cusworth, 4a Meriton Road, Handforth, Wilmslow, Cheshire SK9 3HB. Telephone: (0625) 523391.

Lighting Dimensions International 89

November 17-19, 1989.

Nashville, Tennessee.

Enquiries: Patricia Mackay or Jackie Tien, Lighting Dimensions, 135 Fifth Avenue, New York, NY 10010, USA. Telephone: (212) 677 5997.

PLASA and L+SI at SIEL, Paris (see pages 35-39)



Preparing the ground: Andrew Offord, David Neale and Ruth Rossington on stand.



Sunday in Paris: John Olford (L+S), Neil Rice and John Jeffcoat (Optikinetics), Mick McManus (Le Maitre), David Dickinson from Vancouver, and Dave Winfield (Jvelight). Two days later all present could be found at SIEL in Rimini.



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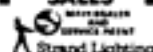
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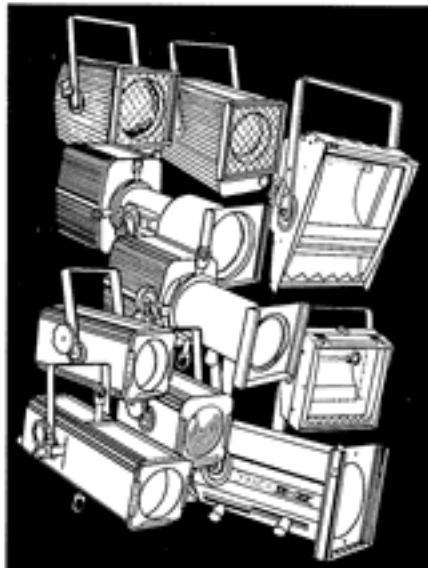
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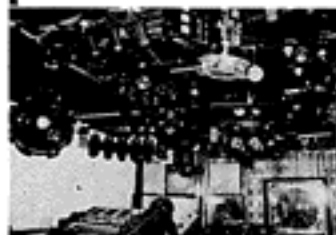
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VIEWPOINT

Gary Withers

'Let there be Light . . .'

Over the last 20 years, there has been an astonishing 'Renaissance' in lighting - the surge in interest growing as fast as new products could be designed and techniques could be transferred from the theatre and entertainment industry to the home and retail environments.

There is now a vast, multi-million pound market for domestic lighting alone, feeding a greater public awareness that lighting is a vital part of interior design. High street outlets and the spawning of numerous consumer magazines concerned with design are testaments to this interest. And the market is becoming increasingly sophisticated.

One of the first to recognise that there was more to lighting than standard lamps and ceiling pendants was, perhaps, British Home Stores, who pioneered High Street interest in the early 1970's. Around this time too, innovative Italian styling was beginning to move into the frame for both domestic and office interiors. From here it was a short step to the marketing of 'Lifestyles' in the 1980's - with a Tizio in every brochure, magazine or advert.

In parallel, increased competition on the high street has inevitably led to greater emphasis on retail design itself. Lighting is clearly an essential component of shop design, and in-store lighting has become an element of expertise in its own right.

Now, increasingly, the value of lighting is being perceived in the architectural context too. The latest trend seems to be in lighting building exteriors in a more creative way. Of course, floodlights have been used to highlight public buildings and cathedrals for many years, but they do tend to be rather flat and boring - serving only to illuminate rather than enhance particular architectural features.

Today companies are beginning to realise that lighting can add yet another dimension to their corporate expression. A good example is the scheme Andrew Bridge designed last year for the Lloyd's of London building to celebrate the corporation's tercentenary. A sculpted effect was created by overlaying three colours onto the building, highlighting specific architectural features by means of marine navigation beacons alongside purpose-designed fittings.

It's a terrible paradox of modern urban life that many wonderful buildings and landmarks just disappear from view at night. With the range of modern products now available, the potential for exciting lighting

schemes is enormous and it is quite disgraceful the way we in Britain waste these opportunities. We are still not using the medium of light to maximum effect.

Take Trafalgar Square, or any of the London parks - they could look fabulous with imaginative lighting, opening up a whole new series of 'sights' for tourists and residents alike. And how about projecting images onto the exterior walls of the National Theatre on the South Bank? It could even become a new way of advertising forthcoming productions.

People abroad seem to be leading the way at the moment. In Japan for instance, there is a 'living' building which changes colour throughout the day and night. But the attitudes in this country are slow to change. However, some 'enlightened' souls here are starting to regard light as a powerful communications medium - and one that doesn't have to be very costly.

I can bemoan the general attitude towards public lighting because we at Imagination have always placed great importance on it, not just in our productions and designs, but for our own enjoyment. It's now a Christmas tradition that our building in Covent Garden is swathed in decorations of neon light. And although we'll be in new premises by next Christmas, the tradition will continue.

We need to be more creative in our use of light. We need to inject a sense of theatre, a sense of drama back into the night time skylines of our towns and cities. Light is the perfect medium for celebration - whether it's the celebration of a beautiful piece of architecture or the celebration of a successful corporation.



Gary Withers has never done anything by halves. At 40 he is chairman and creative director of Imagination Limited, an extraordinary design and communications company he founded ten years ago which has, like him, a reputation for delivering innovative and highly creative work.

A born entrepreneur, he started with a lucrative blackberry business at the age of eight and four years later was stage managing weddings. At 19, after graduating from St. Martin's School of Art, he became an exhibition designer and at 20, he had set up a merchandising department within an advertising agency. He was running his own agency, Saffron Design, by the time he was 22. This became Imagination in 1978.

As well as handling a diverse range of 'live' communications projects for major business clients, Imagination has had a long involvement in the field of public entertainment. Last year a new division of the company - Imagination Entertainment - was set up, with Gary Withers as managing director, to concentrate on this sector. The first project was the Joy to the World Christmas extravaganza at the Royal Albert Hall. The rest is history.



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