

LIGHTING+*SOUND* International



Theatre Royal - the main performance venue aboard P&O's Oriana (shown right).

- Tony Gottelier: Technology Afloat on the Oriana
- Manchester Royal Exchange gets a new Cadac desk
- Prometheus revived in Guildford
- ABTT Show report from Robert Halliday
- New sound for the RNT's Olivier
- On Tour: Simple Minds and 'Prince' in the spotlight

PLASA

MAY 1995



THE POWER EXPRESSION

TECHNICAL SPECIFICATIONS

LAMP

- 1200 WATT GAS DISCHARGE LAMP (available with Philips MSR 1200 Watt or with Osram HMI 1200 Watt)
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- Standard objective aperture **10,5 degrees** with built-in system that enables access also to **12, 14 and 16 degrees** beam projections

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- Variable scanning speed
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- Colour wheel with 8 standard colours through selected dichroic filters plus 16 colour combinations thanks to **2 colour correction filters (3200°K and 6000°K)**
- **24 fixed positions**
- **24 two colour projections** available
- The colour wheel can rotate continuously at variable speed till rainbow effect
- Option for the linear control of the colour wheel for synchronized operations

GOBO SYSTEM

- **4 Rotating Gobos**
- **4 Indexable** rotating gobos plus open position
- Memorizable indexed position on **540 degrees**
- Easy interchangeable gobos
- Variable patterns rotation speed both in forward and reverse rotation
- **6 Standard Gobos**
- 3 fixed plus 3 **easy interchangeable** position
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IRIS

- **Totally noiseless** high quality iris for the wished projection diameter
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- Linear control from close to open plus variable speed "**pulse effect**" to reduce considerably programming of iris effects

VARIABLE FOCUS

- Remote focus control for **perfect sharp projection** at any distance
- Enable suggestive **cross-fade focusing** between two superimposed gobos
- Enable interesting progressive defocusing effect of the patterns when needed
- Reduce considerably the set-up operations

FROST

- The frost filter enables from a sharp beam projection to obtain a wash projection
- Ideal for coloured backgrounds
- Variable speed "**flash frost**" effect to reduce programming operations

PRISM

- Built-in prism for multiplier projections

STROBE/BLACK-OUT

- Variable speed strobe effect
- Instantaneous synchronizable black-out

DIMMER

- Linear mechanical dimmer Fully dimmable from 0% to 100%

CONTROL SYSTEM

- INFINITY accepts **standard DMX 512** signal both through **CANNON XLR 3 PIN** and **CANNON XLR 5 PIN** connectors
- **10 DMX** channels when a standard controller is used
- **12 DMX** channels when the **16 bit HIGH DEFINITION DMX** is enabled

REMOTE LAMP ON/OFF

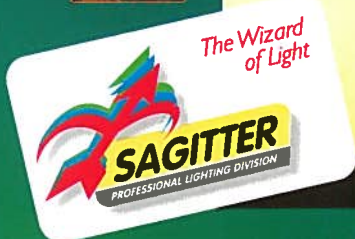
REMOTE RESET

REMOTE SELF/TEST

POWER FACTOR CORRECTED

ROAD VERSION AVAILABLE

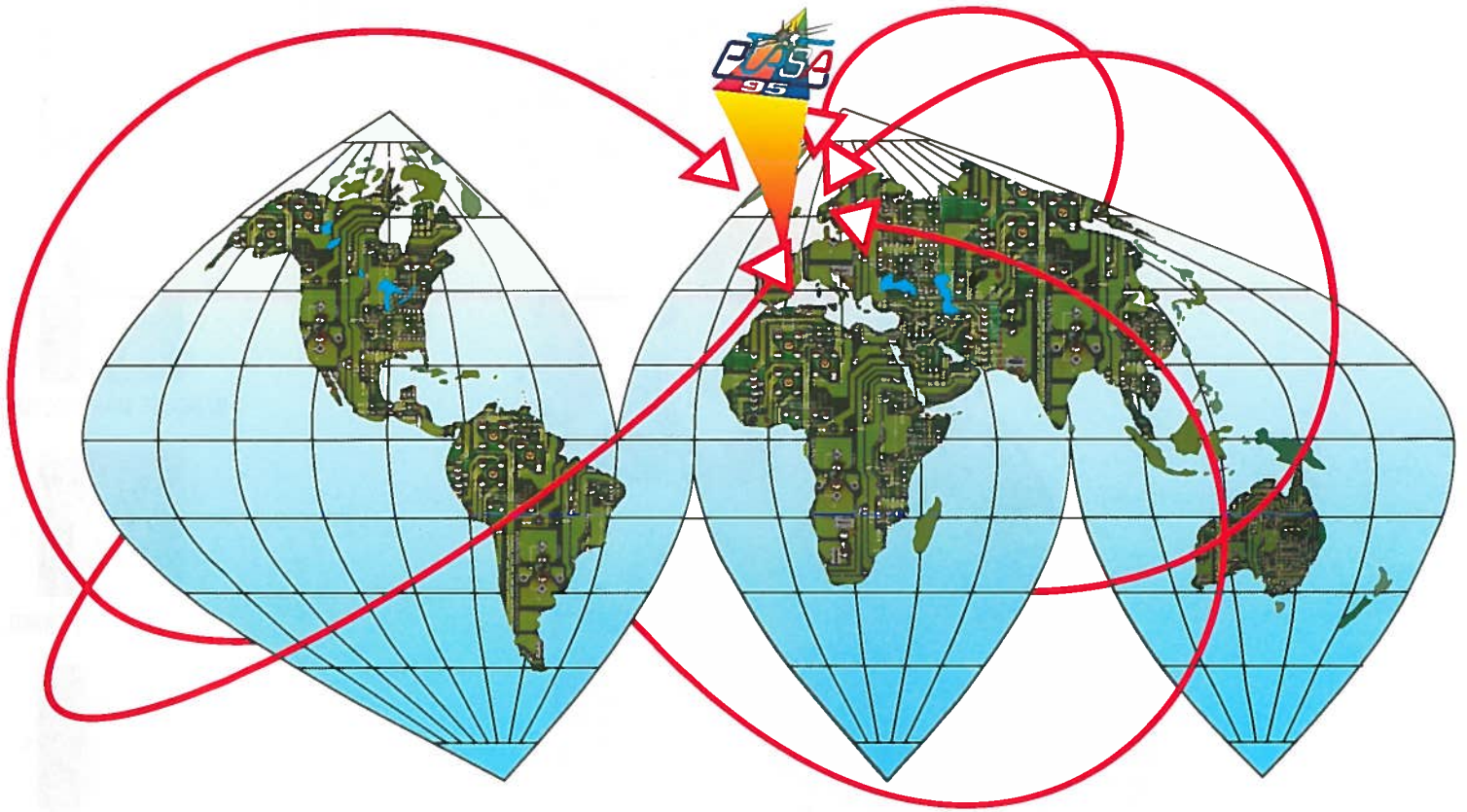
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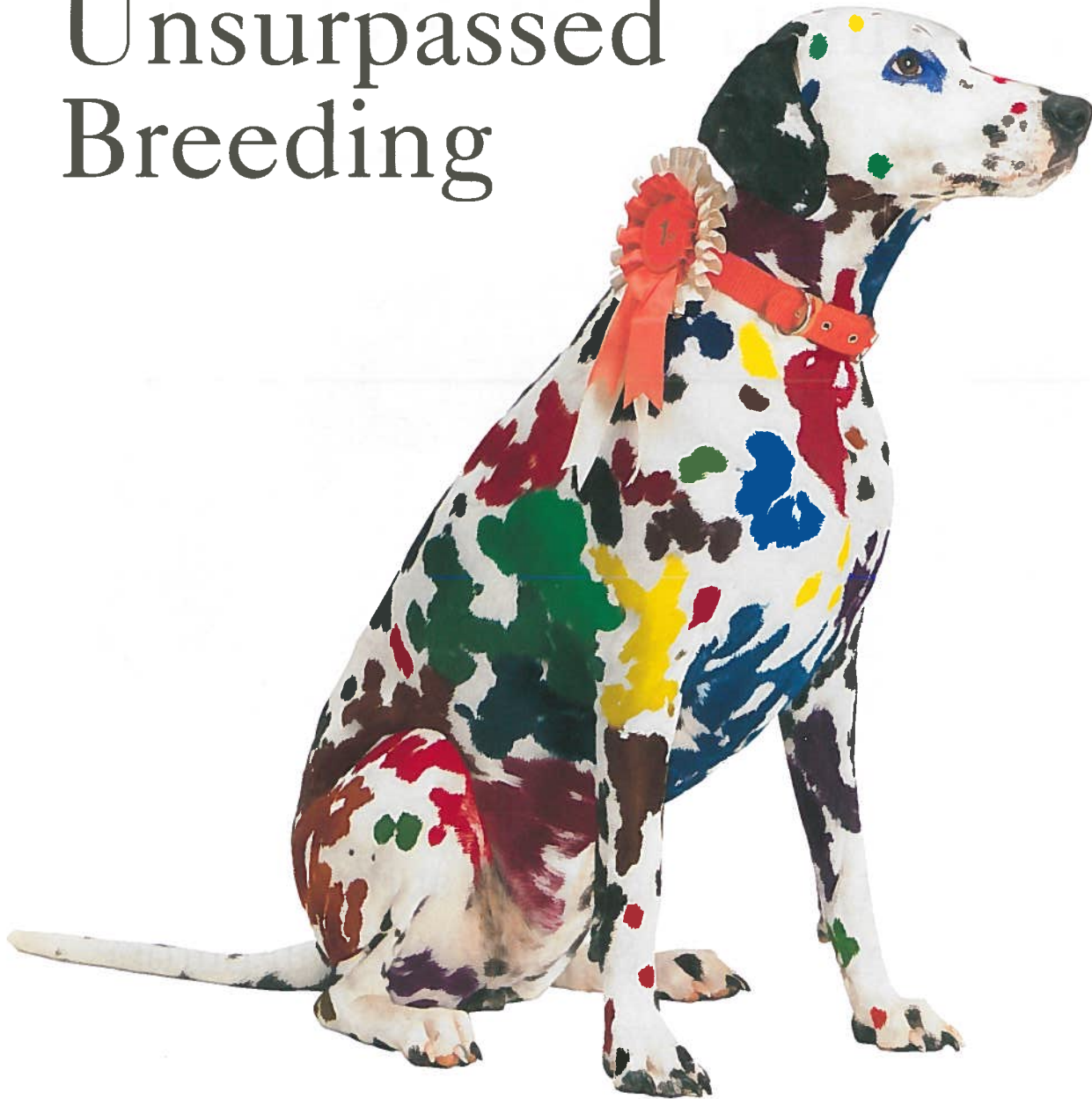


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MAY 1995

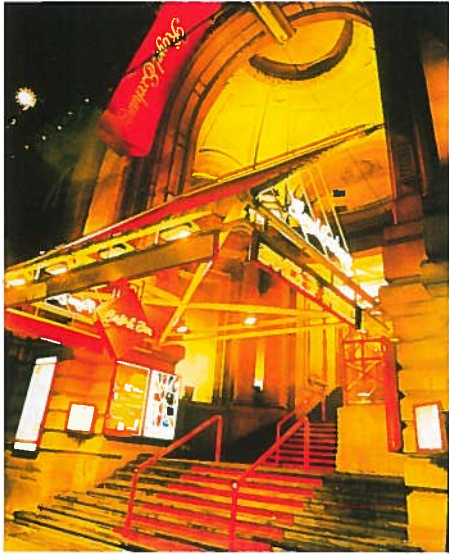
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ABC Membership has been approved pending first audit for the period July 1995 - December 1995

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Editor: John Offord

Assistant Editor: Ruth Rossington

Associate Editor: Tony Gottelier

Editorial: Lee Baldock

Advertisement Manager: Barry Howse

Production/subscriptions: Sheila Bartholomew

Advertising assistant: Jane Cockburn

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Editorial Advisors: Peter Brooks, Wyatt Enever, Mike Gerrish, Derek Gilbert, David Hopkins, Matthew Griffiths, John Lethbridge, Ian de la Vingne, Iain Price-Smith, Neil Rice, Jackie Staines, Mike Wood.

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German Utility Model Reg. No. G931288; 3 and G9314158.5.
All other worldwide patents granted or pending.

LSD Buy-Back

Three years after being sold to Christian Salvesen PLC, a management team headed by the original company founders, Nick Jackson, Terry Lee, Tim Murch, and John Lobel have acquired both Light & Sound Design Inc in the US and Light & Sound Design Ltd in the UK.

Light & Sound Design's desire to regain operational control, and Christian Salvesen's recent decision to focus on its core business of distribution and transportation, combined to make the transaction occur at the right time for both parties. Light & Sound Design enlisted the services of specialist companies Arthur Anderson and Murray Johnstone to complete the agreement.

The announcement states that LSD will go forward aggressively and retain its reputation as one of the world's leading suppliers of complete lighting services to the industry. LSD has long been one of the market leaders in fixed lighting, and with the successful introduction of its Icon system two years ago they have also been at the forefront of automated lighting and control. The intention of the revitalised companies is to continue the expansion of the Icon automated lighting system and continue to provide a high quality service to clients.

President Nick Jackson told L+SI: "With strong financial backing and a committed management and R&D team, we look forward to the future with optimism, a renewed sense of purpose, and gratitude to those clients and staff that have stuck with us."

Last Act

With the announcement that PLASA chairman Mike Wood is due to leave JEM Smoke Machine Co at the end of May and fly off to take up a new position with High End Systems in Austin, Texas, as project manager for research and development working with Richard Belliveau, on his final visit to the PLASA office just before we went to press, he duly connected up the Association to the World Wide Web.

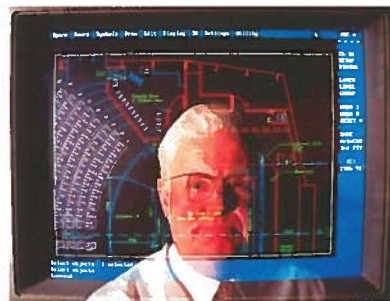
The first stage of development will see all PLASA members' basic contact information and company profiles placed on stream with weekly update and further information and services added in the near future.

L+SI editor and PLASA chief executive John Offord said: "Although Mike has only been chairman for a short time he has played a very important role in focusing our attention on



important projects for the future and preparing us for the Internet is indicative of this. We wish him and his family well for their new future in Texas."

Pictured above, L+SI's Ruth Rossington and PLASA's Anna Pillow with Mike Wood and PLASA's home page on the Internet.



Wyckham's Brainchild

The rather unusual photograph left shows UK theatre consultant John Wyckham superimposed by a CAD drawing of the floorplan of the Theatre Royal, the main performance venue on board P&O's new 67,000 ton cruise liner Oriana, which was officially launched by Her Majesty the Queen at Southampton in early April, before setting sail on her maiden voyage. The main contractors for entertainment sound and lighting were PLASA members Glantre Engineering. (See front cover and special feature this issue).

TRADITION & QUALITY



Stratheden (1937) at anchor. Courtesy P&O Cruises

P&O Cruises' marketing director David Dingle said:

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In addition to P&O's Oriana, Glantre marine customers for state-of-the-art entertainment, lighting, sound, video and rigging technology, include Princess Cruises, Celebrity Cruises, Holland America, Cunard and Airtours.

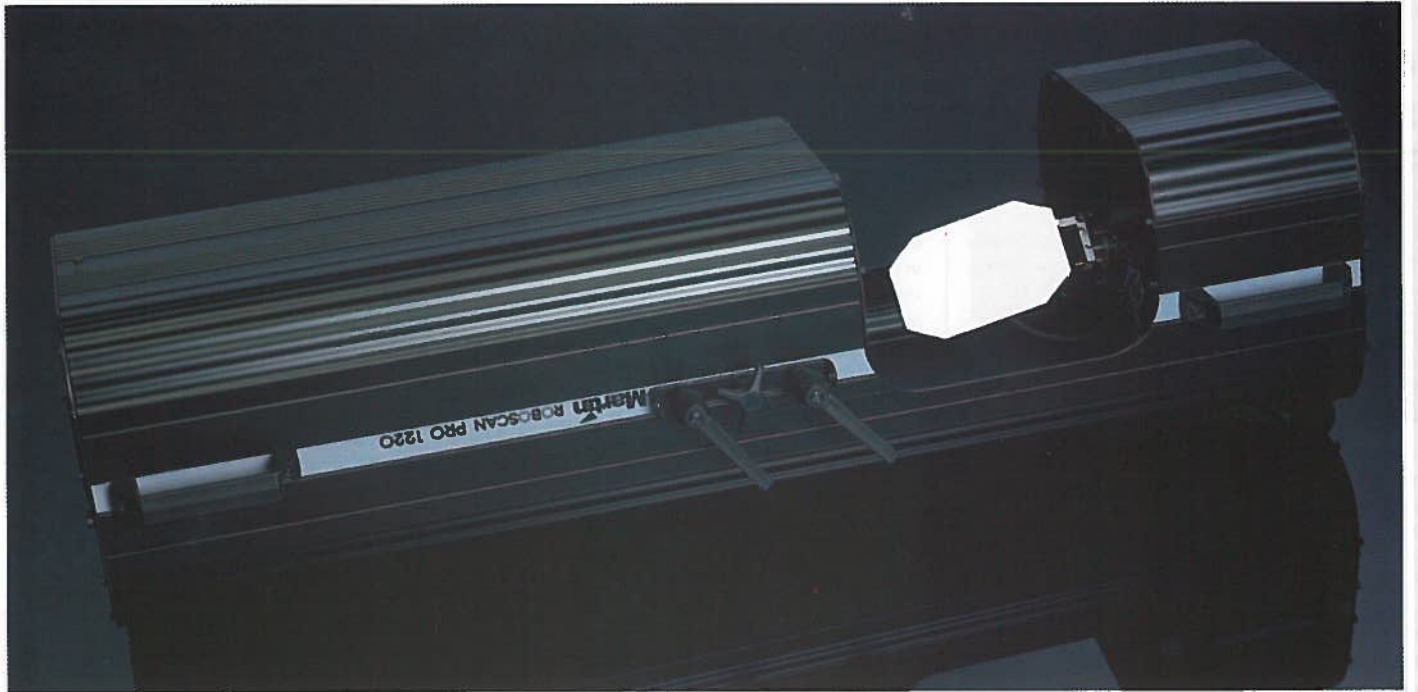


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Nahum leaves CP

Just as we were about to go to press, a statement was received from Pasquale Quadri, president of Italian manufacturer Clay Paky, informing L+SI that Pio Nahum is to leave the company. Nahum has been at Clay Paky for four years and in his role as commercial director has contributed greatly to the current success of Clay Paky. Enrico Caironi has been appointed as the new sales and marketing director.

Official Opening for Soundtracs



Leading international mixer manufacturers Soundtracs asked Ulf Ekberg of major Swedish pop band Ace of Base to officially open their new Epsom, Surrey, premises on 5 May in the company of invited industry guests. Pictured above John Stadius (technical director), John Carroll (sales and marketing director), producer John Ballard, Ulf Ekberg and Todd Wells (managing director) toast to the future success of the building and the company's operations.

New Lighting Laws

From 1st July, new and refurbished buildings with over 100m² floor area are likely to be affected by the new Building Regulation requirements for energy efficient lighting.

Part L of the Building Regulations deals with the conservation of fuel and power, and states that "artificial lighting systems . . . are designed and constructed to use no more fuel and power than is reasonable in the circumstances." Some lighting designers have commented that the new requirements are inappropriate for buildings such as theatres, hotels, museums and clubs where tungsten lighting is often used.

However, there is some flexibility in the regulations. An Approved Document, published after consultation with the industry, gives guidance on ways of complying. The solutions do not have to be adopted, but compliance must be demonstrated in some way. The AD indicates that this could be shown by following the control recommendations of the CIBSE Code for Interior Lighting.

The AD gives two ways to demonstrate compliance. The first is to show that at least 95% of the installed lighting circuit watts comprises lamps of high pressure sodium, metal halide, induction lighting, tubular fluorescent or compact fluorescent lamps with ratings above 11W. The second, is to show that the average efficacy of the installation is not less than 50 lumens per circuit watt. Clearly, there will be other ways to demonstrate that lighting meets these requirements: their purpose is to make provisions which are "reasonable in the circumstances".

For further advice contact the Department of the Environment, tel 0171-276 5954.

Showlight 97, Belgium



The National Illumination Committee of Great Britain (NIC) have just announced that the Showlight 97 international colloquium on film, theatre and television lighting will take place in Ghent Opera House from 28-30 April 1997. In the picture above NIC and Showlight chairman Ken Ackerman (right) shakes hands on the deal with Bart Doucet, administrative director of the venue. Also pictured are Showlight secretary John Smith (left) and the Belgian support team of Carla Maris of Sylvania, Raph Janssens of ADB (second left) and Giovanni De Schampheleire of Arf & Yes.

Lighting+Sound International will again be sponsoring the event.

Further technical details on the new Lowry Centre, as featured on our cover last month, will appear in June's L+SI



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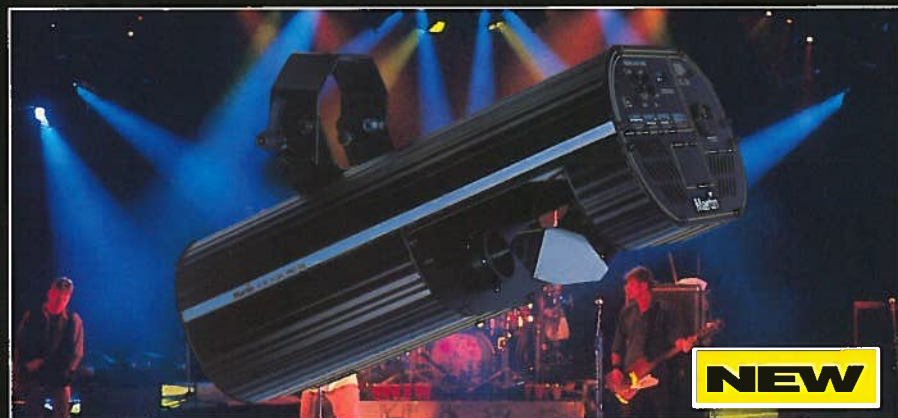
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- 11 radiant dichroic colors
- 11 gobos
- 150W TFF lamp
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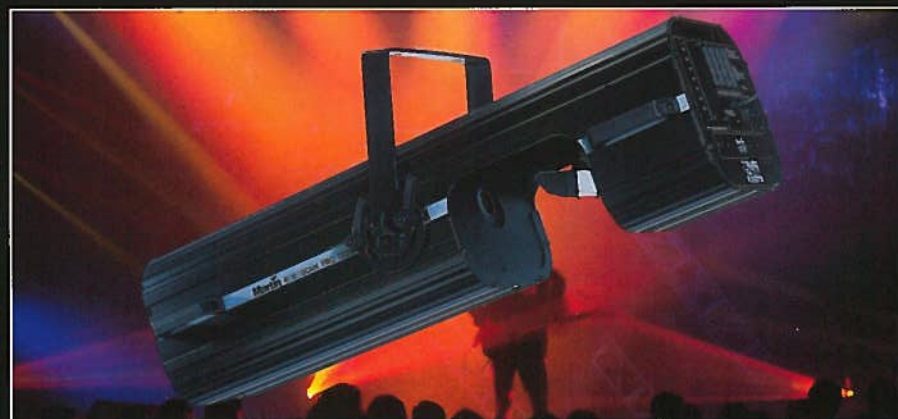
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The HOT Issue of the 90's

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1988 - JEM PIONEERS HEAVY FOG TECHNOLOGY

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The Olivier Awards

This year's Olivier Awards, presented by the Society of London Theatre for the best work in the capital through the year, saw one show sweep the board: the musical *She Loves Me*, covered in L+SI in August last year, won the categories for Best Musical Revival, Best Director of a Musical, Best Actress in a Musical (Ruthie Henshall), Best Actor in a Musical (John Gordon-Sinclair), and Best Supporting Performance in a Musical (Tracie Bennett). Its success was largely at the expense of the new production of *Oliver!*, which came away from the ceremony empty handed.

Once on this Island, also covered in L+SI last August, won the Best Musical Award, while touring company Cheek by Jowl scored a double with their acclaimed production of *As You Like It* receiving the Best Revival award with director Declan Donnellan being named Best Director of a Play. The set design award went to Stephen Brimson-Lewis for his work on *Design for Living* and *Les Parents Terribles*, and the lighting design prize went to Mark Henderson for his work throughout the year. Another lighting designer, Peter Mumford, received the award for Outstanding Achievement in Dance for his work on *Fearful Symmetries* and *The Glass Blew In*.

Rob Halliday

Radio One on the Internet

Radio1Interact, One FM's 'day on the net', on Sunday 26 March, featured four hours of simultaneous programming on the airwaves and the Internet worldwide web - the largest interactive radio event ever.

Creative Internet providers and design consultancy, Netmare, were commissioned to produce the web pages, including low-res and high-res MPEG encoded audio. The production facilities for the audio side were bolstered by Yamaha's ProMix 01, enabling Netmare's producers to refine pre-production techniques, developed to improve the results achievable with MPEG encoding. The site, including the sound archive, can be accessed on the worldwide web at URL: <http://www.bbcnc.org.uk/online/radiointeract/>

Lighting the Choir

Arri subsidiary company Bell Lighting provided the lighting equipment for the recent BBC adaptation of Joanna Trollope's *The Choir*.

Filming inside Gloucester Cathedral presented some problems, as the crew were not allowed to alter the fabric of the building in any way. The solution was to use a number of white garden umbrellas, which were mounted with the lights and raised, via a scaffold atop an Arri 5-section Supercrank, to bounce light onto the scene without touching the building itself.

Brian Tufano, director of photography for the serial, could not use his favoured 12kW HMIs for the interior of the cathedral, due to size and weight restrictions. However, the ArriSun 40/25 lamp proved to be a useful replacement. *The Choir* is the third adaptation of a Joanna Trollope novel that Bell Lighting have worked on, having previously been involved with *The Rector's Wife* and *A Village Affair*.

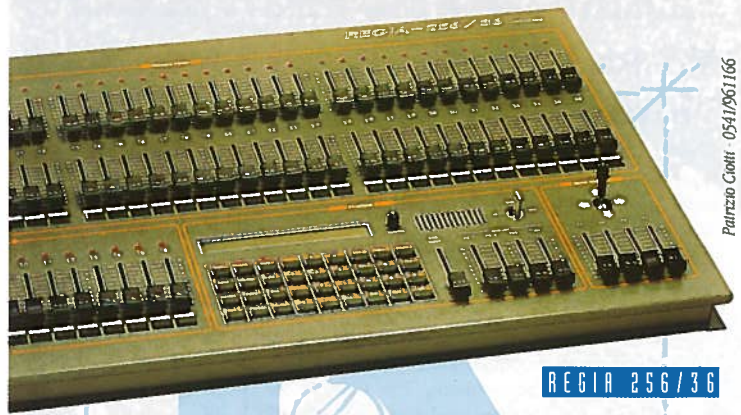


WL Pull out of Ireland

The White Light Group withdrew its local service to the Irish entertainment lighting industry with the closure of Lighting Dimensions (WL) Ltd on 31st March.

Jane Cody, who has, on White Light's behalf, been grappling with the nuances of the Irish market for the past 18 months, told L+SI: "It has been a sad experience to disband a team that has been so wholly committed to improving the quality, variety, functionality and accessibility of entertainment lighting, despite the financial restrictions imposed by the market's ability to pay for this service.

"Nevertheless, the unstable infrastructure in the local entertainment industry, combined with competitive pressures from UK companies with no local overheads, and the youthfulness of the market, has forced us to take a purely commercial decision that the quality operation of Lighting Dimensions is not financially viable in the long term."

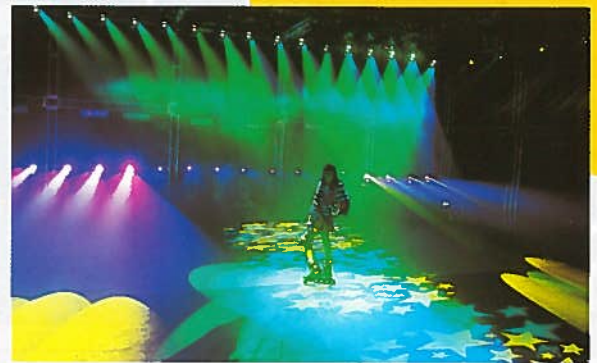


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REGIA

TECHNOLOGY AND RELIABILITY



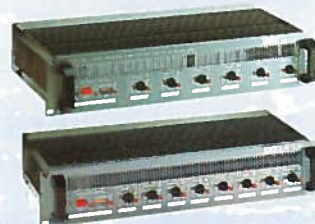
SGM professional lighting control consoles stand out for their advanced technology, reliability, ease of use and excellent performance. The most suitable lighting control console for every need (live entertainment, club use, theatre application, etc.) can be chosen with the certainty of having made a good choice, as they're manufactured by one of leading companies in entertainment electronics.

The SGM range of lighting control consoles consist of:

- REGIA 256/36: 240 CHANNELS, 36 PRESETS, DMX 512, RS 232 and SGM 256 outputs.
- REGIA 256: 240 CHANNELS, DMX 512, RS 232 and SGM 256 outputs.
- REGIA 24: 24 CHANNELS, 24 PRESETS, DMX 512 and SGM 256 outputs.
- REGIA 12: 12 CHANNELS, 12 PRESETS, DMX 512 and SGM 256 outputs.
- REGIA 8: 8 CHANNELS, 12 PRESETS, 0/10 V and SGM 256 outputs.

The ideal complements for SGM lighting control consoles are the compact, rack-mounting modular power packs, available in the following models:

- P 610/D, single phase/three phase, six 10A channels, inductive and resistive loads, 0/10V, DMX 512, RS 232 and SGM 256 inputs.
- P 810/D, single phase/three phase, eight 10A channels, inductive and resistive loads, 0/10 V, DMX 512, RS 232 and SGM 256 inputs.



P 610 / D

P 810 / D

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White Light Group Move into Broadcast

Theatre lighting specialist White Light and its project management subsidiary Technical Insight, have jointly moved into the broadcast business with a major installation at the British Telecom TV studio and presentation suite in Newgate Street, London.

The TV studio was set up just over two years ago to film the BT corporate television programme 'Vision', which is broadcast every fortnight on its own internal satellite network. The studio was originally sited in a former conference room with the intention to gradually develop the facility by adding to the equipment over a period.

Technical Insight were awarded the contract to design and manage the entire project, which included a complete refit of all lighting equipment, as well as physical restructuring of the studio itself. One of the most complex aspects of the job was fitting the work into the tight deadlines set by British Telecom in order not to disrupt the filming schedule of the fortnightly programmes.

Spirit for Paul Weller

Spirit's new Absolute 2 nearfield monitor speakers were used in a recent session at The Manor studios, during the mixing of Paul Weller's new solo album, *Changing Man*, and compared to the studio's existing Japanese manufactured nearfield monitors. *Spirit's* new speakers so impressed Paul Weller, co-producer Brendan Lynch (the Lynch Mob) and engineer Max Hayes that they all ordered pairs for themselves.

Harrods is Re-lit

A celebration party was thrown recently to mark the Fayed family's tenth year of ownership of the London department store Harrods. Part of the festivities involved the switching on of new exterior lighting - a feature which has been absent for some time. The new scheme also marks a fresh episode in Harrods' programme of energy conservation which, in addition to the substantial cost savings, is a vital contribution to the UK's programme for limiting CO₂ emissions, in line with the world's need to reduce the output of so-called greenhouse gasses.

For many years, the building has been illuminated by a mains festoon system using approximately 12,500 ordinary 25W lamps with a load of over 300kW per hour, which if used an average of six hours per day, would consume over 680,000kW in a year. The first phase of a new state-of-the-art system now adorns the front of the house. The Lumisphere patented low voltage lighting system is a British product and is already featured on many well known landmarks in the UK and abroad, including the Albert Bridge. The system uses individual pressure-tight luminaires positioned along a special electrical cable and supplied by a series of isolating transformers. Each luminaire consists of a lampholder with a polycarbonate sphere in which is housed a miniature light source.



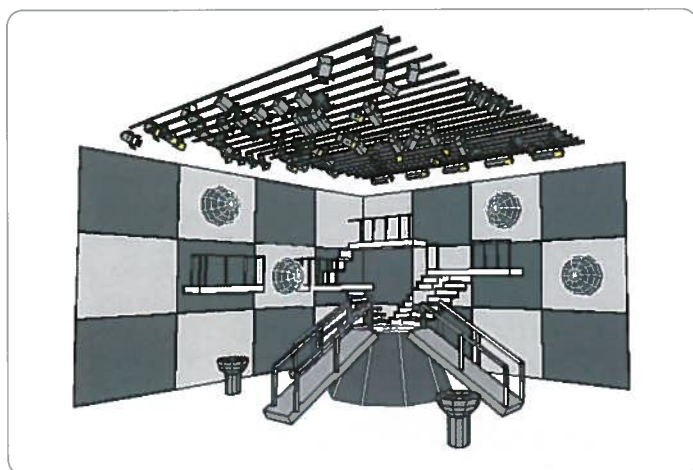
Martin Supply Sydney Opera House

Martin Audio have recently supplied the EM15 miniature full-range loudspeaker to Sydney Opera House, through AR Audio Engineering of Sydney.

The EM15 has been designed for applications where minimum loudspeaker size is required, and is capable of producing SPLs normally associated with larger enclosures. EM and Wavefront products have also been supplied to Warwick University and The Colloseum in Coventry. Eight Wavefront 3s, WX3 controllers and EM15s have been installed in Warwick University's Student Union bar. Leamington Sight and Sound installed eight EM185s and two S2 sub-bass units in Coventry's Colloseum.

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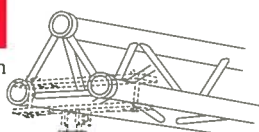


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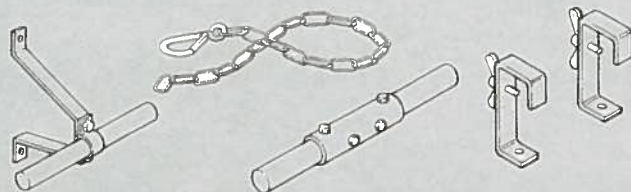
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Shell Shock Tenth Anniversary

Shell Shock Fireworks Company is celebrating its tenth anniversary this year after a highly successful 1994.

Members from the team recently took a trip to Valencia in Spain to meet with manufacturers and to catch the end of Las Fallas, the annual fireworks festival held in the town. "We have learnt a lot from the Spanish in the past," managing partner Andrew Smilie told L+S.I. "Our displays have always had a Mediterranean exuberance to them - and we have come back revitalised for the season ahead."

Contracts confirmed for 1995 include the Brighton Arts Festival, the Royal Windsor Horse Show, Southend Air Display, Gay Pride and a Corporate Centenary display on Lake Lemán in Geneva.

Charlie Altman

Charlie Altman, founder of Altman Stage Lighting, died on May 5th aged 89. The Altman name has been synonymous with theatrical luminaire manufacture in the United States since its foundation in 1953 - focusing on fresnels, followspots and ellipsoidals. Charlie Altman had no formal education, but built the company up through sheer determination and continued his involvement until his death. The third generation of the family is now running the company.

Academy Sound



Venuetech have recently installed a new EAW sound system at the Academy nightclub in Bournemouth on behalf of Lighting Technology Projects who are the UK distributors for EAW. The new sound system consists of four mid/highs, four high output trapezoidal bass horns, two high output hyperbolic horn sub woofers and a signal processing unit. Providing the amplification are Crest power amplifiers. The system was demonstrated in the club late last year and has been flown in two arrays either side of the proscenium arch with the BH882 sub woofers on the floor directly below.

The Academy was built as an indoor circus in the late 19th century, and converted into a variety theatre in the thirties. The interior has been kept as original where possible, with all of the wrought iron and plaster work still intact. It has been a night club since 1982 and is regarded as one of the premier sites on the south coast both as a club and live venue.

Chippendale Mixer

The original male erotic review show, The Chippendales, began a tour of Scandinavia, the Baltic States, Poland, Germany, Belgium and France in early March. This particular production of the world's favourite baby oil and beefcake song and dance spectacle, incorporates a Yamaha ProMix 01, supplied by LMC Audio Systems Ltd.

The ProMix mixer replaces the usual full-size live console fronting the 14k Martin F2 rig. Ian Williams of Encore ProAudio told L+S.I: "The lack of any need for effects return channels represents a huge saving in space. With all effects and dynamics processing integrated within the console itself, I'm down to one 14U rack for FOH, instead of a 14U, a 22U, a 24U and a full-size board. Normally we'd be losing anything up to six seats with the FOH position in the venues, but with the ProMix 01 we're only losing one."

Fire at Stage Two

Fire swept through the premises of Stage Two Ltd, in Watford, on Friday 21st April. The company's principal concern was to ensure that no inconvenience was caused to customers and that all equipment was supplied on time. The fire caused severe damage to the premises, but staff worked long and hard to get the operation up and running again. The company's insurers appointed a loss adjuster to allow remedial work to begin, and services are now functioning as normal.



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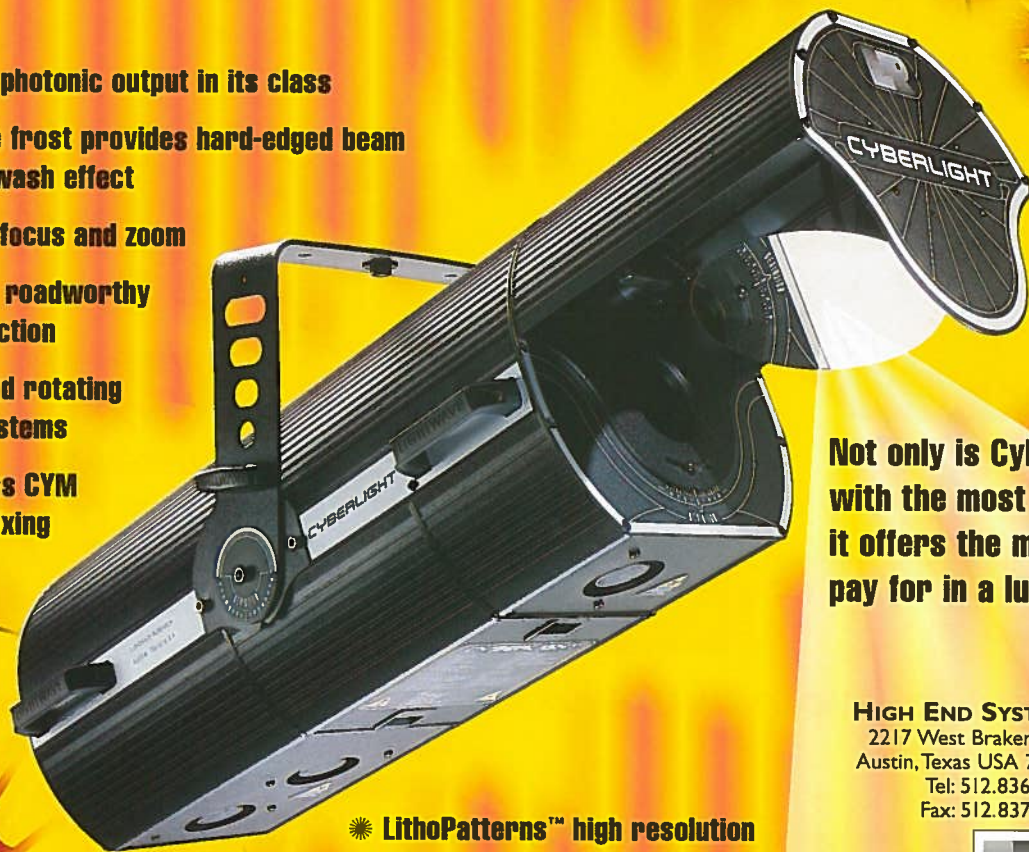
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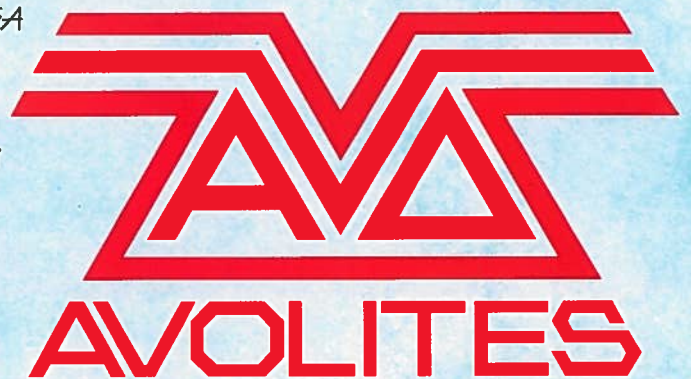
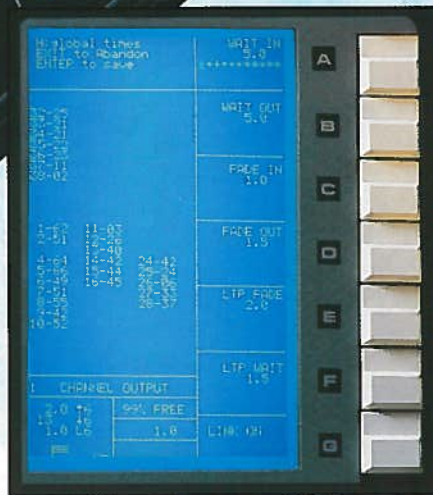
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1995 LIVE! AWARD WINNER FOR NEW LIGHTING CONSOLE

Irideon Exhibit in Europe



Irideon Inc, formed by Vari-Lite to develop its technology in automated lighting systems for the architectural lighting market, exhibited in their own right in Europe for the first time at the Hanover Lightshow.

Irideon's AR500 exterior luminaire which features dichroic glass colour filters and advanced computer technology, giving permanent, controllable, colour-changing capabilities was the main focus of the display, and was demonstrated by the Irideon sales team pictured above.

Installations of the AR500 include Planet Hollywood in Las Vegas, Universal Studios in Orlando, and Sea World California in San Diego.

Shuttle Recorded at 170dB

The launch of the STS-63 Space Shuttle was a unique event for two reasons: it had a woman pilot for the first time, and the take-off was specially recorded by a team of engineers including Morten Stove of Danish Pro Audio, the international distributor of Brüel & Kjær microphones.

Recording the Shuttle launch presents some extraordinary technical difficulties, not least because sound pressure levels can reach 170dB. Nobody was entirely sure that the microphone itself would survive the blast. One B&K4004 was set just 500 feet away from the launch pad, where it handled 170dB without distortion. Another 4004 was set 1400 feet away and subjected to 146dB. A mile away, a third 4004 still recorded 125dB of SPL. All the mics were connected to the B&K 2812 MkII pre-amps, and sent via equalised phone lines to a mixer with pad control. All levels were checked and calibrated with a B&K 4228 Calibrator, using level information from measurements done at previous launches. Two 3530 stereo sets were set up three miles away, recording straight to Sony DAT and to a Nagra.

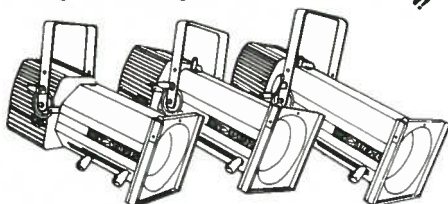
Lonely Hearts turn to BBM

BBM Electronics supported the new musical Lonely Hearts by donating six Trantec Systems S5000 UHF radio mics for previews which ran throughout March at the Old Fire Station Theatre in Oxford. The production is the brainchild of talented new writer Trisha Ward and is widely tipped to become a West End hit. Dimension Audio provided the audio equipment for the musical and were so pleased with the result that they immediately placed an order for 20 systems.

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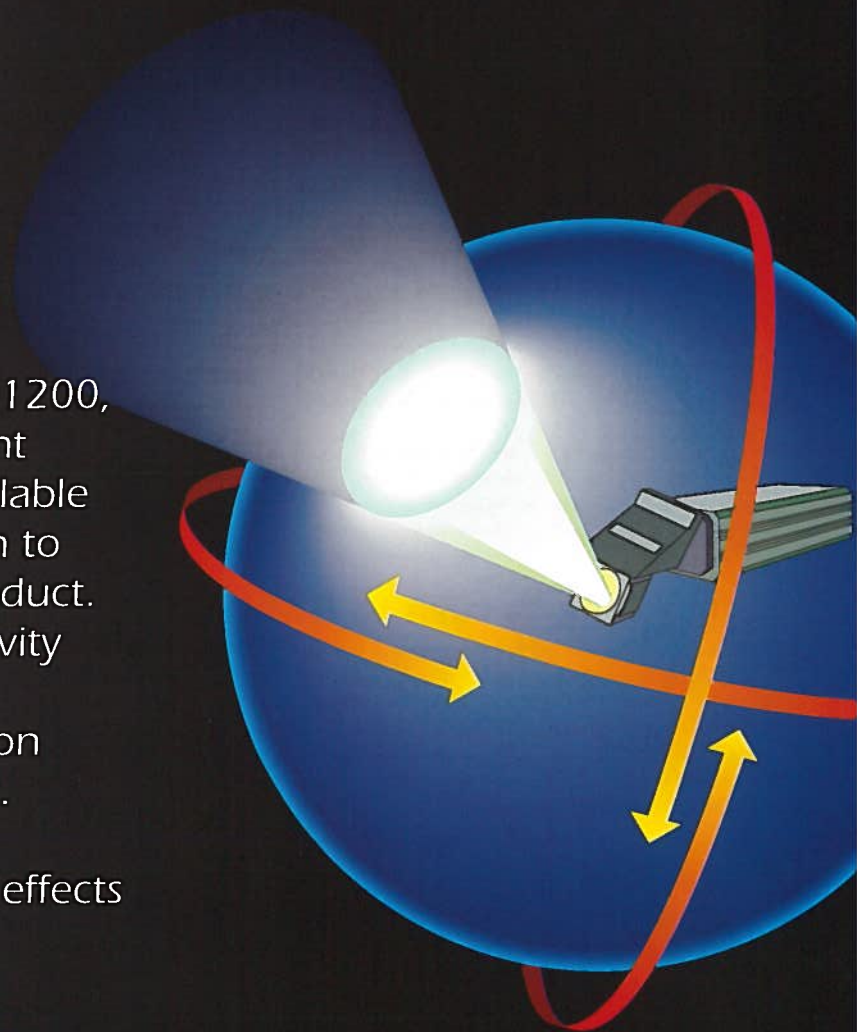
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Fare Enough?

Five students from Friesland School in Nottingham have been selected by the International Amateur Theatre Association to represent the United Kingdom at the European Youth Theatre Encounter in Ankara, Turkey.

The encounter has been run in many countries since it began in 1982. This year the organisers are the Turkish Ministry of Culture and the event is funded by the Turkish Ministry, but the students are required to find their own air fares.

Companies wishing to offer sponsorship to this project should contact Friesland School, Nursery Avenue, Sandiacre, Nottingham NG10 5HG.

Sennheiser Afloat

BBC TV-OB's coverage of the Oxford Cambridge Boat Race, in early April, included a radio link between the Oxford coach and the BBC camera launch, as a feature of the race commentary.

The link was established by means of a Sennheiser EK 4015-UHF miniature 'pocket size' true diversity receiver pack on board the camera launch and a SK 50-UHF miniature belt pack transmitter. An MKE2 tie-clip microphone, was attached to the coach, to enable his commentary to be transmitted from the Oxford launch following the competing boats.

AS at the Lyric

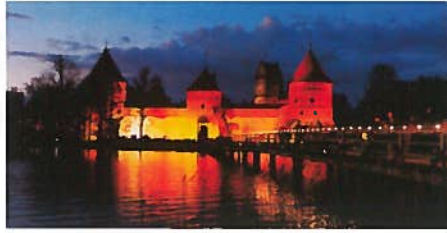
Autograph Sales completed an extensive Clear-Com intercom installation for the Lyric Theatre in Hammersmith, West London. Replacing an old 2-ring system, Autograph supplied and commissioned a new 4-ring network, including matrix switching facilities and a purpose-built production desk.

The complete installation comprises the Stage Manager's Master Station - with 4-ring access - together with permanently-installed intercom stations in the theatre's two control rooms and at the fly position. Autograph assembled a custom-built mobile production desk, which includes a 4-way Slave Station, connection panels for four belt-packs, plus audio and video tie-lines.

SSE On the Road

SSE Hire of Birmingham will be supplying a range of equipment, including Midas XL3 consoles, Crest and Crown amplifiers and EV speakers for the European tours of Wet Wet Wet and the Cranberries. Other fixtures in May include the Coimbra festival in Portugal and the Mayday celebrations in Rome.

STS in Vogue



Stage Technical Service of Vilnius, Lithuania, recently lit an International fashion festival - 'In Vogue Vilnius 95', which took place in April. More than 11,000 spectators attended the event, which featured well-known names such as Paco Rabanne, Givenchy, Nolan Miller and Olivier Lapidus. The opening ceremony was held at Trakai, a romantic fourteenth century castle situated on an island in the middle of a lake.

To enable filming of the events, STS were required to maintain a constant colour temperature over the stage and catwalk area. The lighting rig contained over 200 Par cans and an assortment of Fresnels, CSI 575 and 2500 followspots and 40 1-2kW lamps.

EV Sets Sail

Shuttlesound recently supplied product for the refitting of the QE2 to specialist AV contractors, Electrosonic. The company were also consulted on system specification and design. The total contract for Electrosonic to provide and install sound systems for three of the liner's entertainment areas came to just under £200,000.

The rooms in question were the Queen's Room ballroom, the Yacht Club bar, and the Grand Lounge where the cabaret is staged. In the Yacht Club, Graham Wickman of Electrosonic opted for a system based around E-V's SX200 cabinets.

The most technically demanding system was that in the Grand Lounge where most of the live acts are staged. Covering an area that spans the full width of the liner, the room also has a large balcony overlooking the stage and dancefloor from three sides. Having decided on a single point source which was provided by a central cluster of two Deltamax DML 1122As flown over the stage, the main problem was how to ensure even coverage without blocking sightlines to the stage. The solution proved to be a system based on four levels of delay which was achieved using Dynacord's DDL 204. The design incorporated a small amount of existing product with the addition of Altec ceiling speakers and EV SX200's. The system was powered by a Rane MA6 Multichannel amplifier and two Crown Macrotech amplifiers.

APRS Seminar line-up

The APRS has announced a strong programme of briefings and workshops, to be run at the Audio Technology '95 exhibition at The National Hall, Olympia from 21-23 June 1995.

The full programme of briefings run as follows: 21st June - John Leonard on 'Pioneering Automation Systems in the theatre'; Trevor Duplock of Micropolis on 'Audio Video Disk Storage and Disk Array Systems'; a forum on 'Live Music on Television' hosted by the Institute of Broadcast Sound and Line Up magazine.

22nd June - Tim Frost of Data Production International magazine on 'Multimedia'; Andy Bereza focusing on the practical issues of the same subject; Peter Filleul, vice chairman of Re-Pro, introducing 'ISRC and ISCR Data Collection'; Andy Day of Dolby and consultant Bill Foster with an 'ISDN Update'.

23rd June - John Watkinson on 'The Sins of Synchronisation and Machine Control'; John Wykes of Audio Engineering on 'The Blessings and Curses of Working with Radiomics'; 'The Increasing Use of Audio Compression' by Nicral's Detlef Weiss.

The seminar line-up also includes sessions by David Mellor on 'Equipping a professional project studio'; John Ostertag of Ampex on 'Media issues relating to Modular Digital Multitrack'; 'Problems of PA in small venues' hosted by PLASA and L+SI and a series of production workshops presented each day by The Mix magazine.

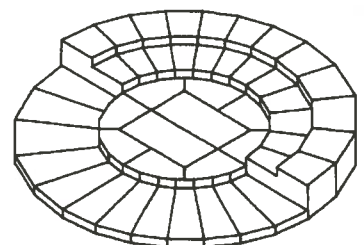
Cable Message

Arena Theatre Light & Sound have changed their name to Arena Cables, and relocated to: Unit 5, Raynham Close, Raynham Road Industrial Estate, Bishops Stortford, Herts CM23 5PJ.

Thomas's Swiss Role

Thomas Engineering were recently involved in the construction of a complete studio set for Swiss National Television. The set will travel to exhibitions throughout Switzerland, where Swiss TV station DRS will be broadcasting live. Thomas became involved in the project through Power Light, their Swiss distributor, after they were approached by the company in late 1994.

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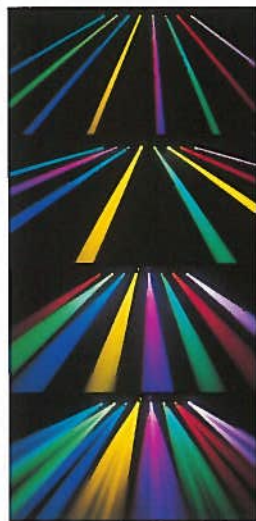


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Bumper Jands Year!

AC Lighting, Jands' European distributor, are reporting record Jands sales in the first quarter with the Event console proving popular. "In the past year or so the Event has established itself," AC Lighting's Glyn O'Donoghue told L+SI. "We feared that people would put off purchasing consoles for moving lights until we start shipping the Jands-Hog later this spring, but it would seem that the Event has quickly earned itself another niche, this time in the medium-sized theatre and TV studios where the ability to blind edit and preview memories on screen is important."

AC have confirmed that stocks of the new Jands HP12 12x10A digital dimmer rack are already on their way and the Jands-Hog range is 'just around the corner'.

Theatre Patents

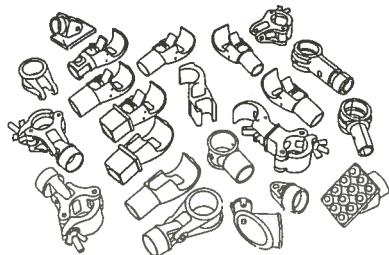
As the technology of the theatre industry continues to expand and develop, it is becoming ever important to keep up with the latest ideas and developments which have just come off the drawing-board. Thousands of patents are produced every year all over the world, though there is not a specific index classification for the theatre. It is a time-consuming and laborious task to sift through the latest patents to find the few that are relevant. The answer lies in entering the Theatresearch theatre patent subscription!

Every month subscribers receive abstract copies of the latest patents for the theatre industry. Subscriptions can cover just the UK or UK, European, USA, and World specifications. At the end of each year an index is provided, giving the names of patentees, and the subject matter classification heading. A full copy of the information can then be obtained for a small additional cost. The information can also extend to include equipment or development specific to television, disco, etc.

If you would like more information about the service please write to: Theatresearch, The Lodge, Braisty Woods, Summerbridge, North Yorkshire, England, HG3 4DN.

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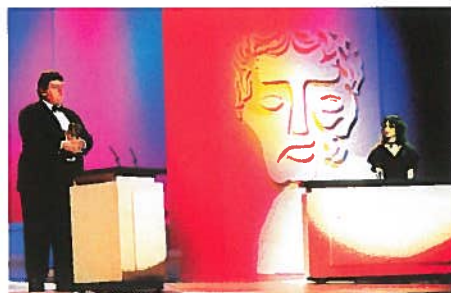
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Playlight at BAFTA



Playlight supplied equipment to Scottish Television for the BAFTA Craft Awards which took place recently in Glasgow (shown above). Lighting director Joe Malcolm specified 40 Golden Scans and 60 VL5s to highlight the main performance of the evening, from Scottish band, Wet, Wet, Wet.

Playlight are also busy elsewhere: touring-wise they are currently working with singer Barbara Dickson, and on the television front they are supplying equipment to Bray Studios for a new drama 'Out of the Blue', a UK version of the hit US series NYPD Blue.

Vanco Close NY Office

One of the leading rental companies in the States, Vanco, have closed their New York offices at Stony Point and transferred the entire operation to their existing premises in Orlando, Florida. Martee Nuruddin, the general manager of the company's Florida operation told L+SI that the decision had been taken because of the increasing competition for the Broadway market. The rental stock from the New York base was subsequently auctioned off.

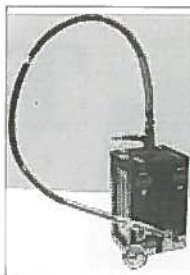
PALA 95

Pro Audio & Light Asia 95 will be held at Singapore's World Trade Centre from July 12-14. The show is Asia's principal light and sound exhibition, and this year will include an Audio Broadcast Technology section.

For further details contact IIRX in Singapore, telephone (65) 227-0688.

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Martin Moves House

L+SI visits the company's new base

Martin Professional of Denmark moved into their new 11,500sq.m factory during April and almost immediately doubled their production staff to 200 and their output commensurately. "Sales doubled from the previous quarter," Peter Johansen, MP's dynamic proprietor told L+SI. "So it's as well that we had the capacity. The only problem is, that even in that huge area, it has meant that we are getting tight for space again already!"

The move from the previous plant, a few kilometres down the road in the old harbour town of Friederikshaven, was accomplished in record time under the military style planning and command of Peter's younger brother Torben, who is the company's production director. He is especially proud of their achievement in shifting the entire automated spraying plant, and having it back in full production within 48 hours. This means coating some 60-80,000 pieces each week. "We are probably operating at 85% of full capacity overall," Torben told us in the third week of April, not long after the move. "But we should be up to full speed by the end of the month."

The new facility takes automation to new heights for an entertainment lighting company with high speed robotic PCB assembly machines, computer-controlled presses and turning machines, and even robotic assembly of dichroic colour wheels. An area approximately one third the size of the previous factory is devoted to Roboscan Pro 1220 production alone, which gives an idea of the popularity of that product in the market-place. Naturally, in such an industry a great deal of the work is carried out by hand and the new premises is lined with acres of work benches all nicely organised in product groups with teams of staff devoted to their particular product. With so many women working in such an environment Torben Johansen is proud of the company's record as a caring employer, concerned about working conditions for his staff. The benefits have already been felt. On the day prior to our visit there was, surprisingly, a call for a national strike in Denmark, but no one at the factory took part following a vote that morning.

A good example of the Johansen response to improving the working environment is the reaction to sinus complaints from assembly staff which was traced to the flexible dust extraction system fitted to each work bench. The solution? "We found a plant specialist to bring in some



Martin Professional's new 11,500sq.m premises in Friederikshaven.

potted trees," Torben explained. "This natural process of humidity generation has made all the difference." This typically radical approach to problem solving, has left the main aisles in the assembly areas looking like tree-lined avenues, which must be a first just about anywhere and make the place very attractive to work in.

Natural materials play another part in this environment, for in a bid to eliminate static, and to make a comfortable floor to stand on for long periods, all the floors in the assembly areas have been covered in African hardwood bought in a huge quantity just for the purpose. Similarly, with a view to reducing noise pollution, personal radios are to be banned and replaced by an 'in-flight' audio system at every work station.

In the main warehouse, the KAOS system of computer stock control is used to deliver what Torben Johansen calls 'almost in time' stock management, where everything is turned over every four hours, either into, or out of, the factory. In the small parts store, only two operators are required to handle all incoming parts and organise the parts 'kits' going to production. The secret here is the Pater Nosta automated storage system which keeps bit parts on a series of looped trays driven by a chain belt system, three of which have saved some 200sq.m of normal shelf storage.

As with everything in the Johansen domain, this visit was carried out at break-neck speed with Torben trotting from point to point to lap up the unaccustomed longer distances of his new protectorate. How long, we wondered, before he acquires a battery powered scooter, like the ones seen in use by stand contractors at LDI? And what about the old factory? MACH Systems, a Martin associate are moving in, of course. With Mr. Johansen senior in charge of manufacturing their line of speakers.

In conversation with Peter Johansen after the visit, he brought us up-to-date with the progress of the company's planned flotation on the Danish stock market which, he says, will definitely take place in October this year. "It's all set," he told us. "All I have to do now are the road shows promoting the flotation to financial institutions." However, more in keeping with the roots of our mutual business was Johansen's immediate commitment to what must be the biggest outdoor laser show of all time. Forty lasers were to be pointed skywards to create a continuous line of coherent light for 200 kilometres along the West coast of Denmark to mark the end of the wartime occupation of the country. "I had considered buying the manufacturer of the lasers, but finally decided against it," he said ruefully.

We also discovered that Peter has a number of surprises up his sleeve. There will be a moving head version of the Roboscan constructed from carbon fibre, in three lamp choices (200MSD, 400HTI and 575MSR), with spot and wash options ready for PLASA. Marc Brickman will design the Martin lightshow for PLASA and LDI '95, which should be an event worth waiting for. Martin are launching a theatre luminaire with a patented, remote controllable, framing shutter: "It will give you any shape of image you could possibly want," claims Johansen. To cap all this frenetic product activity, the architectural Roboscan Pro 1220 is now ready to roll.

As you might imagine, cramming all this into a single day in premises which are 270 kilometres apart was quite a tight squeeze, and in keeping with Martin philosophy, a high speed car journey to the airport to catch the plane with five minutes to spare before departure, seemed an appropriate ending to a day in Denmark with never a dull moment.



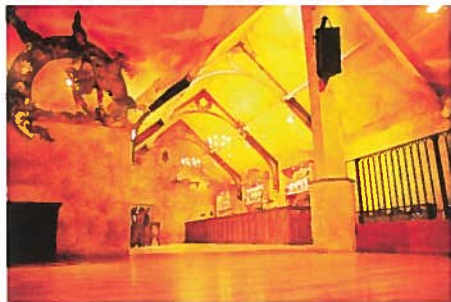
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Time Out



The Time nightclub in Cheltenham is a new venture for independent operators Justin and Jason Little. The club has a grand, Gothic interior resembling a cross between a church and medieval banqueting hall, and since its opening in February, has had no trouble filling its 550 capacity. The Cerwin Vega sound system, supplied by Lamba plc, exclusive UK distributors, was installed by Turbo Electronics of Gloucester. The speakers are part of CV's ProStax range, and the club features four PS12F mid-top cabinets scaling the walls and two PS215 bass cabinets, installed in the DJ 'pulpit'. The ProStax boxes are driven by Citronic amplification, with infill provided by Bose 301s.

The lighting system, also installed by Turbo Electronics, features (appropriately) a crucifix-shaped Optikinetics Trilite rig supplied by Leisurtec, along with Optikinetics White Lightning strobes, two Lampo Corallos, two Columbus 650 ALs, four Genius mini-scan Flowers and 24 Par cans. A Light processor Commander provides control.

Safety Seminar at ABTT Show

Joe Aveline reports

A seminar entitled 'Does a Licence Make a Venue Safe?' was given at the recent ABTT show at London's Royal Horticultural Halls.

Key speakers delivered papers outlining the problems they experienced in the current framework of Theatre Licensing and Safety. These included the chairman of the ABTT Safety Committee, the legal officer from SOLT/TMA, and the technical manager of the International Convention Centre in Birmingham. Following the main speakers, a number of further contributions were received from the floor.

Jointly organised by ABTT, AETTI, BECTU and SOLT/TMA, the conference reflected the almost universal concern within the industry as to the current situation reflecting the desire that something needs to be done to prevent it deteriorating even further. There was general agreement that the way local authorities and officers of other agencies apply their criteria without any reference to any central authority was proving expensive, in some cases unsafe, and illogical in operation. The agreement extended to a feeling that inspectors should be

trained to a specific standard and that the standards they apply should also be agreed on a national basis. There was less agreement about the means whereby these objectives could be achieved. Various motions were put forward, ranging from the establishment of an over-arching authority, all the way to a 'beefing up' and strengthening of the work of the Joint Advisory Committee operated by the Health & Safety Executive. In this respect, there was in attendance a representative from the HSE who, although without a remit to speak, would have had a lot of useful information to take back to his office.

However, as those present all felt that some action needed to be taken in order to not only make the view of the industry known in a wider field, but also to prevent further expansion of the current unfortunate system, it was decided to make direct approaches to the Department of Trade & Industry, the Department of National Heritage and the Health & Safety Executive, on behalf of the conference, to convey the general tenor of feeling within the industry about this deeply complex problem.

USITT Award - Jules Fisher was the recipient of the 1995 USITT Award, presented in late March during the USITT Conference in Las Vegas (see news last month). This award is given annually to recognise 'Lifelong commitment to high standards of quality in work with the Performing Arts Community'. Fisher was honoured for his work as a Tony award winning lighting designer, producer and theatre consultant. In a celebrated 30 year career, Fisher has lit over 100 Broadway shows and has won Tony Awards for *Grand Hotel*, *The Will Rogers Follies*, and *Jelly's Last Jam*. He was also nominated for an Emmy Award for lighting the Reunion on the Mall Celebration for President Clinton's inaugural ceremony. Recent Projects on Broadway include *Angels in America: Millennium Approaches* and *Perestroika*.

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The Direct Approach

Lee Baldock visits Cambridge's Theatre Direct

The last few months have been a revolutionary period for Ancient Lights. For a start, they have ceased to be known as Ancient Lights, and have taken on the more business-like name of Theatre Direct.

They have also moved their entire operation out of the small storage/service/shop 'shed' in which they have enjoyed a somewhat cramped and cosy existence, to plush new 6,000sq.ft premises, which include a well-stocked retail outlet, extensive storage facility, service department and a large kitchen where manager Adam Blaxill is always willing to feed wandering members of the industry press. The move is a major step for the company, as Adam points out: "Our old place would have fitted into this one six times. At first we thought we'd have to move everything up to the front to make the place look full, and stick a badminton court at the back."

This expansion has taken two years of hard work, and has meant a lot of saving, as well as a lot of time searching for just the right premises. The company had been increasingly squeezed into the old building, with often too little room to prepare and check equipment for hire, making it necessary to lay out each job in the back of a van. One side-effect of this steady loss of elbow room was the gradual decline of the trade counter side of the business, with more and more space being set aside for storage. Another was the impossibility of taking on another important market - staging.

The name change was perhaps the most important part of the move. Adam explained the reasons behind it: "We noticed that having the word 'lights' in our name was making people think



The Theatre Direct crew of Paul Harte, Gavin Smith, Adam Blaxill, Simon Heath and Ian Driver.

that we did nothing else. Regular customers would ask us, 'Where can we get hold of some stage make-up?' and we'd despairingly say 'Here!' - so we needed a name that would reflect the more general sphere of our business. Our area of expertise is the theatre - we supply almost everything - scenery, paints, stands, pyrotechnics, paints, filters, lights and now staging, so the word 'theatre' was an obvious choice. Also, the majority of our business is done over the phone, and even people who think they are far away are only 24 hours away by TNT - the word 'direct' I think reflected this aspect. Out of all the names we considered, this kept coming back as the strongest. The move was the right time to change the name."

The majority of the company's business comes via word of mouth. As the Strand main dealer for the region, they now have a client mailing list of well over 4,000 names, and their regular customers can always be confident that the equipment they hire has been fully tested prior to leaving the warehouse. Adam and the TD team are particularly proud of the thorough nature of their

service. "All jobs are assembled the day before they go out, and everything is tested, as a system." Hire manager Ian Driver explains: "When a client needs a little extra help, I'm happy to provide it. People call and say 'I need some lights', and that's about it. They want me to tell them what they want, so I just have to tell them what I think they *might* want, and they're happy. I have to be part lighting designer and part mind-reader!"

Adam sees the next move for Theatre Direct as a process of building upon the already established client base within the area. He emphasises the very broad nature of 'theatre' as a potential market: "It doesn't have to be a big building with lots of seats - theatre goes on everywhere, and there is still a great deal of untapped business within East Anglia."

The transition from Ancient Lights to Theatre Direct has been a remarkably smooth one - the workload hasn't skipped a beat. The team are enjoying the relative luxury of their new base, and their expanding business has plenty of room to breathe for the next phase in the company's development.

Millbank Expansion

Millbank Electronics has completed its expansion programme for 1995 with an additional 20,000sq.ft of office and industrial space.

The company expanded from its present single site function to a multi-site operation including two new sites in the UK and one in Belgium. Millbank's head office remains in Uckfield, with new sales offices in Forest Row and Sheffield.

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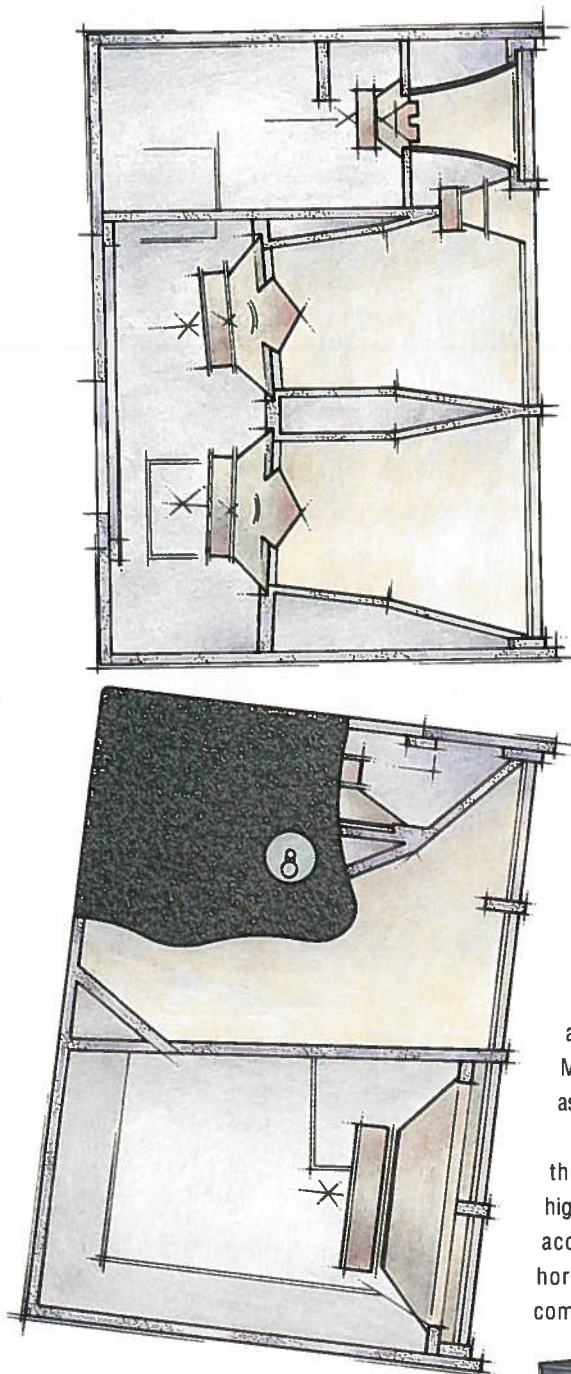
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The Wavefront 8 features a three-way horn loaded design for high system efficiency, providing an accurate 55 degree constant horizontal dispersion pattern. The component complement of twin 12"

low-mid drivers plus a unique toroidal-technology 6.5" high-mid horn driver and a 1" exit high frequency compression driver ensure that the Wavefront 8 offers true full-range performance working smoothly and efficiently down to 80Hz.

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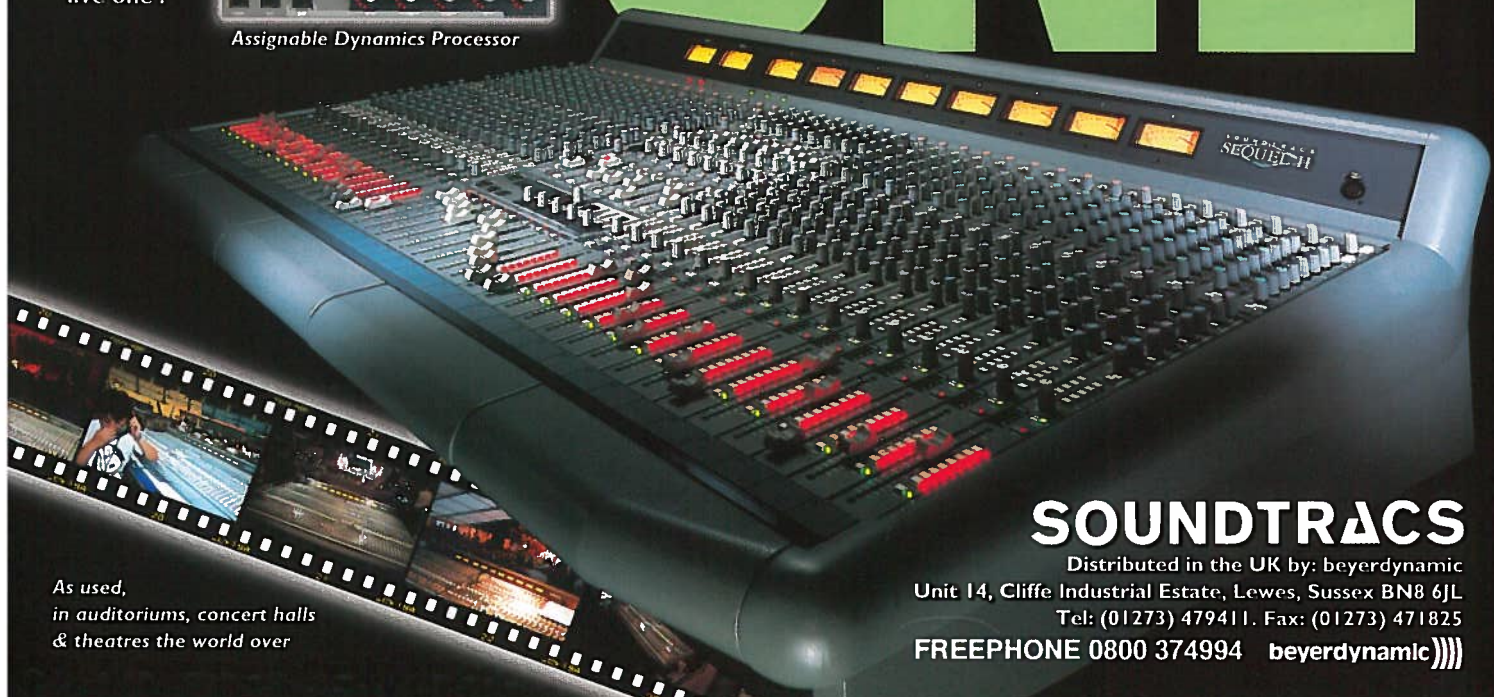
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Soundcraft's Success

More than 100 students attended Soundcraft's 6th Going Live! training course for live sound engineers, held in Manchester at the end of March.

Roger Lindsay and Jim Ebdon took the main FOH console classes, with Andrew Frengley on monitors. The first part of the course, an introductory day for beginners, was attended by 25 students. Over 75 more students arrived on Saturday morning for the main body of the course. There was a full Turbosound Floodlight PA system to support the Soundcraft Europa console, used for front-of-house training, and the Soundcraft SM24 monitor console.

Plans are currently being drawn up for a special Going Live! course, specifically aimed at sound engineers working in the theatre. The course is planned for October - further details to follow.

DAMSTY Trophy

The DAMSTY Committee have announced that the annual charity weekend competing for the Dave Martin Memorial Sailing Trophy will be held on Southampton Water on 1st-3rd September.

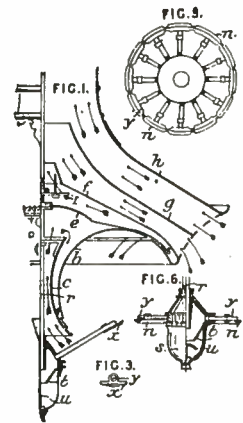
In addition to the yacht races, an evening of merriment with a Jolly Jack Tar theme is being organised for Saturday the 2nd, at the Southampton Novotel, to which all the industry is invited. Tickets include a day on the Spectator's Boat watching the racing and support the crews, Dinner on Saturday night, plus hotel accommodation if required.

For further details telephone Ken Walker of PLASA Special Projects on (01753) 646100.

ONE HUNDRED YEARS AGO THIS MONTH BRITISH THEATRICAL PATENTS 1801-1900

*Intro' to Patent Abridgement 9914 of 1895
(W.J. Thomas)*

In 1895 many theatres were still lit by gas. Just think about it - every light in the house created by a flame of incandescent gas, each flame distributing heat by convection and radiation. Theatres were never less than warm: comfortably in the winter, uncomfortably so in the summer. In the upper reaches of the house, conditions might reach the limits of tolerance. For example, temperatures in the Sadler's Wells gallery went as high as 83 degrees F (28.5°C) while the upper gallery at the Alhambra could reach a torrid 95 degrees F (35°C). Ventilation, then, was the thing, and this month's patent shows one of the many attempts at the 'Sunburner' - a device which used the gas flame both to illuminate while creating a ventilating draught.



9914. Thomas, W. J. May 20.

Sun burners.—Relates to means for lighting theatres, lecture rooms, &c., and forms an improvement on Specification No. 5102, A.D. 1888. Gas enters the receiver *r* by the pipe *r*. Two baffles *u* and *t* prevent solid matter passing to the burner *y*, Figs. 5 and 6. A ring *n* of triangular section forms a shield and deflector for the flame. The burners may also be placed at 45° to the vertical, as in Fig. 1, a deflector *z* being fitted to each burner, as in Figs. 1 and 3.

Marquee for RCF

Marquee Audio have been appointed main dealer for RCF Electronics (UK) Ltd. Marquee, who have recently been specifying RCF's Monitor Series in several of their installations, will be taking the full range of RCF Pro products.

LSC Changes

The Australian-based manufacturer of lighting control equipment, LSC Electronics Pty Ltd, will have new contact numbers with effective from May 8th 1995.

The company can now be reached in Victoria on telephone +613 9561 5255, fax +613 9561 5277 and E-mail: +613 9561 5625.

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- Narrow/wide fresnel or PC optics
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FLY

SHOWBOAT

Tony Gottelier, L+SI's marine specialist, takes a look at the Oriana, Britain's first new cruise liner for many years, and finds a Showboat

The marketing men have recently rediscovered the potential in evoking P&O's long maritime history, steeped as it is with the discovery and exploration of new lands, with the charting of the great navigational trade routes to the East, and third sons of Edwardian families seeking their fortunes in the far flung outposts of Empire. Even the name from which the acronym derives, The Peninsular and Orient Steam Navigation Company, is redolent of that great British maritime tradition, for they are even able to lay claim to having invented cruising in 1830, and that very history is now being called into service to sell everything from a passage to Calais, in the company's latest commercials, to the hospitality features of their great new passenger ship Oriana.

But P&O have not rested on past laurels. Quite the opposite, they have been more progressive and forward thinking than any other British ship owner. Recognising the potential of the American cruise industry, they established a firm foothold in the market-place with Princess Cruises based in Los Angeles which has been enormously successful and is currently building three new ships in Italy, one of them a 100,000 ton mega-liner. From this experience and the combined expertise of operating their existing European fleet, which includes the flagship Canberra, P&O boss Lord Sterling became convinced that the time was right to build a brand new cruise ship based in Britain and specifically for the British market, journeying to the warmer climes of the Mediterranean, Canaries, Caribbean and, following American success in Alaska, even the colder destinations of Norway and Iceland.

It is a curious fact that the name Oriana derives from a heroic princess of ancient English mythology and 16th century verse, to whom Queen Elizabeth I was compared by the dotting songwriters and poets of her court. Oriana was also the name given to P&O's ship of the sixties which for 25 years, plied between Southampton and Sydney before semi-retiring to be a floating hotel in Japan. So, if it weren't for other associations, it would have been reasonable to call the new vessel the Oriana II, but there any similarity with the famous, and now infamous, Cunard vessel ends, for while the new owners of the Trafalgar House parent devoted a comparatively paltry £60m to a refit of the QEII, the disastrous consequences of which have been well chronicled, P&O will have invested upwards of \$300m on their sleek new flagship.

Though we Brits can no longer build such great liners at home, we still maintain a substantial presence in the market-place with the other great names such as Cunard and, more recently, with the arrival of the debutante Airtours on the scene. Until now though, it has been the Americans who have set the pace with the main cruise destination of the Caribbean, yet almost all the ships are built in Europe, principally in Yards in France, Germany, Finland and Italy, and British skills are there aplenty, especially when it comes to the



P&O's 67,000 ton superliner, Oriana, custom-built for the British market.

considerable amount of entertainment and attendant technology now considered essential for any successful cruise liner. For the Americans have shown, from their different tradition stemming from the old Mississippi riverboats with their live cabaret shows and high-rolling casinos, that cruising need not be the exclusive preserve of the blue-rinse brigade with which it had become synonymous here. The difference in style can be summed up by the slogans adopted by Princess and P&O. While Princess Cruises boast 'It's more than a cruise, it's the love boat', the Oriana is billed as 'the new superliner for Britain'. So it is not surprising, if on the whole, the on-board entertainments follow a very British line.

Among the 50 British companies involved in the project, it would not be a surprise either to find Glantre Engineering, a name well known to the readers of L+SI, appearing as the entertainment sound and light contractor. For Glantre's managing director Derek Gilbert has

been aggressively marketing his company to the cruise industry for some years, relying on their experience with many theatre installations all over the world, and such major projects as Videopolis at Euro Disney, to establish their pedigree. Though the marine business is notoriously a 'closed shop', so successful have Gilbert's efforts been, that at a meeting in his conference room recently, one wag from a shipping company, referring to recent project photographs on the wall, told the assembled company, "I bet Derek changes the pictures around depending on who is coming to the next meeting!"

Naturally, being a British company P&O were a prime target in Derek's sights and when he knew in 1991/2 that the Oriana was coming up, he pushed hard for the opportunity to tender. When that

opportunity came it was unusually rather non-specific: based on an outline of the owner's requirements, it seemed more to be an assessment of the bidders capabilities, rather than a cost submission. Indeed, such vagaries continued after having won the £2.1m design-and-build contract in November of '92. The size of the sum is indicative of the amount and level of entertainment equipment which is swallowed by a cruise ship of this class across the numerous performance spaces which passengers expect these days. Though design-and-build is a rather unusual arrangement, since design is usually a separate issue from supply in shipbuilding, Glantre subsequently found that although still working within the framework of the contract sum, as the design evolved, so the supply specifications changed. As Vic Dobbs, Glantre's technical director told my colleague Mark Cunningham: "All the way along we were in close contact with the users at P&O, so all the major product



The Theatre Royal - flagship venue aboard the Oriana.

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choices were agreed with them at the point of making the decision. Our project leader David Lee, and his colleague Rob Shuard, had the P&O people accompanying them at evaluation demonstrations at various suppliers, so that they could see for themselves the different options for equipment which were available." (Mark's article on the audio aspects of the contract appears in the current issue of our new sister publication *Sound+Communication Systems International*.)

The individual who would take the closest interest in all these developments would be David Llewellyn, P&O Cruise's head of entertainment, and nowhere would this interest be keener than in the development of the main theatre on-board - the Theatre Royal - which is a living testament to David's lifelong passion for the musical theatre and theatrical performance in general. He had already successfully created a repertory company on-board the Canberra in 1987 which has been running ever since. Now he knew he had the opportunity to extend that concept and to realise a proper repertory theatre, very much in the West End tradition, where scaled down but, nonetheless, real musicals and plays could be performed, rather than there being a show-lounge exclusively suitable for revues in the Vegas style. Thus, English theatre consultants John Wyckham Associates were called in to plan the space in co-operation with marine architectural specialists Robert Tillberg.

THEATRE ROYAL

The restraints of making such a design requirement fit into a marine environment were always going to be a frustration for the consultant designer, especially since he was not brought in until the vessel was already in the third year of design and when the size of the space had long since been fixed. Nevertheless, a visit to the vessel reveals the success of his input under David Llewellyn's benign influence. Wyckham was asked initially only to advise the architects on the seating layout and sightlines, though this quickly changed into a full commission to re-plan the entire space and all the facilities, and so it is extraordinary what has been achieved. Some battles were lost, like that for a double height space over the stage needed to create a fly-tower. "They told me it would cost £25m in lost cabin revenue over the lifetime of the vessel," Wyckham told me. And then there was the front stage lift designed to



The main control room for Theatre Royal.

extend the stage over the pit, but which ended up as a piano lift with infill panels, "an economy which I'm certain they will regret".

Other skirmishes were won, like the Krantz 'microclimate' AC system which generates cold air from the back of each of the 650 self-tipping seats in the auditorium through a plenum built under the rake. Thus the ventilation works the right way round with the cool air coming from below and the hot air being removed above, a UK first in any theatre, let alone one at sea. This system, and careful planning to eliminate external noise from elsewhere on the ship, has also had a major influence on the quality of the acoustics in the auditorium. Despite the size of this A.C. plant, the rake (which is, in fact, a series of long terraced steps giving good sightlines from every seat), created a space below the control cabin at the rear of the auditorium which Wyckham and Llewellyn insisted was kept open to be turned into a long-term wardrobe for up to 1,000 costumes.

From there the outfits for current performances are hoisted up on garment rails ready to wheel to the dressing rooms. The small production office behind the cabin which opens onto the store below had been called a 'storice' by David Llewellyn, to overcome any possible regulatory resistance, and the name has stuck. Behind the 10m deep x 10.3m wide stage, two large dressing rooms have been created in the wings, with two multi-purpose prop store/workshops, plus a scenery store and dimmer room behind - facilities which would be the envy of any cruise ship afloat today.

When on the stage, you quickly discover where the bulk of the stage machinery budget has gone, for in the middle there is an electrically driven 7m deep bi-directional revolve. To overcome the lack of hanging space over the stage, there are 30 scenery bars of which 12 are Triple E motorised tracks, plus eight Triple E hand-operated tracks, supplemented by Schnakenburg Nivotech bars which have been mounted by Glantre onto the deckhead only 3.4 metres above.

This system facilitates scenery which is split in half to be managed satisfactorily. There are two front-of-house lighting covers in the ceiling of the auditorium, four over-stage lighting bars, a cyc bar

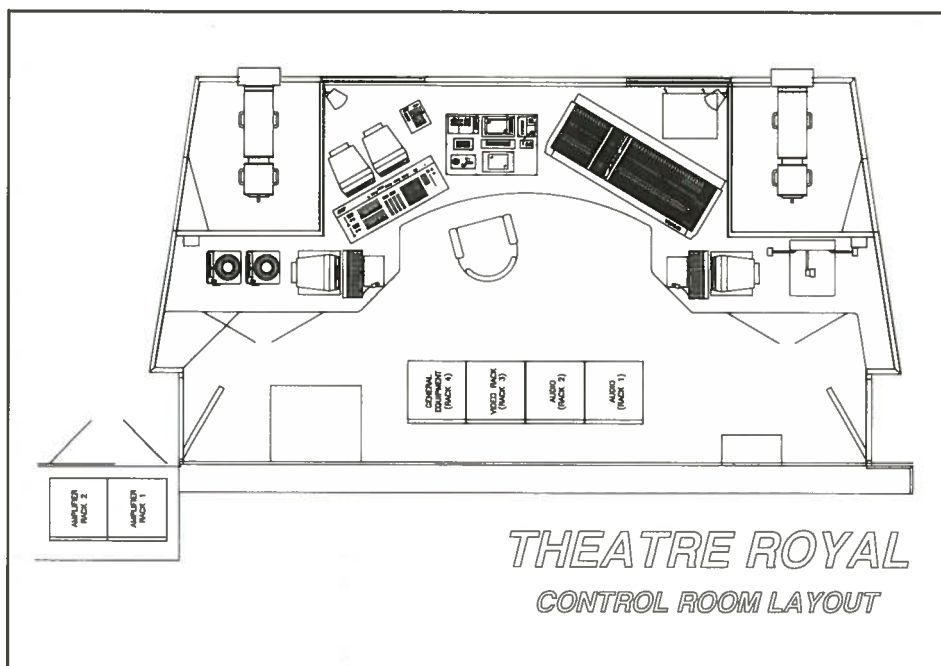
and six side-lighting ladders. There is both a cyc and footlight trough in the stage. These bars and troughs are populated with 180 luminaires, a mixture of ADB profiles and PCs, with James Thomas cyc lights and Par cans, some with Rainbow scrollers fitted. In addition, on the automated luminaire front, there are six Tas Mini Ultrascans, two Clay Paky Golden Scans and DHA have provided six gobo rotators.

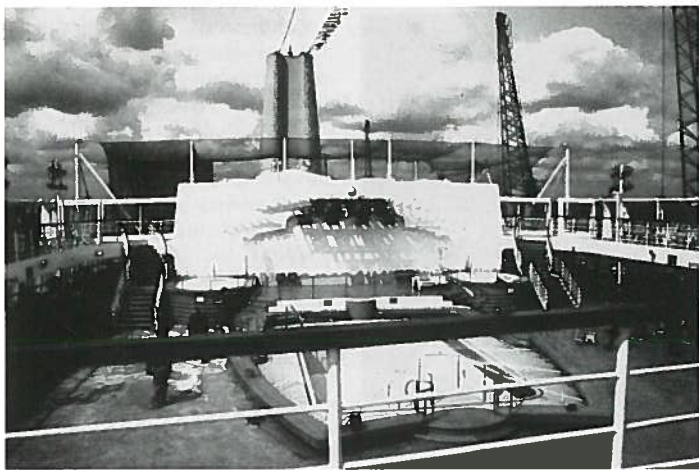
Other specials include Avitec 'quickstart' UV light battens, a Coe-Tech mirrorball, a handful of pinspots, four Avitec Par36 scanners, two Light Engineering 'helicopters' and four Anytronics strobe pods for Par cans. SFX are provided by Jem ZR20 smoke, and Le Maitre's pyrotechnic systems. There are two platforms either side of the glass enclosed control room, from which two Teatro Talento 2kW followspots with colour-changers are operated.

The requirement to manage the entire show under a single pair of hands, due to the pressure to preserve cabin space for paying passengers, governed Glantre's decision to recommend the Richmond Stage Manager show control system and an AMX touch-screen controller to co-ordinate light, sound, video and stage rigging cues and basically to run the show; with an Arri Imagine 3 and Axon Digital's ShowCAD with added MIDI card and fader controller, sending the cues to the lights and to the dimmers themselves. 144 dimmer channels of Arri Smartracks are employed for 360kW of dimming with an XTBA, DMX512 network, also using their DMX Splitter and Merge, to provide the data control. The 5kW sound system uses the Turbosound speakers recommended by John Wyckham which are powered by Crest P4801 amps, mixed from a 40 channel Soundcraft Venue II. There are 12 channels of Sennheiser radio microphones, an 8-track digital audio replay with eight channel click track system based on Tascam and Revox tape machines, and a Tecpro coms system.

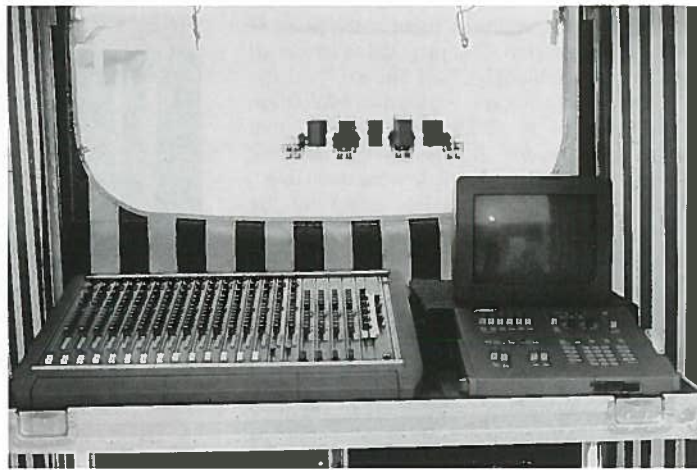
On the video front, P&O wanted to install a couple of 16mm film projectors which would have taken up considerable space, so Wyckham persuaded them to go modern with video. Three high resolution multiscan Sony VPH-1271QM compact CRT projectors were installed instead, the central one for movie transmission targeted to a 3 x 5.3m motorised projection screen from Harkness, the others to fixed screens concealed by doors in the mahogany panelling of the proscenium. Video enables the theatre to be multi-purpose as far as conferences, presentations or transmission of major sporting events, and all the main lounges on Oriana are flexible in this way.

The result of all of this combined effort between owner, consultant, architect and contractor is a really splendidly equipped theatre space in which ideal viewing proportions have been created for the





The outdoor stage - a potentially hostile environment for technology.



A Soundcraft Delta and Arri Mirage in the 'Punch & Judy' control tent.

auditorium with, most unusually for a ship, an almost total absence of columns; those which are there are so unobtrusive and out of the way as to cause no obstruction whatsoever. With 650 seats and eight wheelchair positions, two full-house performances are possible every night, thus entertaining two thirds of the 1800 passengers in two sittings. Already David Llewellyn is putting on shows such as *Buddy and Les Mis*, together with older shows such as *Hello Dolly* and *My Fair Lady*, as well as groups such as *Fascinating Aida*. Tillberg's interior design has created a plush West End theatre in traditional deep reds and maroon with touches of blue and gold, the latter used to good effect to create the two golden garlands based on reliefs of the twin Greek masks of comedy and tragedy above the two portals to the theatre.

PACIFIC LOUNGE

P&O were not so lucky with the columns in the Pacific Lounge, which is a show lounge cum nightclub, presenting cabaret, revues and dancing at night, which transforms to a multi-purpose room during the day. Following sea trials, three more columns than planned were added. "Unfortunately, they have appeared in less than ideal places as far as sightlines are concerned," bemoaned Glantre's Derek Gilbert. The room, designed by British architect John McNeece, consists of concentric rings of banquettes with tables and loose club chairs, tiered down towards a circular dancefloor with a curved stage apron in front, so the two can be combined for dance routines.

The performance lighting consists of 70 luminaires, basically a reduced specification from the theatre, employing the same manufacturers' marques, with 72 channels of Arri Smartrack dimmers. Control is provided by a 75 channel Arri Mirage and an adjoining Axon Digital ShowCAD which handles the special effects lighting consisting of Golden Scan 3s and a massive feature created from the erstwhile J Collons - Raflaflash.

Here, I must declare a special interest, for my own practice (Wynne Willson Gottelier - WWG) were Glantre's special effect lighting advisors for the project and we were responsible for specifying and integrating much of that equipment into the lighting designs for various room's schemes. McNeece had requested a special architectural lighting feature which imploded towards the centre of the room, and splashed back from its epicentre across the dancefloor. This was achieved with 81 Raflaflash DMX tubes, each 1.8 metres long and containing a total of 594 individually addressable Xenon lamps. These were concealed behind a fine mesh in the ceiling decoration to hide the worst excesses of the one joule flashes, and to meld together the flow of the movement. Thank God for DMX, and thank



P&O's head of entertainment David Llewellyn (left) with Ian Fraser, cruise director.

God for a controller such as ShowCAD, capable of soft-patching and programming such a complex system.

The speaker system consists of customised Community CXX-52 cabinets, supported by Bose Panarays on the backs of the columns, and throughout the lounge, to even out the sound coverage. The mixing desk is a 24 channel Soundcraft Venue II, sourced by 8-track digital audio replay machines. Two video screens are provided for alternative functions.

HARLEQUINS

Harlequins is more of a traditional nightclub space doubling as a discotheque, with a sizeable inlaid wooden dancefloor and a small stage. Again, the mix for the performance lighting is much as before with ShowCAD providing the control and Arri the dimming. This was really the first significant space on the ship where Glantre came up against the typical lack of headroom endemic in shipping and this created some problems over the oval-shaped dancefloor, especially since exposed speakers were verboten by the architect, once again John McNeece.

So Glantre devised an elliptical outer parapet in the ceiling, wedge-shaped in profile, and covered in acoustically transparent black scrim, which conceals both the customised Community CSX-52 dancefloor speakers and the Community CSV8 and RCF 'Monitor 8' speakers for the room, plus a curtain of light and six Tas Mini Ultrascans. Over the dancefloor itself, from an original WWG concept, 32 Martin Professional Robocolors and two Robozaps with Coemar Versatile Multirays are hidden behind a partially mirrored ceiling apparently suspended only by MR16 downlights so that they only become apparent when lit. A half mirror ball in the centre provides the topping on the cake.

RIVIERA POOL DECK

The other significant performance space is created on a raised area above one of the three swimming pools which also houses a Jacuzzi

on either side. These will be covered over to provide space for a small band and a troop who will perform David Llewellyn's *Tropicana Revue* under the stars once a week in sunnier climes. A limited demountable lighting rig and a flight-cased, trolley mounted lighting console and audio mixer which, in performance sit under a candy striped 'Punch and Judy' tent on the opposite deck, also provide spare equipment for other portable shows elsewhere on board. Weatherproofed speakers, Community VBS412s and RS220s, are permanently installed here, requiring additional protection against such a potentially hostile outdoor environment as a ship travelling at speed in a force 10 gale. "We asked James Thomas Engineering, who fabricated the hanging frames for the speakers, to make a special anti-spray filter assembly for the front of the speakers. It consists mainly of 50-75mm of fly-screen and foam, though the sound quality is not reduced by a significant amount, the ingress of salt water certainly is. We tested it with high pressure hoses!" Glantre's Rob Shuard explained.

This is a particularly attractive space and in some measure fulfils David Llewellyn's dream of "touring the show to the passengers". Rather than them coming to specific venues for staged performances, David would have liked to see the shows taken to them, but unfortunately space restrictions on the stages of the different rooms seem to have ruled that out for the time being.

One of the challenges to the provider of entertainment systems on board ship, is the fact that most rooms have to do the work of at least three equivalent land-based rooms, and Glantre have risen to the occasion well in this regard. There are many rooms with hidden systems, such as the karaoke and video replay system concealed behind panels in the otherwise genteel **Lords Tavern**. And in the lounge with the best panoramic view on the entire vessel, as you would expect with a name like **The Crow's Nest**, there is a small dancefloor with a music system and some very basic lights run from a Pulsar Masterpiece 108.

Naturally all such bars, dining rooms and the **Garden Court** atrium have music systems, both local and background, as do the officers' and crew messes, the background generally being delivered by Sound Advance CT10 wide dispersion recessed ceiling speakers. To keep the DJs fully occupied, and to keep the background music exciting, **Radio Oriana** broadcasts from the early morning until the entertainment programme gets under way later on in the day. Glantre kitted out the broadcast studio as well as providing portable video cameras and recorders for live CTV transmissions.

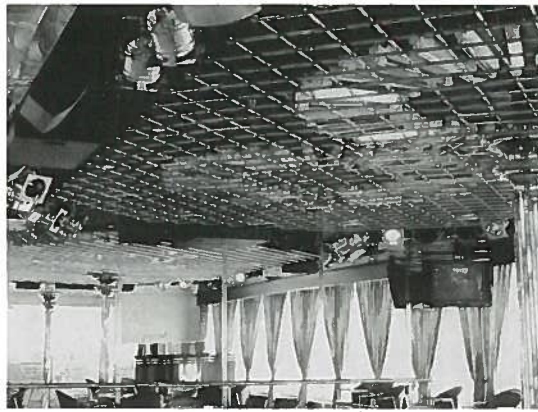
CHAPLINS CINEMA

Also a typical multi-function room, Glantre's contract included equipping the cinema which is to feature both wide-screen film, to enable screening of the latest movies, and high resolution video projection. Sound must have been quite an issue here for the room quadruples up for religious services, lectures, and simple theatrical presentations.

ENERGY (N-R-G)

This is another of these multi-purpose spaces, which doubles as an aerobics room during daylight hours and becomes a discotheque at night, an ideal combination since exercise freaks seem to need to pump up the volume while pumping their muscles and, it goes without saying, so do the disco habitués. Sounds are provided from a twin deck Denon CD player and Tascam DA30 DAT with 122 MkIII cassette player, mixed through a Biamp 'Club' mixer, which is also used in Decibels. As in Harlequins, speaker cabinets and lights had to be concealed, in this case in a net ceiling height of only 2.3 metres, so RCF speakers were used to deliver the sounds and powered by Crest amplifiers which were Glantre's first choice throughout the ship.

WWG's solution to the lighting problem, in view of the lack of headroom, was to recommend, as the main lighting feature, a figure of eight configuration of some 136, 600mm dimmable floorries in six sleeved colours. It was anticipated that this would have the advantage of providing animation and colour in an attractive configuration while occupying minimal height. Sadly, the end result was a compromise with two rings of only 36 floorries surviving. This, and other ancillary effects, are run from a Pulsar Masterpiece 108.



N-R-G - a room to pump to the volume.

DECIBELS

This is one room which is dedicated in its function - to teenagers - who notoriously need space of their own. Here Glantre, with input from WWG, have created a mini disco-based on a Wurlitzer-style 66 CD juke box, inevitably called 'Route 66', supplied by Sound Leisure, so that the kids can chose their own music. This is linked to the sound system and the lighting rig which consists of a couple of Tas Mini Ultrascans from Coe-Tech, six Martin Professional Robocolor IIs, two Coemar Versatile Multirays and 1 Guzzini MR16 downlighters, run from a Masterpiece 108.

One other interesting feature is the large Pioneer 50" rear projection television for which WWG recommended Alex Bloc's, 'Son of Bit Bopper' video effects generator based on the Atari computer. Known in Europe as Vibravision, and supplied by Coe-Tech, its appearance on board ship is the culmination of a long effort to bring this innovative product to

the attention of the market-place, which seems to have temporarily lost faith with the great future potential for video. I blame the tedious combination of pop promos and standard videowalls for the great turn-off myself - so stand by for a great resurgence of video in future.

Cleverly, Glantre built a special frame around this screen to house both sub-bass and full range RCF cabinets, so the sound focus is ideal whether, or not, the video system is working.

So, some 420 drawings, and two-and-a-half-years later, including 13 months spent cabling and installing at the shipyard in Pappenburg, Germany, and several unpleasant weeks at sea trials in poor weather conditions - Glantre have

developed into a full blown turnkey contractor for marine entertainment systems and now have two teams of six people working on not much else, under the helmsmanship of Derek Gilbert, and are taking on both consultancy and supply contracts. They seem perfectly placed to score heavily in what has become a boom market area and David Lee's team of Rob Shuard, Dane Cookson, Ceri Barraclough and their man at the shipyard, Ted Lee, are to be congratulated on a job well done.

While the boom in cruising may mean that L+SI could be writing about a new cruise ship in virtually every issue, the Oriana is still, not only the first new ship built for a British company and for the British market for many years, but also the only one which is planned for that purpose. Readers abroad will, therefore, understand a British magazine sponsored by a British trade grouping being nationalistic, and wallowing in self congratulation while waving the red ensign, on this one especially.



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A FAIR EXCHANGE

Robert Halliday describes the installation of a new sound desk for the Manchester Royal Exchange

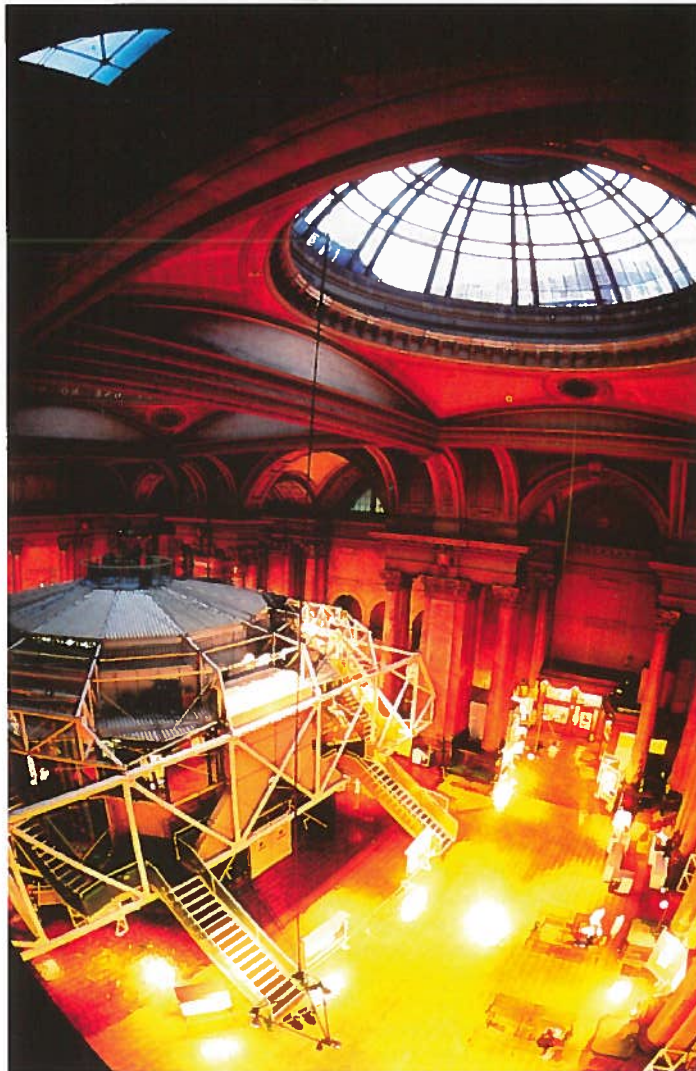
The Royal Exchange Theatre in Manchester is undoubtedly one of the most unusual performing arts venues in the world. Judging its effect on people discovering it for the first time is easy - you simply watch the awed look on their faces as they climb the stairs up to what should just be a vast Victorian hall, and discover a glass-and-tubular-steel UFO hovering inside.

The theatre came into existence largely because of the main factor that affects all theatrical decision making in this country: lack of money. During 1968, the 69 Theatre Company was formed by a team including the director Michael Elliott, Casper Wrede, Braham Murray and Richard Pilbrow. Performing at Manchester's University Theatre, the 69 quickly established a high standard of work with a diverse range of shows featuring performers such as Tom Courtenay, Zoë Wanamaker, Brian Cox and Vanessa Redgrave. But their work was hampered by having to share the theatre with other university departments, and so thoughts turned to creating a new theatre in the centre of Manchester.

Work to raise over £1million and to obtain a suitable site didn't achieve a great deal of success, but during that time, a member of the theatre company's council, Peter Henriques, remembered the disused hall of the Royal Exchange. Opened in 1921, the hall was the city's fourth Exchange hall, a meeting place for its industrialists and traders. It covered 1.7 acres of ground and was topped by six huge glass domes reaching 120 feet above the floor, and on the 22nd December, 1940 it had been hit during a German air-raid on Manchester. By bizarre chance, the bombs cut the building neatly in half; the construction of one wall was all that was needed for a slightly smaller hall to return to action. As Manchester's importance in the textile industry declined after the war it became clear that the remaining three-quarters of an acre was perfectly adequate and the rest of the space was converted to offices.

A decade later, with membership falling further, the Royal Exchange Company was sold just before work started on redeveloping the hall into more offices. Ten years later the building was sold again, to Prudential Assurance, who were quite content with the income from the shops and offices on the site and didn't really know what to do with the huge space. Thus on 31st December 1968 - the same year that the 69 Theatre Company was born - the doors to the hall were closed.

It lay empty until 1971, when the 69 Theatre Company team visited it - and director Michael Elliott and designer Richard Negri became captured by the hall's scale. But it also solved a more practical problem - by building inside the Exchange, the hall would serve as a foyer



The Royal Exchange Theatre in Manchester.

with a grandeur that would be impossible to build from scratch, while at the same time reducing the cost of the project as a whole. Designer Richard Negri began experimenting with auditorium designs; experience with his and Elliott's productions together and their dislike of the traditional proscenium arch led him to create one of Britain's few 'theatre-in-the-round' auditoria. He then worked with the project's architects, Levitt Bernstein Associates, to create the Royal Exchange as it is today.

The final auditorium is not quite as Negri originally envisioned the project: he saw a drum-like structure standing freely in the centre of the hall. But the hall's floor would not take the weight of such a theatre with a full audience, and so the Royal Exchange that exists today came into being. The 'module', which holds around 700 people spread across three levels, is actually suspended above the floor by a huge square outer trusswork of tubular steel which transfers the weight down into four pillars around the outside of the hall.

One other consideration during the design of the auditorium was the problem of sound in the theatre. Early discussions had suggested that the auditorium should just have open circular seating, since the hall would provide the roof

to keep Manchester's notorious weather out. However, the acoustic of the roof with its 120 feet high glass domes, which give the hall a reverberation time of somewhere over seven seconds, made that impractical. The theatre module thus became a roofed structure with a separate acoustic, although one that would be linked to the acoustic of the hall as the module's doors opened and closed to allow actors in and out.

The renamed Royal Exchange Theatre Company opened at their new venue in 1976, and the theatre and the company met with great acclaim. They have continued to build this reputation ever since, through a huge range of shows including the premiere of Ronald Harwood's *The Dresser*. To many people, the success of the theatre has stemmed from the fact that it does one style of theatre - theatre-in-the-round - very well, rather than being an adaptable venue that does several styles of theatre badly. That is a result of Michael Elliott and Richard Negri's commitment to the form - perhaps strangely for a set designer, since the result is a theatre that demands rather less from its sets, and rather more from its lighting and sound than a traditional pros-arch theatre.

Solving the sound demands is a problem that has recently fallen to Steve Brown, now the theatre's head of sound. Sound designers in the building have two problems to work with: firstly the fact that the theatre is in-the-round, and secondly, the acoustic of the Exchange hall. Having spent most of his career working in Britain's touring pros-arch houses and at the National Theatre, Brown is still adapting to his new venue, admitting: "I still find it difficult, since any left/right sound is out of the window. You have to stop thinking in a pros arch way, since everything is relative to where you are sitting."

Brown and sound technicians Colin Renwick and Ian Dickinson do now have a powerful new weapon to help solve the sound design problems in the venue: a custom designed Cadac mixing desk conceived and designed by the Exchange's former head of design, Phil Clifford, who was with the company for around 12 years. Until last March, sound in the venue was mixed using a 20-year-old Neve 5316 24/8/2 mixing desk bought second-hand from the Royal Opera House. This was starting to suffer from age, though, and so around three years ago Clifford began to plan its replacement. His experience in the theatre suggested several things to him. He knew that the theatre's in-the-round nature meant that sound effects relating to actors entrances or particular actions on stage needed to be very precisely located in relation to those actions. This meant that the ideal desk would have a small number of inputs routable to a large



The Royal Exchange's production of *Charley's Aunt*, directed by Emil Wolk.

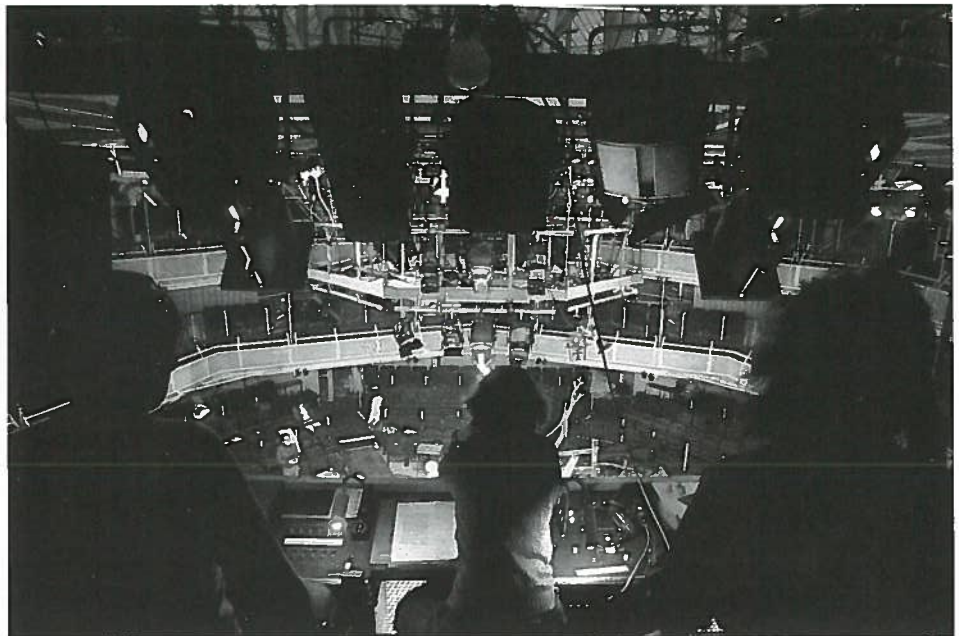
number of outputs for speakers in different locations.

He also knew that the Exchange did occasionally present musicals, with all of the associated radio mic and effects machine technology; for those shows the desk would need a large number of inputs and, because loudspeaker set-ups for such shows usually had large numbers of speakers arrayed in a fairly simple fashion, comparatively few outputs. Finally, he and colleagues Rebecca Watts and Robert Tice realised that any new desk would have to fit into the same space as the Neve - in the technical area on the first raised seating level that was shared with the lighting control and the DSM.

Discussions with his team and colleagues from outside the venue led him to one idea: a desk in which every module could be switched to act as an input, a bus controller, or an output. No such desk existed, but the Exchange's management agreed to at least investigate whether anyone could build one for a reasonable cost. The only company who were really interested, unsurprisingly given their reputation for producing desks that meet the demands of theatre users, were Cadac, where Clive Green and Tony Waldron were prepared to discuss Clifford's ideas in detail.

The process met a hitch just as Cadac were about to start detailed design on the desk, since a financial crisis at the theatre meant that they could no longer afford the work. Three months later Clive Green suggested an alternative, cheaper way of approaching the problem and the Royal Exchange agreed to proceed with the plan to provide what Phil Clifford describes as "the equipment that we needed, rather than what we might put up with."

Design, construction and testing then proceeded, with the finished desk finally being installed in the Royal Exchange during one long weekend in March this year. The finished product matches Clifford's original suggestion very closely. It contains 40 modules, each of which has a rotary switch that allows it to be selected to be an input, a group controller for any one of 10 groups, or an output. Each module also contains Cadac's usual high-quality fader and EQ system. To fit all of this into their standard module size, Cadac made use of surface mount technology, along with sub-miniature relays to handle all of the routing. The two surprises, given recent trends



Overlooking the main performance area from the elevated control position.

in sound desk design, are that the desk contains neither a matrix nor any form of computer-controlled automation. These even surprised Steve Brown when he first encountered the desk, though he has now grown to understand the thinking behind their exclusion. "I was a bit shocked that there was no matrix, but this is because there are so many positions for speakers. Being in-the-round we can have speakers anywhere, even in the set if you can hide them from an audience which is, 35 feet from the stage at most, and often much closer.

"If we had a matrix we'd be limited to the number of outputs we could use. With this desk we could have 38 outputs, one group and one input; we wouldn't be able to do that with a matrix. And I'm quite happy not to have any computerisation - the theatre is an open space and, although security is good, if we had a couple of PCs up here, they'd go and we'd lose a show. We can't afford to do that."

Having just completed his first Royal Exchange design, for the production of *The Colleen Bawn*, Brown has come to appreciate the thought that Clifford put into the desk, and to understand some of those thought processes.



The theatre's studio, with head of sound Steve Brown.

"I've learnt a lot in the past couple of weeks - the next show I do here, I'll do differently now I know more about the desk. It's nice to have the flexibility to do certain shows one way and with other shows take a different approach."

If Brown is excited by the desk's potential, sound technicians Colin Renwick and Ian Dickinson are still excited about its sound quality. The Cadac was installed in the middle of the run of a show and even during the re-plotting session the desk's quality became clear. "You could tell the difference straight away - we had some music coming off CD, and it just came to life. The dynamics were apparent immediately. When we replaced our old NAB cartridges running through a Dolby system with the digital DART system we thought 'wow this is brilliant'. When we put them through the Cadac it was 'wow' all over again!"

What the technical team didn't get, which some other new Cadac users have suffered, is the shock of discovering noise from outboard processors revealed by the desk because, as Steve Brown explains, "we haven't got any outboard gear!" The permanent sound system, devised by Phil Clifford, takes the sound from the desk out to ProAc speakers on the front of each of the seven balcony faces in the auditorium, with each speaker thus carrying sound 'through' the acting area to the audience opposite it without the delay units that might have been expected.

Brown had anticipated the lack of outboard gear being a problem on *The Colleen Bawn* because "unusually, for here, we have three float mics around the circle front to relay sound to people sitting behind the live pianola that features in the show. I thought we'd have to get graphics, but the EQ on the Cadac handled things really well, so we decided to run it all through the desk."

Despite the new desk, operating Royal Exchange shows remains a challenging experience, since the operator never hears the show from the perspective of most of the audience. As Renwick explains: "a major part of operating a show is knowing the building because certain sounds perceived at the control position are perceived very differently on the opposite side of the auditorium, and an instrument being played outside one side of the auditorium also sounds as if it's being played from the mass of the hall because it's so reverberant."



The Cadac desk at the mix position with technician Lyndsey Wilkinson.



Eamon Kelly and Alison McKenna in *The Colleen Bawn*.

"It's sometimes quite hard to get a grasp of what's going on, but you usually sort that out during the technical week - people wander around, you get notes and you build up a picture in your mind of what it's supposed to sound like so that you can interpret what you're hearing at the operating position as the correct thing. The reward is that, with audience members sitting right next to the sound desk, you get feedback from the audience - they say 'thank you' and they're thanking you as well as the cast, which is nice!"

In *The Colleen Bawn*, Brown along with director Garry Hynes and musical director Paddy Cunneen, added to the complexity by using the acoustic of the whole hall, having instrumentalists playing as they moved into and out of the theatre and leaving some of the theatre's doors open throughout the show.

Brown heightened this by rigging speakers up in the hall's dome and using rifle mics inside and outside the auditorium to take sounds out into the hall's natural 'reverb' system, to very good effect. With the new desk up-and-running, the sound team's attention has turned to the rest of their equipment. Although money is tight, the theatre's amplifiers and speakers are starting to wear out and will need replacement before too long - the current 'next stage' appeal for £500,000 to refurbish parts of the building shows that it is not just the sound equipment that is feeling its age.

In the meantime, the team have completed a lightning refit of the theatre's recording studio (as Brown explains: "the theatre only goes dark for four weeks a year - either you wait until then, or you try to do things when you can") adding an Akai S3200 sampler to a stock that already

includes a CD-recorder and an effects CD-jukebox system, which allows designers to select an effect and have it automatically retrieved and played from a jukebox of effects CDs. The aim of the refit was to make life easier for the guest sound designers that the theatre employs - "by bringing in equipment people are familiar with, they have no excuse to go away, since they can bring their own samples and work here," Brown notes.

The only person missing out on all of this is former head of sound Phil Clifford, who took up a new position at the State Theatre, Pretoria shortly after the new desk arrived. That the desk he conceived is functioning so well is a tribute both to his experience, and to the tradition of designing things to function well at one specific job that led to the creation of the Royal Exchange itself.

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ON TOUR

by STEVE MOLES

AND PRODUCTION NEWS

Simple Minds

Sheffield Arena

LD: Steve Pollard

SD: Gary Bradshaw

Maybe it's just me, but Simple Minds seem to have been out of the limelight for a while now. The single 'Mandela Day' was quite a big hit for them last year, but touring-wise they've been keeping a low profile for at least a couple of years. Whether I'm right or wrong mattered not one jot as far as the crowd were concerned - this is the fullest I've seen the Arena since Christmas and they all bounced away for a full two hours.

Steve Pollard, the band's long-standing lighting designer, acknowledged that there was a real desire within the band to draw back: "To get away from that Stadium thing, to regroup and do a bit of a retrospective." From this performance, it certainly seemed they had gauged their fans' mood correctly: the set list was full of old standards and the crowd lapped it up.

LIGHTING

Steve's realisation of set and lighting design, however, was quite different - different in that there was definitely a very striking lightshow going on, and simultaneously there was a band performing on stage, but the two remained separate and detached.

The set (built by the ubiquitous Charlie Kail and Brilliant Stages) was simple: two square risers angled on to each side of a central, circular platform. A narrow walkway encircled the rear of this central feature and ramped down either side to the front. All was thickly coated with a mixture of hessian strips and matt black paint, giving a thickly textured look, and then highlighted with ragged-on gold paint. The effect was delightful, and completely invisible to anyone more than 10 feet away.

Behind this, some 20 feet upstage of the performance area, hung the entire lighting system - basically, a simple rectangular box truss which concealed a good deal of technology. Two cross-stage trusses, both articulated at several points, were hidden within the rectangle, and moved at various junctures during the show. One was loaded with LSD Icons and the other with Clay Paky Superscan Zooms.

Steve was very restrained with truss moves in the early part of the show, the first coming in the eighth song 'Big Sleep' when the Icon truss was both lowered and raised in the darkness each side of the song. By using only the lamps on the moved truss and front of house spots (four Strong Gladiators) for this song, it was never obvious where these lamps appeared from, and it was not until much later in the show that we actually saw the truss lower in.

The rectangle also sported a pair of towering upright trusses front centre. Some 50 feet tall, they were festooned with further Superscans. (In total Neg Earth supplied 112 Pars, all with Rainbow Colour Changers, 38 Superscans from Christie Lites in Canada and subcontracted 16 Icons from LSD). These towers formed the motif that characterised the style of Steve's design: "It's that old dramatic thing about looking more impressive in a doorway than the middle of a courtyard - like Hitler at the Nuremberg rallies, it's having something big behind you but being exposed,



Above and below, Simple Minds - once again back in the spotlight.



framed in front of it." The effect, it must be said, was very pronounced: the lighting system often resembled the Germanic eagle rampant - the towers its upright body and the rectangular truss its wings. The effect was enhanced by the Pars which were carefully focused for this purpose rather than to light the stage. Every one of the 112 Pars in the system were single-hung, a pain for the crew, but visually, probably worth the effort.

Steve ran the show from an Avolites Diamond II - all the Superscans, Pars and the 180-odd colour changers (there were some unusual 4 x Par 36 strip units from Christie Lites in Canada around the risers which also had colour changers) from this one board alone. He was assisted in this by crew chief Dennis Gardner. Ian Cameron ran the Icon board: as this was his first outing with the system he also had an assistant, Mark 'the Pope' Payne. Apart from the occasional mid-show programming update (this was only the second show since rehearsals), both men seemed quite at ease with their boards and found time to keep the Joss-sticks burning.

SOUND

Sound-wise, the show was a far more conventional presentation. The Martin F2 PA

system supplied by Capital Sound was almost a normal arena array, except for a new flying frame being tried for the first time by front of house engineer Gary Bradshaw. The new frame allows for a much tighter wrap - Gary had the frames positioned furthest off-stage on each side to improve coverage to the bleacher seats immediately beside the stage.

He was hoping to mix from the new Midas XL4 (a snip at almost £50,000) but they were unable to deliver in time. Keith Davis (Capital's owner-manager) was instead obliged to sub' in a Yamaha PM4000 courtesy of Cane Green, as much of Capital's front-end equipment has been gobbled up by Take That for their current jaunt around Europe. The Midas would have been a bonus," said Gary, "as we are recording all the shows live from the desk onto four Tascam DAT machines (32 tracks in all). The Midas has enough spare inputs to let us play it back, but with the PM, unfortunately, I've used them all up."

The mix was generally very bright, if, dare I say it, a bit thin about the middle sometimes. But the rich timbre of Jim Kerr's voice, so distinctive a part of the band's sound, was there in full colour. Simple Minds' songs often tend towards the anthemic, and, not surprisingly, the audience are only too willing to sing along to many of them. The full keyboards and chorused vocals, coupled with audience participation could potentially give rise to mush, but Gary's mixing technique deftly avoided this.

The separation between band and lightshow, did, in the final analysis, actually seem to work in a perverse sort of way. The musical content was in many ways one-dimensional: that is, Simple Minds are a very stylised band with their own distinctive sound. Having the lighting *behind* the group as it were, added another dimension to what could have been a rather monochromatic performance.

Prince (as was)

Sheffield Arena

LD: Justin Collie

SD: Rod Price

"On record a slave, in concert free," was, I believe, the gist of the rather fractured acceptance speech that the artist, formerly known as Prince, made at the Brit Awards in February. This publication is not the appropriate vehicle to weigh the arguments surrounding the confines of his recording contract, but it is worth noting that the dispute is affecting other areas of this man's performance.

'The Boss' (as his road crew and band refer to him, and as I shall for the rest of this piece rather than the cumbersome the artist formerly . . . etc), has produced seven albums in this past year, only one of which his record label have seen fit to release. The stand-off has led to a situation where The Boss will only play his unreleased material live, and his record company will only give a tour financial support if current releases are performed.

Thus, for the first time ever, he is having to confront financial constraints on his live show as he dips into his own reserves of cash. The Boss's shows have, in the past, been characterised by outrageous showmanship and wild extravagance: the Love Sexy tour grew from 15 to 17 articulated lorries while in residence at Wembley a few years ago. This time around, the production has been forced to shrink by four trucks (from 13 to nine), while at the same venue. Such fiscal pruning might be vengeful relief to the many accountants who have foundered upon the rocks of The Boss's wanton whims in the past, but is it art?

SOUND

Despite the financial constraints, there is still some probing going on at the edges of what might be considered prudent in terms of the sound set-up. There is no front of house engineer: there is, in fact, no sound engineer at all. The Boss mixes house sound from within part of the stage set.

Beneath 'the womb' as the central structure of the set is known, lies his on-stage dressing room and contained therein is a Paragon 40-channel board and a pair of good quality hi-fi speakers. During the day the Boss may configure sound for what he believes is best for the hall they are in, and spend some time on the stage monitor sound system for which he is also responsible. Once the show is underway, he will, from time to time, pop in and alter his basic set-up, but obviously what he can do, and particularly what he can respond to, is limited. Not surprisingly, things have got a bit hairy on occasions. Hugh Richards from Britannia Row (who are providing the Turbo Flashlight system), has definitely gained a few grey hairs since last we met. By the time the tour had reached Sheffield, an agreement had been made.

Much to the relief of the sound crew, Rod Price had been appointed audio technician and, with the help of Hugh out in the house on intercom, he was permitted to enter the womb and make adjustments. As yet, this is not a perfect arrangement: partly because the Boss will still come in and negate all the finessing that Rod has subtly applied to the mix, and partly because the crew would undoubtedly prefer a desk out front with Rod driving it, and preferably a slightly more robust touring board than the Paragon that is currently being used, which is desperately due for a thorough 60,000 mile service.

That being said, this little coterie of sound mix contributors made a pretty good fist of it. When the band mounted the stage for the start of the show there was the cacophony of burps, farts and whistles you might expect from an unrehearsed garage band at their first gig, but like a symphony orchestra tuning up, all was soon silence and then suddenly, at the tap of a baton, we were off. The



Prince, Symbol, Boss, sound engineer - call him what you will - on stage with his womb.

PA groaned into life like a big steam engine unable to apply all its power initially as its wheels spun on the tracks and the first couple of bars seemed to grow in stature, almost as if channels were one by one being un-muted. Within barely 20 seconds we were full-tilt roaring along with a thick and bluesy song 'Down in Mississippi'.

Frantic communication took place twixt Hugh and Rod in these opening moments (only to be expected under the circumstances), and the mix was decidedly top and bottom with no middle for some time, but things quickly settled down and then only the occasional tweak was required here and there. One exception was that some, but not all, of his guitar solos seemed to have volume applied indiscriminately, at the expense of all other constituent parts of the mix. But maybe that's exactly how he wants that particular passage of his music to be heard.

The difficulty of what is being attempted here is not the concept, but the implementation. Never known as a particularly approachable individual, the Boss is now learning that he can achieve what he wants, but he needs to tell a few key people what that objective is. He receives a live video of the show every night (courtesy of Creative Technology who provide live footage for the audience) and uses it to critique every department of production. With such a sensitive issue, much patience and diplomacy is needed to suppress personal influences. It says much about the Britannia Row crew that they have done so well already.

LIGHTING

There have been some upheavals in the lighting department as well, but perhaps not quite so challenging. Justin Collie is now firmly in the driving seat as designer, Roy Bennett having graciously handed on this mantle. Justin, with his previous experience as board operator, is at least well prepared for the pressure this post involves.

Following the production cuts at Wembley, the lighting system has emerged virtually unscathed - what has been slashed heavily is the set. The central womb was at one time flanked by huge effigies of male and female genitalia: now, with these removed, Justin has been obliged to re-plot a great deal of the show.

The rig is quite unusual; for the stage there is a curved truss high and far behind the set sporting a backdrop (a hastily added painted cloth of buildings from the fantasy genre). Immediately behind the stage sits a 30 foot truss span on super lifts at just above performer head height, and, to the front of stage, a short spot truss. There is no lighting system at all above stage, thus a quite stark

look is made uncomfortably thinner by the missing pieces of set.

Justin has 44 LSD Icons and 28 High End Cyberlights to play with, plus 23 Molemags, 42 Terra strobes and 8 Terra fridges complete with Molemags. Most of the strobes are festooned around two further trusses out in the hall for audience lighting. There are six Par 64s in the system, tucked in around the upper section of the Womb where Mayté Garcia performs some of her tireless erotic dancing. One of the big problems for Justin was where to put the lamps that used to be mounted on the missing set pieces. Some now hang from floor stands and are draped with a gold PVC fabric (a copy from a pair of the Boss's stage boots, would you believe), while others are in clusters around the floor. To be honest, they look terrible close up and do little to disguise the fact that they were placed there as an afterthought. However, with so much of the band's gear draped in this cloth or clad in perspex, the stage is glitzy enough to make the lamps barely noticeable from the house.

Justin's light show is atmospheric: the Boss is one of those performers who is carried along by his audience, and so much of the lighting plays out to the crowd. (This need to see the crowd got a little out of hand at one point when the Boss called for the house lights to be put on, which quickly dampened the crowd's enthusiasm). The strange, or rather unconventional, distancing of the lighting system from the stage aids the creation of atmosphere - the lighting was very much in the house, as opposed to on the stage. What many there will not have realised is just how far the lights are integrated into the music.

The biggest difficulty Justin had to overcome was the Boss's insistence on linking the Icon board to a MIDI interface from stage. From the post-show video critique, it emerges that some of the cues from stage never come, or come at the wrong time. For this reason Justin has the ability to override the MIDI cues, but woe betide him if he fails to catch the ones that the Boss knows are there!

For both the major show production disciplines, lighting and sound, this was a demanding show. In both instances there were some glaring cock-ups caused by the strange operating circumstances and not, it must be underlined, by poor operation.

The show itself was a success as judged by the audience, which is remarkable when you consider all these new practices being tried. It is all the more remarkable, however, when you consider that no songs by Prince were performed at all. Before the end of the show, the Boss took the opportunity to thank the crowd for 'letting me put Prince to bed', or was that 'death' he said?

EQUIPMENT NEWS

Digital Manager

Turbosound has introduced the LMS-700 loudspeaker management system. This is the successor to the LMS-780 Flashlight loudspeaker management system.

The unit offers certain specification enhancements over the basic version: IC's in the analogue audio path have been upgraded to optimise audio performance with Turbosound products, and the unit includes transformer balanced outputs as standard.

The LMS-700 is supplied factory-loaded with software to operate Turbosound Flashlight sound reinforcement systems. It also offers support to existing users with the inclusion of programmes for the TMS and TSE Series enclosures, as well as for TCS Compact systems and TFM Monitor systems.

The unit combines two channels of 4-way crossover, parametric equalisation, digital delay lines and limiters. Turbosound will be offering LMS-700 users an on-line technical support programme covering future software upgrades and shared user information.

For further information contact the company in Partridge Green, telephone (01403) 711447.

AT Studiophones

Audio Technica have introduced two products to complement their already substantial range. These are the ATH-M40 and the ATH-D40 studiphones.

The ATH-M40 has been manufactured specifically for the professional monitoring and mixing market. It has a flat, extended low frequency response to 5Hz, which is designed to ensure an accurate and precise sound reproduction. The ATH-D40 features an enhanced low frequency response from approximately 20Hz-500Hz rendering it suitable for use with predominantly low frequency sound sources.

Both studiphone sets have 40mm diameter drivers and neodymium magnets with copper-clad aluminium wire voice coils, and can deliver 1600mW of power.

For further details contact Audio Technica in Leeds, telephone 0113-2 77 1441.

Soundcraft DC2020



Soundcraft has launched the DC2020 recording console, available in 24, 32 and 40-channel in-line formats, boasting semi-parametric EQ, six auxiliaries and Soundcraft's floating bus routing system.

The C3 (Console Control and Communication) automation encompasses fader and mute control, machine transport and record controls, on-line mix editing and project management, with facilities which will appeal to the commercial post-production facility.

For further information contact Soundcraft in Surbiton, telephone (01707) 665000.

Two Meyer Additions



Meyer Sound has launched two compact new speakers - the UPA-2C and the UPM-2 - augmenting its already considerable array of high performance sound reinforcement products.

The UPA-2C UltraSeries loudspeaker is a compact, rugged bi-amplified unit which offers comparable sonic performance to the established UM-1C UltraMonitor. Comprising a 12" cone low frequency driver and a 1.4" throat high frequency driver in a vented cabinet, the UPA-2C is suited to theatre applications, as well as clubs, churches, paging systems and as side-fills in concert sound systems. The UPM-2 UltraSeries loudspeaker is designed for high performance installations where space is minimal. Key features of the UPM-2 are its HF directivity characteristics, providing controlled coverage within localised listening areas.

For further information contact Meyer Sound Europe in Reading, telephone (01734) 755533.

Yamaha's New Mix

Yamaha have introduced a new compact mixer - the MM1402 - a compact unit that offers professional features and audio quality normally the preserve of big consoles.

The MM1402 has a total of 14 inputs - six mono and four stereo, plus two stereo aux returns, and a stereo sub input for another sub-mixer or stereo instrument source. All input channels have smooth linear faders and PFL solo switches. Mono channels have XLR connectors with +48V phantom power, 3-band EQ plus gain and pan. Two aux sends, one pre and one post-fade, are provided for effects and stage monitor mixing.

For further information contact Yamaha in Milton Keynes, telephone (01908) 369269.

Painting with Colours

Wildfire Inc has released a new line of water-based acrylic fluorescent paints, designed for maximum brightness under UV or blacklight.

The paints offer 10 standard colours, including a true optical white, plus three invisible colours that go on as white and take on colour under UV illumination. The standard colours maintain their colour in both normal light and under UV light. Also offered is a glow-green paint.

For further information contact Wildfire Inc in California, telephone +1 (310) 398 3831.

Towards 2000 Cue

Towards 2000 have released a new integrated DOS programme for Intellabeam, Cyberlight and Emulator programming.

The Execue provides a straightforward solution to automatic playback of cues or presets pre-programmed in an LCD or LED controller. A playback facility ensures that the cues are played back at the same time as originally recorded. The user can edit cue times for fine-tuning the playback sequence without having to re-record the whole set.

For further details contact Towards 2000 in California, telephone +1 (818) 557 0903.

OCLI add Colours

OCLI Optical Coatings Ltd is expanding its range of standard Dicro filters for intelligent lighting by adding a new colour each month for the next six months. The 'colour of the month' for May is a deep turquoise green, designated Green 208.

For further details contact OCLI in Fife, telephone (01383) 823631.

New VP3 from Shure

Shure's new VP3 Wireless Systems are outfitted with features such as mirror imaging, audio processing, separate squelch and monitor adjustments.

The VP3 portable receiver is powered by a 9V battery which provides seven hours of operation. The antenna position can be adjusted to maximise reception.

For further information contact HW International in London, telephone 0171-808 2222.

Logic Software

Soundtracs have released a proprietary software package to make on-board automation on the Solo Logic easier to use.

The Solo Logic Display Software provides at a glance indication of the position and activity of all the channel faders and the channel, monitor, auxiliary master and effects return mutes on the console.

Designed to run on an IBM compatible PC under Microsoft Windows, the package also simplifies loading and saving of mixes and provides a MIDI Timecode Display and a MIDI activity meter. It can be configured to any size of Solo Logic and only requires a minimum hardware configuration and an MPU-401 compatible MIDI card.

For further information contact Soundtracs in Epsom, telephone 0181-388 5000.

MA Cue Card

MA Lighting of Eisingen have recently introduced a Cue Card Reader/Writer which allows programmes to be transferred to a computer and filed on the hard-drive, or transferred from the computer back to the card. The device can be connected to XT or AT computers or notebooks, via an RS232 interface.

For further details, contact MA Lighting in Eisingen, telephone +49 5251 1432 10.

Pani UMC

Pani has developed a series of accessories for their projection systems, including the A-32, and the AS-100 image scroller. In tandem with these developments, Pani have also released the PAL UMC (Universal Media Controller) - which can be used to run these image change devices so that everything can now be controlled from one source using an Apple Mac.

On a video monitor, UMC offers operation of all remote control functions of the projection system, creating not only the ability to select slides, but also the option to control fades (intensity), roller position or speed.

For further information contact Pani in Vienna, telephone +43 1 521-0834.

EX Power

After recent improvements to the EX 4000 power amplifier, the flagship of QSC's top-rated line now packs FTC ratings of 800W and 1200W respectively into 8 and 4 ohms per channel, and 2400W bridged into 8 ohms. The upgraded EIA specs are now typically 825W per channel at 8 ohms, 1250W at 4 ohms, 1600W at 2 ohms, and 3200W at 4 ohms bridged. For details contact QSC Audio in California, tel +1 (714) 754 6175 or HW in London, tel 0171-808 2222.

Tough Rack

CP Cases has recently added 4U and 6U sizes to its anti-vibration Pro-Rack range of 19" rack cases.

The cases are manufactured from Finnish birch plywood to which vulcanised fibre is heat bonded. The lightweight pre-stressed steel frame is suspended by eight anti-vibration mounts fixed to the outer case by steel support brackets.

For further information contact CP Cases in Isleworth, telephone 0181-568 1881.

DHA Varispeed

The latest addition to DHA's Varispeed range of moving effects is the DMX DC controller.

Slightly larger than the MK4 DC controller, it maintains all the motor drive features of the MK4, but has the advantage of being able to control the speed and direction directly from any DMX lighting desk. Effects can be programmed straight into a cue sequence along with the standard lighting cues, with up to four Varispeed units being controlled by only eight DMX channels.

This product will soon be followed by the DMX Digital Light Curtain, which is due to be officially launched at PLASA this September. A prototype is currently in use in the Frankfurt stage production of *Tommy*. The new light curtain is the same as that which is used with DHA's Apple Macintosh-based Light Moves software, with the new DMX unit acting as interpreter to convert the DMX signals into Light Talk commands.

For further details, contact DHA Lighting in London, telephone 0171-582 3600.

Visual Display System

Edinburgh-based Northern Light has developed a new system to display text and graphics mixed with video. The Visual Information Display System uses standard RF monitors and distribution rather than VDU monitors, giving the additional option of backing up text pages with sound for the visually impaired.

Originally designed by Northern Light for use in the public areas of the Edinburgh International Conference Centre, the multi-channel system, with multiple pages per channel, allows programmable text and graphic information to be stored, called up and sent to a designated channel. A typical system would offer the user eight channels each with eight pages. Videos, which constitute one page, can be incorporated, as can show relay and off-air signals. The system is accessed by means of a 486 PC connected to the central equipment rack via a LAN network and for simplicity of operation uses Windows Paintbox.

For further information contact Northern Light in Glasgow, telephone 0141-440 1771.

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BAPTISM OF FIRE

Ruth Rossington reviews a revival of the work of Russian composer Alexander Scriabin at Guildford Cathedral

"I will ignite your imagination with the delight of my promise . . . I will veil the sky of your wishes with the sparkling stars of my creation." (Alexander Scriabin)

Performing classical music accompanied by a full lighting treatment is nothing new. There certainly has been no shortage of musical events held in and around cathedrals recently. Yet Guildford Philharmonic Orchestra's recent performance of *Prometheus* by the Russian composer Alexander Scriabin, as part of their International Music Festival, differed in one important aspect: the lighting plot performed to the show was to the composer's own design (the musical score is shown right) - which is all the more remarkable when one discovers that it was written in 1908.

Unfortunately, the only attempt to perform the complete piece in Scriabin's own lifetime

was considered a dismal failure, despite him having developed his own lighting control: the light piano or *clavier à lucé*, to play the lighting score. This uncanny pre-empting of Fred Bentham's Light Console can still be seen in the museum dedicated to Scriabin in Russia. Since then, *Prometheus* has rarely been performed, and usually without the accompanying lighting score.

Alexander Scriabin was very unusual in many ways, being heavily influenced by the theosophical movement and especially their views on Man's enlightenment and will. He wanted his compositions to 'encompass all sensory experience' and to be more than just an aural sensation, as a way of awakening the consciousness of his audience. He wanted to channel the moods and emotions present in the music in another format, and saw light as the medium for that. To Scriabin, each note represented something: joy, will and so forth,

which could also be represented by a colour of light. By playing the lighting score on his *clavier à lucé*, the colours produced by the pressed key would represent the meaning: joy is shown as yellow, will by red, for example. This is probably the closest to 'colour music' that has ever been achieved.

The brief for the Guildford performance was to recreate Scriabin's score as faithfully as possible, using the Cathedral as the



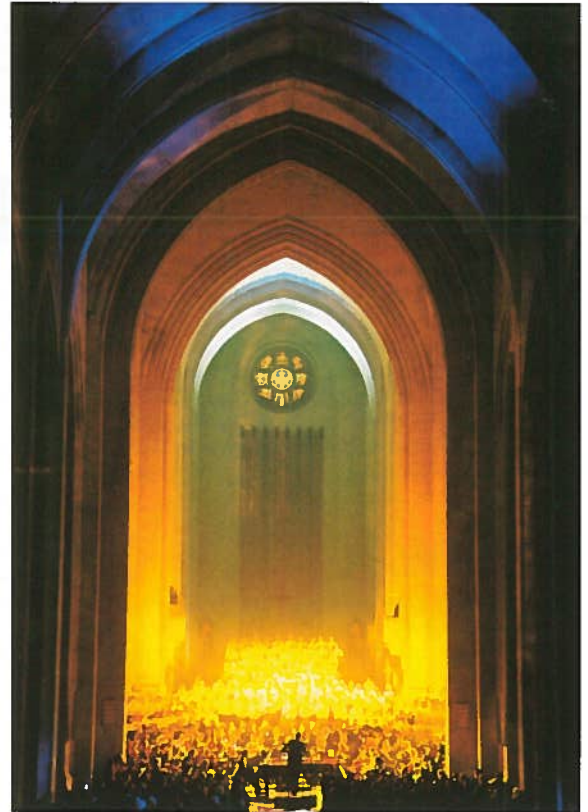
setting, and the task fell to Amanda Garrett, technical manager of the University of Surrey, and Jonathan Howard, lighting designer with DHA Lighting.

Garrett explained the background to this unusual project: "Almost a year ago I was asked by the Festival Committee whether I was interested in lighting a concert that they were planning for March 1995. I was intrigued when I learnt more about the composer, Scriabin, and his piece, 'Prometheus - Poem of Fire'."

The noted concert pianist Nikolai Demidenko had agreed to play as soloist in the performance and as an expert on Scriabin, was keen to see that the whole of his vision was achieved. Jonathan Howard takes up the story: "Amanda and I first spoke about the concert a year ago. At that time, the producers felt it was important to not only follow the score minutely, but also to attempt to perform it using a modern equivalent of a Scriabin *clavier*, with a musician playing it on stage as another instrument. That suggested some form of MIDI keyboard to us, and we began to design the show whilst looking for suitable control equipment. We found we had the principles of a control system and a design worked out quite quickly, only to find we faced a lengthy wait whilst the festival organisers tried to find the necessary sponsorship."

By January, despite a nine-month delay, the funding (albeit only 50% of the target) was secured, and the project was back on course again. Unfortunately, the plan for a live *clavier à lucé*, played on stage, had to be dropped: "By January, we hadn't the time or the budget to get the system together," says Howard, "though this turned out to be no bad thing, considering the restrictions we had in rehearsal time."

Other elements came together more smoothly: "When designing the piece," continued Garrett, "we had to be sensitive to Scriabin's original vision. He saw the entire auditorium bathed in light, with performers and

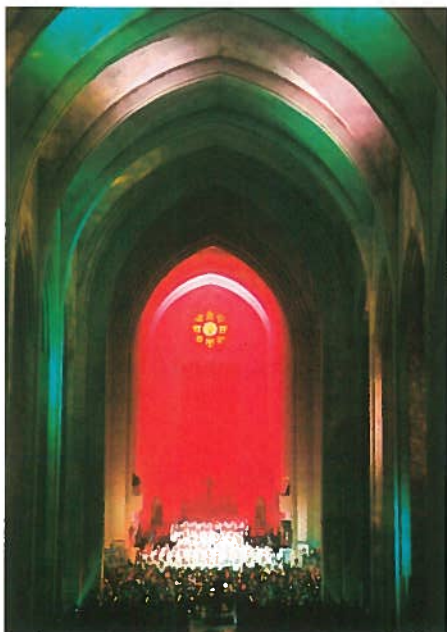


audience alike wearing white and becoming part of the projection surface."

It was felt that the failure of Scriabin's own performance in 1908 was due to the lighting being restricted to a white backcloth behind the orchestra. Garrett and Howard felt they could move on one step beyond this. With the pale cream colour of the interior of the Cathedral, as well as its architectural lines, the decision was really made for them: Scriabin had divided his lighting score into two parts. The 'bass' line represented the 'cosmic life force' underpinning everything else, and its 'breathing' indicated by solid colours in constant movement, would be projected on the building all round the audience, surrounding them in its glow. The upper part, or 'melody' represented the recurring themes of Man's quest for consciousness and using many more rapid changes of colour would be played as lighting on the choir and orchestra.

Given that there was no provision for hanging positions within the Cathedral and nowhere near enough power (masons not being aware of course of the uses their buildings would be put to in future years) and a very restricted get-in time, the designers had a few problems to solve. "Whatever lights we chose had to be inconspicuous and few in number, but versatile enough to give all the colours we needed (Scriabin's 'palette' runs to 12 shades across the spectrum). The use of moving lights seemed the best solution," said Garrett. In the end the designers settled for a rig of 36 VL5s and 10 VL2Bs.

"The versatility of the VL5 was the obvious solution," commented Garrett. "We placed one in each side alcove along the length of the nave, on both sides. There were wide balconies to



each side of the orchestra (in the crossing) and by erecting goalposts in these, there was plenty of room to illuminate the orchestra and choir. VL5s were again used for wash luminaires, with 2Bs in use to provide the spot effects for the upper part of the score."

Behind the choir, the audience had a good view of the Sanctuary. Howard wanted to make effective use of this space, and so ground mounted six 8-lamp DHA digital light curtains. "This gave us amazing colour and movement on the ceiling ribs, and we could move the light around in big, solid blocks of colour that suited the bass score of the plot," he explained. The light curtains were some of the latest from DHA's production line: "We had the new DMX controlled curtains - it's great to be able to drive them around with control over the scroll and intensity at the same time, all from just three channels on the desk. As it was on the day, we still found it was quicker to plot using LightTalk and our Macintosh PowerBook," commented Howard, "especially when you have DHA's Tad Trylski to programme!"

Performing the same role on the Vari*Lites was Patrick Murray. What Howard had failed to tell him until later (over a few beers in The Crown) was that the team only had six hours to install the rig and programme for 20 minutes of music, with cues about every 20 seconds. It wasn't until Murray met Garrett, when she was part way through translating Scriabin's score into meaningful cues to the non-musicians, that it started to become clear.

One of the worries was that they would not be able to do some of the fast colour changes, as well as movement cues, that the score demanded. In fact, this became one of the least complicated parts of the show, as groups of lights could be selected for manual control and put into the right colour without being stored in a cue. Most of the sequences were then stored with no colour information, so that starting the cue sequence and then manually changing the colour, resulted in the correct appearance.

A further concern for the designers was whether the movement offered by both the Vari*Lites and DLCs was appropriate to Scriabin's work. "He was so far ahead of his time," said Howard, "that we are sure he would have used the technology if it had been available!" Garrett added: "We read as much as we could about what he intended with the piece, and felt movement fitted in quite happily with the dynamics of his music."

The get-in started at the end of Evensong on the Friday night, with 20 willing helpers from the University of Surrey's student stage crew marshalled by Steve Major, and was completed by 8.30pm, thanks to some training of the crew in rigging by Vari-Lite's Ed Jackson during a site



Award-winning design from DHA for 'The Plague & The Moonflower'.

visit. Jackson also acted as the show's VL technician - coming to the rescue when a generator hiccup put the dimmer interface out of action minutes before the rehearsal. By plotting frantically, the basis of the show was in the boards by 1am, with the designers working separately to plot the light curtains and Vari*Lites.

"Someone was obviously enjoying a joke somewhere," commented Howard "as we had our one and only rehearsal on the Saturday with blazing sunlight falling through the windows." Not only were acts of God causing problems, but the producers also decided to move the choir and orchestra: "a large chunk of programming had to be completely re-thought when we saw the rehearsal," said Garrett. "All credit is due to Patrick modifying the show in broad daylight, for a performance he'd heard in one fitful run-through." Meanwhile, DHA's light curtains proved to be rather more user-friendly: the PowerBook Macintosh was relocated to the refectory to allow Howard and Trylski to re-plot over a cup of coffee in peace, away from the pre-show tension.

As Murray described, the show was quite an experience for all, and not just the audience: "At 8pm, with my head down over the Artisan and the show caller (a conducting PhD student brought in by Howard and Garrett to follow the score) saying 'go' every other second, we did

the one and only performance. I never saw it except for glancing up occasionally to make sure nothing horrendous was happening. The 20-minute piece seemed to pass in five."

From the first cue of lights, rising slowly to the roof with Scriabin's mysterious opening chords, to the last sweep down through the choir with their crescendo finish, everything seemed to go according to plan and received lengthy applause. Plaudits from the performers were not long in coming, either: Nikolai Demidenko was particularly lavish in his praise, saying it was exactly how Scriabin would have wanted it and the conductor, Brian Wright, was extremely happy. Even the initially sceptical orchestra were completely won over.

There are plans to repeat the piece: Demidenko is keen to take it on tour and Channel 4 have expressed an interest in filming the performance.

This is not the first time DHA have found religion. The company were recently involved with the filmed version of Ralph Steadman and Richard Harvey's piece 'The Plague and the Moonflower', shot recently at Salisbury Cathedral with lighting by DHA Design Services director, Adam Grater. The film has won the producers, Ecosse Films, the prestigious Indies Award for Best Music & Arts Programme for "it's originality, inventiveness and stunning photography".

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ASLEEP IN THE STALLS

I was going to go on about flying in this issue - the National have people and objects going up and down like yo-yos in their latest efforts - Paul Godfrey's space oddity *The Blue Ball* in the Cottesloe and Roger Michell's show-and-tell version of *Under Milk Wood* in the Olivier. ENO have had some embarrassing coverage for the Coliseum first night of *Life with an Idiot*, which seems to have overlapped with the final tech run and was notable for a leading singer finding himself stranded in mid-air in a bath when he was supposed to be being buggered in it at stage level! Perhaps he was grateful for the let-off, and you should also be grateful, NT designers Bunny Christie and Bill Dudley, that I'm not going to take up valuable space on your efforts to distract us from two average-minus productions with your aerial divertissements.

Something more urgent came up last week when I was at the tiny *Man in the Moon* in Chelsea to see a play called *The Isle of the Departed*. It's about the last days of Hitler - by a gruesome coincidence I must have been seeing it almost exactly 50 years to the day after the Führer popped his jackboots. This mini-epic involved 19 actors, making full use of the *Man in the Moon*'s double-decker structure and greatly helped by Sam Anderson's lighting and Jean-Paul Metzger's sparing soundtrack.

It was reasonably full, but when I talked afterwards to theatre director Leigh Shine and his associate Jacqui Sommerville they were hopping mad, not so much at sparse attendances as at the failure of any critic, other than one from *Time Out* (who was, incidentally, most impressed) to get there. Leigh's been running the place since 1981, yet still can't work out how to get attention for what he's doing, completely without subsidy except for the rental money from visiting groups. True, *Isle* opened in an exceptionally busy week, but when you've hand-picked a very good cast (19 of them, remember), given them four weeks' rehearsal and spent £1,000 on commissioning a script, you do rather hope that someone's going to notice.

In the same week I was one of a dozen people in the Orange Tree's old pub room watching *Temple*, a new play by Judy Upton, who last year carried off two of the most prestigious new writing awards, the George Devine and the Verity Bargate. I also saw one and a half shows on the same night at BAC, which calls itself the National Theatre of the Fringe. For *Plantation*, which the highly regarded Orchard Theatre had brought all the way from Devon for their first London appearance, there was a house of a dozen again, and for *Goblin Market*, showcasing the talents of a very imaginative young director called Nick Hedges, there were half that number. All three of these productions used minimal technical resources to great effect - Ricky Hammond's highly atmospheric use of less than 20 lanterns was the best thing about *Goblin Market*, although Adam Brett's sound, which should have carried the piece, was far too jerky for comfort. No national theatre critic saw any of these pieces, except for a couple of paragraphs on *Temple* in the *Independent*. Not even *Time Out* had got to the Duke's Head in Richmond by the time I saw Rosemary Leach (yes, Rosemary Leach) in a new play, *Against the Wind*, at the end of its third week. Local word of mouth ensured a reasonable house, who were rewarded with a splendid solo performance on a set (by Roy Bell) that would have graced the West End, with the experienced Roger



Orchard's production of *Plantation*.

because she believes in the play. But we had a large cast here in *Winter's Tale*, who were able to take home a couple of hundred pounds each in profit-share from a four-week run." Not exactly Equity minimum, but it does pay for the bus fares and packed lunches at least. What the actors, and often the directors, are looking for is attention - from agents who can give them paying work, and critics who can give them notices.

The Fringe theatres who have made it get reasonable subsidy and can pay Equity rates. They've usually done it by having a strong policy - the Bush's contribution to new writing over the years has been phenomenal. Often they will achieve miracles by sheer bloody cheek - Stephen Daldry pursued the Gate's policy of European discoveries with a series of large-cast productions that must have stretched his non-funded budget to the limits, but got the Gate (and Mr Daldry) an international reputation and a new space twice the size of the old one. But for every Bush or Gate there are half a dozen small venues struggling for cash and audiences.

They are likely to be severely weeded out by the more zealous attention some local authorities are paying to licensing and safety regulations. Some would welcome this - is it really sensible for 60 or so houses in London to be chasing audiences that average no more than 30%? No it's not, but with the disappearance of the old rep system and the steady reduction in output in the Regions, the Fringe has become one of the last places where technicians and designers, as well as actors, can get the live theatre experience without which the upper levels of theatre above, not to mention film and TV, will find it harder and harder to get competent personnel. It has to succeed, for the health of the whole British entertainment business.

Now in these hard times, there won't be any saving subsidy for the Fringe - although I like the idea of the National Lottery establishing, say, 100 annual matching capital grants of £5,000 to be bid for by Fringe productions. Really it's up to the Fringe itself to exercise more quality control, set up joint lobbying and promotion mechanisms (a mailing for five theatres costs the same as a mailing for one) and tell the prospective audience what special delights are waiting for them, in the most unexpected places, at less than a tenner a ticket.

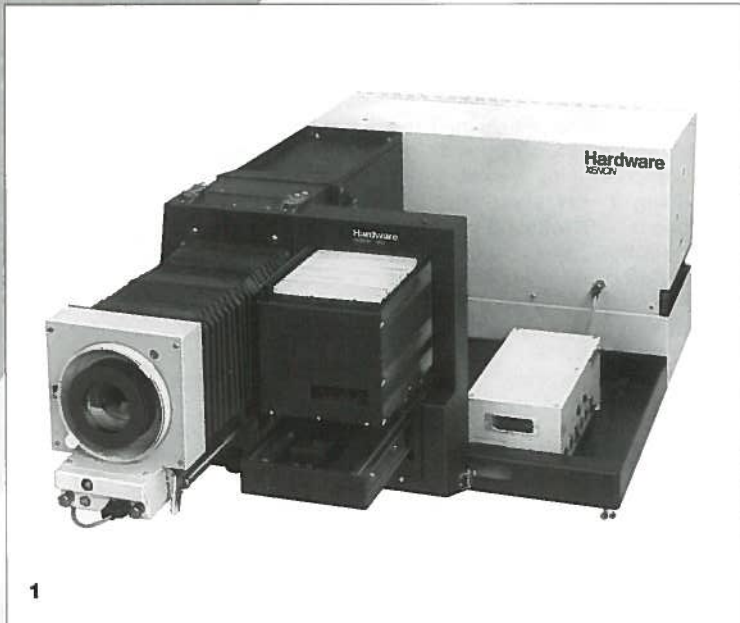
In fact, since most Fringe box offices are so paltry, I'd play the first week of four at my ideal Fringe house for free, and rely on the ensuing word of mouth to fill it for the other three.

And, yes, it's up to the media to give them some more of the notice that most of them richly deserve.

Ian Herbert

Ian Herbert is the editor and publisher of the critical journal, *Theatre Record*.

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THE ABTT MIX

Robert Halliday reports from the Royal Horticultural Halls



Michael Hall of Rosco with Lesley Harmer of Lesley Harmer Associates.

In the pre-amble to the report on last year's London ABTT Show, I said that 'money did seem to be in evidence', with visitors actually looking at equipment with a view to buying, rather than just for interest. The general opinion at this year's show, held at the Royal Horticultural Halls on April 6th and 7th, was that things had continued to pick up, with many exhibitors describing themselves as incredibly busy.

Yet somehow the show didn't seem to reflect this and wasn't as busy. The programme described it as 'the largest show for many years', and the first appearance of new exhibitors in non-lighting fields was welcome. But several exhibitors from previous shows were noticeable by their absence, and there definitely seemed to be fewer visitors from the further-flung parts of the country. Many of the regional theatres will pay for their technicians to visit exhibitions, but they now seem to be limiting this to the bigger PLASA Light & Sound Show.

What still sets the ABTT apart is the hugely diverse range of exhibitors and press announcements. An example? At one end of the hall M&M held a conference to announce a huge shake-up in the distribution of the popular Arri lighting desks and dimmers (see lead news, April L+S). From July 3rd all of these will be 're-claimed' by ETC, the American company who actually manufacture them. They will then be distributed in the UK by **M&M Light Solutions**, a new company within the M&M group who will also bring in an ETC product that has never really made it to this country - the excellent Source 4 profile spot. This company will also take over all back-up and technical support for existing Arri installations.

Given the effort Arri has put into establishing their lighting control range, that was the kind of announcement that wouldn't have been out of place at one of the big trade shows. At the same time, at the other end of the hall, a brilliant, loud comic performance by David McDade was selling the **Biancheri** - a new tool developed



Fred Bentham seated at his invention - the renowned Light Console.

after he got fed up of having to undo broken wing-nuts. The tool is a classic example of effective simplicity, doing exactly what it says it does (allowing wing nuts to be tightened and loosened without breaking the wings, and even allowing nuts with one wing broken to be released) and doing it very effectively. The cartoon book showing 101 other uses for the tool is an amusing bonus. Some people scoffed at the Biancheri (and it could be improved - I'm looking forward to a ratchet version), but two other stands borrowed mine to help with their get-outs at the end of the show!

So that was the range of the show's 54 stands - **Cerebrum** even managed to cram that diversity onto one stand with products ranging from the versatile Stinger control system from Maris Ensing to a new hook clamp which, by the addition of a metal strip, prevents damage to lightweight truss. A surprising number of stands did have one theme in common, though - moving light related exhibits. A few years ago, most theatres could only look on enviously as moving lights made their way from rock-and-roll into large scale musicals. Now anyone considering buying a new lighting desk is likely to find some form of moving light control included, since the lights themselves are increasingly affordable.

This was why the **White Light** stand was devoid of all props apart from a video showing **Modelbox's** latest work and a new moving light from Germany, the Amptown PML Controlite. This is a moving-head unit which bears a startling resemblance to the Vari*Lite VL2 range, except that it runs from DMX control. Its



L+S's Jane Cockburn with Graham Threder of Gradav Theatre Supplies.

features include the usual assortment of colour and gobo options, and indexable rotating gobos. Most importantly, it is reasonably quiet and very, very smooth when moving. It's not cheap (especially given the current Deutschmark exchange rate - one of the main topics of conversation amongst exhibitors at the show!) but does illustrate what is possible with DMX control. For users preferring the moving-mirror approach, **Pulsar** had examples from the Clay Paky range on show, including the impressive new Golden Scan HPE (for High Performance).

Of course, moving lights need some form of control. The PML was running from a ScanCommander, which was also being demonstrated round the corner on the **M&M** stand. Some of the tricks this small desk can perform are quite remarkable - but its approach to lighting control will initially be very confusing to people brought up on 'theatre' lighting desks. M&M also had the Rainbow scroller range on show, and on the second day added a new product - the Stage One scroller, designed as a low-cost device for small shows or theatres. Examples of flightcases from the recently acquired **Case Plant** were also on show.

Attempting to create a lighting desk that operates like a theatre desk, but can also function with moving lights, is the current 'holy grail' amongst lighting companies. **Strand's** attempt is the 430. This desk excited me greatly at last year's PLASA Show, but the software to add moving light functionality still isn't generally available. It is now starting to sell as a conventional desk, though, and Strand seem to be sufficiently confident to have announced the imminent demise of both the Galaxy and Light Palette 90 ranges. Hanging above their stand, Strand had a new moving mirror light, the Hyperbeam - basically a re-badged Martin unit. Personally, I think it's a shame Strand feel they have to re-badge units in this way, especially when the Toccata 2.5k profile and new Leko also on the stand show that they can still design good products themselves. The detailing on the Leko,



Gobos being demonstrated on the DHA stand.



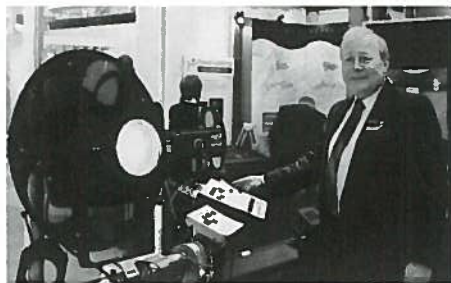
Paul Topliss on the Lee Filters stand.



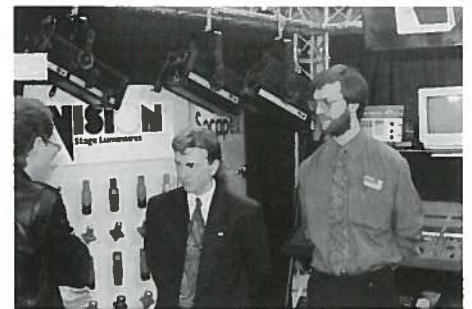
Pulsar's Andy Graves demonstrates Clay Paky's Golden Scan HPE.



Julia Munnings of Canford Audio.



Don Hindle on the CCT Lighting stand with their DMX control units and colour wheels.



Mike Falconer and Mark Tonks of AC Lighting.



Raph Janssens (left), Jackie Staines and Nick Mobsby (right) of ADB with L+SI's Rob Halliday.



Adrian Hicks (left) and Mike Goldberg of M&M with a 'Case Plant'!



Richard Harris (left) and Nigel Cunningham speak out for Metro Audio.

with the beam-angle printed on the back and the front of the interchangeable lens tubes, is particularly impressive. The Leko will, however, face strong competition from both the Source 4 and the Altman range, which was on show on the **AC Lighting** stand.

On the other side of the hall, **ADB** had their version of the holy grail - the Vision, which was shown at the ABTT show last year. The moving light module for this desk is also not quite available yet, having undergone considerable re-design since last year, but the rest of the desk seems to be finding homes in the UK. One potential customer was so impressed that she's even changed sides - Jackie Staines, formerly chief electrician at Scarborough, was happily demonstrating the desk and the range of ADB lanterns. This was something of a trend at the show, with several long-term freelancers having moved into 'proper' jobs either in theatres or supply companies. Though the suppliers are reporting increasing business, many of the freelancers seem to have got bored of hunting for work and then finding themselves

paid late, if at all. Hopefully, their experience will lead their new employers to treat freelancers exceptionally well!

One company whose desks do have a way of controlling moving lights are **Arri**, who were sharing the **Donmar** stand and showing the Focus desk linked up to the tablet. Though not the perfect way of controlling moving lights, it does work, and it was good to hear that the staff responsible for the desks are brimming with ideas for improving both the desks and the tablet - and will have a chance to put these ideas into practice, since they are making the move to the new distributors.

At the opposite end of the control scale **Zero 88** had their usual control units and the very neat ID dimmers (now available in 6x25A versions) on display. **Multiform** had a new small memory board aimed at schools, while **CCT** had perhaps the smallest DMX desk at the show - a tiny six-way, manual fader unit primarily designed as a controller for their DMX colour wheels. The company also had their low-cost two-colour semaphores and their Coloursette

scrollers on show. Their dedicated scroller controller could be of interest to users wanting to run scrollers independently of the lighting desk. Interestingly, CCT haven't joined the rush to add condenser optics to their profile spot ranges, pointing out that in most cases users immediately try to soften the focus. The other manufacturers all seem to have made the move to condensers, though, with **AJS** having a good looking new Selecon condenser profile on show, as well as their existing 1200W and Acclaim sub-1k ranges.

The AJS stand also featured an interesting alternative to the CCT colour wheel, which turned out to be the new 'Floppy Disc' unit from **Action Lighting**. This consists of a motor on a frame and a wedge-shaped template. You cut your own circular 'patterns' - which could be a series of colours to turn the unit into a colour wheel, or a patterned disk to turn it into an animated effect - and then attach them to the motor. The whole unit doesn't look as neat as CCT's colour wheel - especially since the circle's edge has no support and tends to flop around - but in true salesman manner, Action were describing this as an advantage, since on tightly rigged bars the colour would fold around other lamps! Action also had two new small Par cans on show.

These are based around new display bulbs, but they'll no doubt find some theatrical application before long. The company were also providing a home for **Le Maitre**, who were showing their G300 Genesis machine. This is an incredibly versatile machine with a whole host of remote control options and which, by a change of fluid, can generate either smoke or haze.

Rosco also had new smoke machines on show, including the 1600, the Hazemaker and the small BP25 battery-powered unit. A few new colours have appeared in the Supergel range following their regular consultation with lighting designers - 'Fisher Fuchsia' hints at a new naming policy honouring those responsible! Of most interest to many theatres, though, was Foamcoat, a flame retardant and water resistant coating for styrofoam and polystyrene which is already proving a huge hit with scenery workshops.

Rivals **Lee Filters** didn't have new colours on show, but did have the finalised version of their gobo range, previewed at the PLASA show. **DHA** didn't seem to be unduly concerned

Best Product Award - GamFusion

GamFusion picked up the '95 ABTT Best Product Award. The range of 10 filters starts with 10-10 - a 'nearly clear' filter, which can be used to clean the beam of an uneven spotlight. Each of the filters is made from clear polyester and coated with a high temperature diffusing and whitening agent which can stand temperatures as high as 450 degrees F without turning yellow. L+SI invited Francis Reid, one of the judges, to expand on their choice.

"The increasing subtlety of diffusers such as Hamburg (Rosco 114) and Light-Hamburg (Rosco 119), has enabled short-throw lights to be softened quickly without casting excessive scatter. I have been one of the more vociferous of a large bunch of lightpersons who have long been asking for an even more subtle diffuser (generally referred to in discussion as a quarter-Hamburg), which could be used to soften gently on long throws from front-of-house bridges and lime boxes. It takes a long time to adjust the permutations of knobs on modern profiles to get a clean beam with a soft edge. And how many follow spots defocus quickly? On a long throw, even half-Hamburg can turn a hard-edged follow into a Fresnel.

The Great American Market (GAM), have not only come up with three new diffusers which are progressively more delicate than half-Hamburg, but these are part of a systematic range offering 10 degrees of diffusion. This is not an old switchboard in a new desk, or another permutation of the same old lenses and extrusions. It is not a slightly different tint for the filter palette. It is a new tool, offering an opportunity for our lighting to become cleaner and quicker, and you don't need lottery funding to buy it!"



L-R: Adrian Offord of GamFusion distributor Wybron, holding the award, with Jonathan Allen and David Pritchard of Northern Light.



Paul Wright of Gradav (left) with Iain Price-Smith of Multiform.



Jonathan Allen and Mike Smyth with Northern Light's AV system.



The Biancheri being energetically advertised by David McDade.



Nigel Sadler of M&M with the Mr. Mister smoke machine.

about this, with their stand concentrating more on the 'toys' than the gobos. New products were a re-designed double gobo rotator, and a DMX DC controller which does away with the need for separate demux units and DC controllers - once again, not an exciting new product, but a well-thought-out one that will save time and effort on shows. Similar simple, practical and effective DMX products were, as usual, on the XTBA stand - it's good to hear that more and more venues are becoming wired up for DMX since so many products can now be controlled in this way.

MM Productions have, over the past couple of years, established a reputation for making useful products for the sound market, as well as working to introduce smaller venues to the joys of the sampler. This year they were demonstrating software that allows Akai samplers to be controlled from Macintosh computers, and the Akai DR4 hard disk recorder with their own StopBox controller. Proving that technology is now cheaper than mechanics, this set-up just about matches a new Revox on price, while providing the advantages of silent operation and quick access to cues.

Though hire companies were well represented at the show, with **Cyberdescene** also having a stand, one noticeable absentee was Autograph. Apart from MM, visitors seeking a sound hire and lighting-and-sound suppliers had only **Playlight** and **Gradav** to choose between. Gradav spent most of the time talking about their expansion, since their hire department has now moved out into separate premises. But they also had the Soundcraft Powerstation powered mixer on the stand, and have Chevin amplifiers, Denon mini-disc recorders and Yamaha monitors in their hire stock. The hired equipment insurance scheme they have arranged should also appeal to their smaller customers.

Despite the absence of hire companies, other sound products were on show. **Beyerdynamic** had the RT1 spectrum analyser and DP100 audio display processor, whilst **Hayes Sound & Lighting** had the Community RS series loudspeakers, as well as Martin moving lights. Both **Marquee Audio** and **Audio Video Systems** were talking about recent installation work,

with **ASP Frequency Management** providing invaluable advice about radio microphone frequencies and licensing requirements, whilst **Canford Audio** were giving out copies of their indispensable catalogue.

Of course, the ABTT show is a show for all theatre technicians, not just sound or lighting people. As well as lighting suppliers such as **Primarc** and **RB Lighting**, companies from other areas of the industry had much to show. **Light Opera** now have Flamecheck flame-proofing available as well as a new range of sleeved 15A plugs. **British Harlequin** had examples of their full range of flooring on show, including new floor tiles for studio use. **Flint Hire and Supply** were running a mini market-stall in the show, as well as giving out copies of their catalogue.

Harkness Hall Stage were showing their new, shortened company name, as well as a variety of PC control systems. A full range of exhibition and display fabrics could be found on the **Varia Textiles** stand. **Andolite** had a budget-priced staging system called StageBase on show, as well as their range of modular patching boxes. **Northern Light**, who played host to Wybron and the GamFusion award-winning filter (see separate box) also had a new Visual Information Display system developed for the Edinburgh International Conference Centre. **Glantre** meanwhile, had photos and models of their current projects, showing just what is possible given a suitable budget!

Two other companies had products which were interesting primarily because they were developed for other industries but are now being introduced into the entertainment market. **Aliscaff** had their aluminium rostra on show (the heavier Steeldeck featuring on the **Theatre Futures** stand), but were also demonstrating the wide range of scaffolding and truss fittings resulting from their work with scaffolding towers and specific customer requests.

Rope Assemblies were showing the Gripple, a quick way of terminating wire ropes without messing around with dog grips, that has been used in other industries for some time. The recent adverts for this device met with some

scepticism from riggers, but **Bridon International** had data sheets on hand to show that the Gripple could actually be safer than dogs, which are very rarely fitted as recommended. Both companies spent much of the show talking to theatre practitioners about new regulations governing rigging, with Bridon promoting their training courses as much as their products. These will doubtless grow in popularity as more and more venues demand formally trained staff.

Another area that is already growing is the use of computers for a huge range of tasks in theatre. **Navigator Systems**, a new company incorporating the people formerly involved with Midnight Design's PAT software, were promoting their own version of PAT, as well as offering their services creating custom software. They also offer consultancy to companies wanting to connect themselves to the Internet. The growth in the use of this system over the past year has been phenomenal, and it can only be a matter of time before more entertainment organisations and suppliers get connected.

Strangely, the most popular stand at the show was the one with the oldest technology. The **ABTT Archeology Committee** featured Strand's 60 year-old Light Console. This adapted Compton Organ technology to form the first lighting desk to provide memory storage of lighting states and so allow one person to run large shows. In a way, it set the trend for all of the current memory lighting desks, which use an adapted technology (the PC) to operate. The highlight of the show for me was when Fred Bentham was re-united with the light console he had invented - it was like a father finding a long-lost child.

That exhibit fascinated many people because it was (and still is) a miracle of invention, and because while newer technologies can exceed its performance, they don't have its soul. The Light Console is something that would almost certainly never appear at any of the larger exhibitions. It made a show that, while perhaps the biggest for a few years, sadly wasn't the most exciting or interesting. I'm now fascinated to know how the committee will top it next year. March 28th and 29th 1996 are the dates when all will be revealed . . .



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SECOND TAKE

John Watt's view from beside the camera

I suppose there are consolations that come with old age, or should I say 'maturity'? The definition of 'old' for a television lighting designer goes along these lines: if you remember 3" image orthicon cameras with electric turrets, then you are definitely getting on. As some may recall, the LD would have lit for a scale of only 10 miserable discernible steps and therefore filled everything with a row of scoops to keep the contrast ratio down.

You are only middle-aged if you worked through the coming of colour first, maybe with Secam systems which demanded around 500FC at 3,200k, if memory serves me right. Since this was a bit before tungsten halogen, lamps were frequently rejected long before they went off with that satisfying bang that I enjoyed so much, and that kept the audiences on their toes.

Anyway, as I mentioned, consolations there may be, but I have not discovered them. *Consequences*, yes: one being that bright-eyed young people seem to genuinely think that you have learned how to do it, and can therefore tell them 'the way'. Well, lighting is part of many a curriculum, and there are people around who teach and do it well, but I am not one. So, I suppose this is a public plea to young hopefuls not to ask me. Kick ideas around, yes: discuss possibilities, yes: argue about equipment, yes, but come up with cast iron formula, *no!*

For the first 20 years or so that I tried to light shows, I thought it had to get easier - that a fund of experience must count for something: it doesn't. I thought that, if nothing else, at least one would worry less. Wrong! A very short memory is essential in lighting (as in sailing small boats, which a surprising number of lighting people do), in order for you to forget how awful it was the last time.

So where is all this leading? Well, nowhere, as regular readers of this column will have come to expect, but it has, I suppose, been triggered by one of this week's activities: a recce for a comedy show on location. This should be one of the more pleasant of TV production activities, as it only involves talking about a show and making plans and not much else, apart from lunch, for which the production manager will pick up the tab.

First, you have to have read a comedy script, which does make certain demands upon one's imagination and sense of humour, but both of these characteristics should be built firmly into a lighting director's psyche - if you haven't got them, you shouldn't have joined up. It's true that later you'll have to deliver, but the show is three weeks away and you'll agree to anything to get out of the cold. However, the day of reckoning will arrive, and decisions will have to be made about what equipment to take on location, and this, dear reader, depends largely on the weather!

Typically, on day one we are all being Robin Hood out in the Greenwood. Day two is a very tight, very old garage, years of oil, old tyres on the wall, a pit (no ramp), and a 1968 Mintex calendar on the wall. Day three is a medieval banquet in a real castle.

The Greenwood exterior requires no lights if it's 'hazy bright' (as it says on the middle position of my Brownie camera), except that the director

will continue past the scheduled five o'clock finish, and require you to lift half of Nottinghamshire to look as 'hazy bright' as it did at midday. This is impossible, as it had been as diffuse as only God can make it, and there's not much future in lighting big exteriors with bounce light. However, you load four sheets of poly, two 4k and two 6k HMIs. If the sun comes out, they'll come in handy. The 6ks will lift the actors' eyes in the 'against the sky' shots, providing you spot them up.

Of course, you'll need to load some big stands to put them on and to achieve even a modest angle of elevation they'll need to go high, as half the action takes place 20 feet up a noble oak (if Friar Tuck's shadow is higher up than he is, it's a dead giveaway). The stands are heavy and so will need at least four sparks to lift them. I'll order a 45kW generator and save the production a few pounds.

Better put four reflector boards on to beat the sun at its own game. The actors won't like them, the sparks will trap their fingers in the yokes and they'll blow over in the wind, but I'll take them anyway. They won't make much difference to the

size of Genny needed, except that bigger Gennys tend to have bigger load spaces - maybe I'll have a 60kW after all. Anyhow, that little lot should get us through day one, but what about that little garage on day two?

The existing lighting is tungsten, so I opt for the same colour temperature, especially as I'd like to hide some Mizers behind a pile of five-gallon drums down in the pit and behind some roof truss members. They'll probably set fire to the place, so I'll pack some extinguishers too.

So, this is a Mizers, Pups and Zap lights job and I will beef up the existing practicals and indulge myself with a few inline dimmers. We need a box of odds and ends - Italian clamps, magic arms, sash, screw hooks, small stands (no wheels - they get shifted enough by careless extras without making it easier for them). Maybe a shaft of sun through the window at the back from a 1200W HMI - I could use one of the 4ks from day one, but if we can run the whole job on a single 32 extension it will make life easier, as the Genny has to be parked 100 yards down the street.

Day three: the castle setting is in a baronial hall with large church-like windows down each side. Some theatrical shafts of light would be nice (preferably not from both sides at once), so the big HMIs and stands can come into play again. I'll get props to put trace over the sunny side to diffuse any real sun and put my own in from the north, where, unlike the real thing, it can stay all day. I must remember to get special effects to provide some 'cracked oil' atmosphere. Inside it's more HMIs, hard stuff on the sunny side or as keys, and some fill from 5k HMI softlights, which are easier to move than a bounce arrangement - especially as we don't have enough room for 8 x 4 polys.

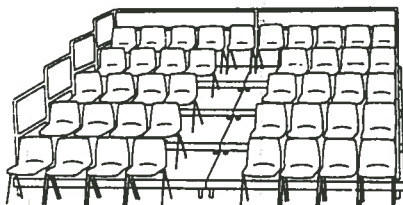
So, the list for the three days amounts to two 6kW HMIs, two 4kW HMIs, eight 1200W HMIs and three 5k HMI softs, all complete with stands. There's also the tungsten kit, so the Genny is looking full, and the gaffer still has to add the cable and distribution gear, ladders and some boards to stop the Genny sinking into the mud. He also adds a box of bits which the lighting director has forgotten, and which will earn him a few brownie points on the day.

Where was I - oh yes! If someone does have a scientific formula for doing this maybe they will tell me. I know that for half the time, only half this kit will get used, but if I can't manoeuvre around changes of heart and changes of plan and changes of weather, I may not get asked back. That feeling of insecurity is not the prerogative of the young.



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LEGAL PUBLICATION

By the judgement of February 20, 1995, the Tribunal de Grande Instance (High Court) of Strasbourg (France):

- found that SARL NOVALIGHT filed on July 21 1992 the trade mark JEM registered under no: 92 427 930 in fraud of the rights of JEM SMOKE MACHINE CO LTD;
- accepted the claim of ownership of the said trade mark made by JEM SMOKE MACHINE CO LTD and ordered the transfer of the same to that company;
- ordered SARL NOVALIGHT to pay JEM SMOKE MACHINE CO LTD the sum of one hundred and fifty thousand French francs (150 000FF) as damages for the fraudulent filing of the trade mark;
- authorised JEM SMOKE MACHINE CO LTD to publish relevant abstracts of the judgement in 3 newspapers or magazines as they think fit at the cost of SARL NOVALIGHT up to fifteen thousand French francs (15 000 FF);
- ordered SARL NOVALIGHT to pay JEM SMOKE MACHNE CO LTD the sum of fifteen thousand French francs (15 000 FF) for the cost of the proceedings ;
- ordered the enforcement of the judgement notwithstanding appeal as regards the transfer of the ownership of the trade mark and the publication of the judgement.

PUBLICATION JUDICIAIRE

Par jugement en date du 02/02/1995 le Tribunal de Grande Instance de STRASBOURG a

- dit que la SARL NOVALIGHT a déposé le 21/07/1992 la marque JEM enregistrée sous le numéro 92/427 930 en fraude des droits de la société JEM SMOKE MACHINE CO. LTD;
- déclaré la société JEM SMOKE MACHINE CO. LTD en conséquence fondée à réclamer la propriété de cette marque et à ordonné son transfert au profit de cette dernière;
- condamné la SARL NOVALIGHT à payer à la demanderesse la somme de cent cinquante mille francs (150 000 FF) à titre de dommages et intérêts en réparation du préjudice résultant du dépôt frauduleux de la marque;
- autorisé la société JEM SMOKE MACHINE CO. LTD à faire publier le jugement par extrait ou en son dispositif dans trois journaux ou magazines de son choix, aux frais de la SARL NOVALIGHT, sans que le coût global ne puisse excéder la somme de quinze mille francs (15 000 FF);
- condamné la SARL NOVALIGHT à payer à la société JEM SMOKE MACHINE LTD la somme de quinze mille francs (15 000 FF) en application de l'article 700 du NCPC;
- ordonné l'exécution provisoire de jugement limité au transfert de propriété de la marque et aux mesures de publication.

SOUND FOR THE OLIVIER

Mike Walker describes the new installation at the National Theatre



The interior of the National Theatre's Olivier Theatre, showing the curved stage with the 'wrapped around' seating.

Back in the early part of 1994, Rob Barnard, head of sound at the National Theatre, asked me if I would prepare a report on replacing the main loudspeaker and amplifier system in the Olivier Theatre. The idea was to consider what sort of system was needed and to look at the ways in which they should go about the task.

The stage section of the sound system had recently undergone refurbishment and the rear wall speakers had been rationalised, altogether providing three independent amplifier positions. The area left to be refurbished was the main auditorium system consisting of the proscenium area, delay positions (if necessary) and side wall positions, to include speakers, amplifiers, associated processing and infrastructure relevant to this area of the sound system. This was also to include provision for a new amplifier rack position, as the existing overhead position did not conform to current regulations, and to provide additional undedicated speaker outlets in various positions.

The Olivier generally has three shows in its repertoire, with an average of two changeovers per week. The system would have to be versatile enough to cope with anything from Shakespeare to Sondheim, with the ability to deal with platform or pre-show performances with the minimum of fuss.

After many months of avoiding putting finger to keyboard, a suitable discussion document was produced. It covered the theatre and its

acoustics, the aims and uses of the system, the existing system and infrastructure, system components and current equipment availability, before getting on to the design considerations themselves.

The auditorium is divided into an initial two areas: the stalls and the circle. The stalls has a central area of 446 seats and two side slips, each seating 79 people. The circle is one curved bank of 518 seats. All seating banks are raked and provide a clear sight line to the stage. It is

"The system would have to be versatile enough to cope with anything from Shakespeare to Sondheim, with the ability to deal with platform or pre-show performances with the minimum of fuss."

one body of air with no major dividing structure between the actor and the audience. All of the audience are within this space with virtually no-one seated beneath an overhang from another audience level.

As the stage area constitutes a major part of the volume of the theatre and there is no physical barrier between the stage and the auditorium, any change in the stage area acoustic affects the overall acoustic much more than might normally be expected in a proscenium arch theatre.

The auditorium has a history of sound and

acoustic problems, primarily stemming from the original architectural design of the theatre. Many of the main audibility problems are exacerbated by unsympathetic staging and set design.

There is little chance of damaging the natural acoustic by adding a sound system to the space, as long as it is recognised that it is one large air space and is dealt with as such. The concrete side walls of the auditorium were a concern as to whether reflections from them would cause confusion in other parts of the auditorium. Similarly the overhead and rear auditorium acoustic panels could be a hindrance to a system.

The requirements for the system, based on the uses of the Olivier Theatre (in no particular order of priority) are to provide: relay of remote music groups (most music is live at the NT); enhancement (or amplification) of music groups playing in the stage or auditorium area; replay of sound effects, specific, general, subtle or obvious, at a natural dynamic range; vocal enhancement of speech and dialogue for dramatic use; vocal enhancement for non-critical performance use (i.e. speeches, platforms, etc), vocal enhancement for musical theatre.

It breaks down into four (slightly generalised) uses: musical (i.e. music being played), effects, non-imaged vocal and imaged vocal, with the first three being the prime uses. The most difficult element, especially in the Olivier with the audience wrapped around the front part of

the stage, is to maintain imaging to the expected source, be it a person, an instrument or an object. Almost all presentations in the theatre will have an aural aspect, which may or may not require the assistance of a sound system. When required, the aim of the system is to allow each member of an audience to hear and understand any aural elements.

The system must be able to replay, enhance or amplify any sound irrespective of whether there is an acoustic source. A remote or electronic band, or any recorded noise, will obviously create no direct sound and is therefore completely dependent on the system. If there is an acoustic sound within the theatre which requires enhancement, the level, source and where it is in the acoustic position of the space needs to be taken into consideration in order to maintain a credible image.

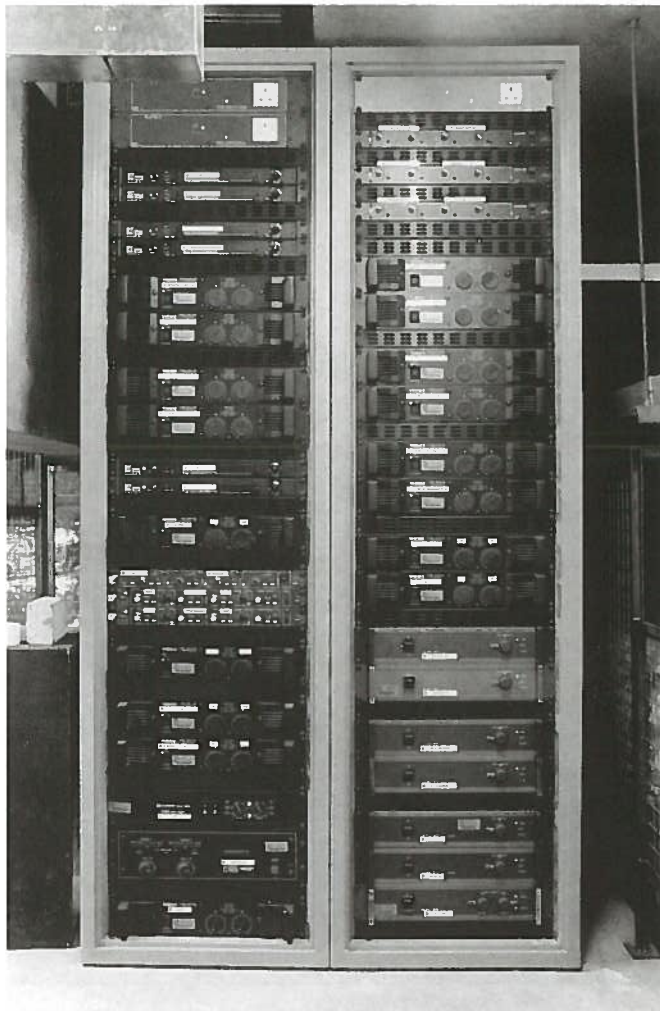
Imaging is critical if an audience is to be convinced that an amplified sound is coming from the perceived source. For instance, recorded effects are made credible to an audience by coming from the correct location, at a realistic level, with the right sort of quality to them. If the visual reference is distant, but the effect is too close, the overall 'picture' will be wrong. Similarly, the picture can be wrong in other ways, for example, if the sound is too quiet. The visible and audible perspectives must match. This obviously has to be tempered with the actual distance a member of the audience may be from the stage and adjusted accordingly for that area.

The sound can be cheated so that only a small proportion of the audio may actually come from where the source is perceived to be. Much of the main information can come from a different source provided it is delayed relative to, or behind the perceived source and balanced in level accordingly.

The system in use for the last 12 years consisted mainly of Electro-Voice horns and bass bins overhead in a cluster position with sub bass in the stalls vomitories. There were speakers in concrete slots along the side walls. A mixture of amplifiers were located either overhead or locally to the speakers, using dedicated tie lines or general facilities panel (GFP) signal tie lines to feed them.

Over the years the system had evolved or been 'repaired' to eventually comprise an unmatched combination of components, and the varying demands being made on the system exceeded its capabilities. The new design was to be formulated by the NT sound department with the overall co-ordination by myself and Brian Beasley.

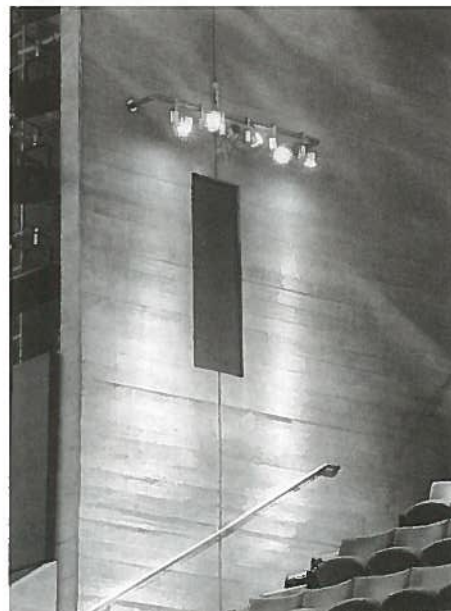
The first stage of the design decisions were made at a demonstration in the theatre of various speakers and amplifiers from six different manufacturers. This was held in the Olivier on the 9th of January. It allowed the sound department to hear and evaluate various processor-controlled speakers and sub bass and also to hear various amplifiers. Speakers were rigged on a bar flown as far downstage as we could at a height of about 10 feet, with subs sitting on the stage itself. No equalisation was in line, only associated controllers or crossovers. There was some dispute amongst the suppliers if this was the best way for us to evaluate the products, but



The racks containing Yamaha, Tannoy, Crest, EMO, Harrison, Meyer and Quad equipment.

in order for the department to hear what a number of manufacturers' most representative products sounded like in the time available, it seemed the best solution. It did give the department a chance to make some decisions about what they generally liked and what seemed to work for this theatre, whilst allowing us all to hear an amazing range of what is current in speaker technology. We are very grateful to all the manufacturers or suppliers who assisted us in this stage of the refit.

It became obvious that it was not possible to get one system to achieve all that may be



One of the side-wall speaker positions.

required by the demands on the theatre without some compromise being made. Differing types of components are likely to be necessary for the range of applications. Of the aforementioned requirements, the odd one out is imaged vocal reinforcement, although there are some demands made on reinforcement of acoustic music from within the theatre that require similar features.

It seemed logical to look at the system in two parts: a system that catered for most needs of music and effects which need specific placement in the theatre and a system for imaged vocal work and, where necessary, imaged music work.

Two weeks later, after some initial decisions were made, a further demonstration occurred with speakers rigged in positions likely to be used. Amplifiers were also evaluated in a little more detail. Various positions for vocal speakers were looked at and decisions on exact placement were reached.

As to speaker placement, the existing system utilised gauze covered slots in a panel over the front stalls. All parts of the auditorium can see the lower pair of slots, but the rear of the circle cannot see the upper pair of slots. The space behind the panel in the lower slot position is limited by a concrete walkway, whilst the upper position is open.

Because of the nature of the theatre we looked at a dispersed cluster for vocals: stalls speakers in the lower slot positions with a circle cluster hanging from the lower edge of the next panel up. This was subsequently altered to position all the vocal cluster speakers within the lower slots and to remove the central section of the panel to create one long slot and hence a middle speaker position. No delay speakers would be necessary in this way as all seats would be in the field of a cluster. The upper slot would contain overhead music/effects speakers with a speaker high up on each 'proscenium'.

For vocal work a front fill position for the stalls area would be needed. This obviously poses problems because of the flexible nature of the front of the stage. Speakers are likely to have to be built into the front edge of sets when they are needed, and to that end, speaker outlets in this position would allow the most flexibility.

It was decided that we would use six of the new Tannoy S300, the 12 inch Superdual driver (in its box), with the TX4 crossovers for the vocal systems, with three units evenly spaced to cover the stalls and three similarly for the circle. Four Meyer MSL-2s with S1 controllers and two Meyer 650-R2s with B2EX controllers were chosen for the music and sound effects system. Amplifiers were to be the Yamaha H Series: 13 H5000s and four H7000s.

We decided to install four programmable graphic equaliser/delay units normalised to the main part of the system, but ultimately over-patchable, to allow designers flexibility in setting the system up as they require. We ended up using Yamaha YDG2030s as much through cost as functionality. The side wall or slot positions were powered by Quad 510 amps and these were retained, as were the speakers on the end (EV S1512s and EV S200s).

Sub bass positions are limited in the theatre: two huge 30W drivers located in the stalls

vomitories and four other EV subs attached to overhead walkways were retained from the existing system. These were given new amplifiers, new cable and new crossovers (two BSS FDS310s for the overhead subs and an FDS360 for the 30Ws).

As we were removing undedicated amplifiers from various locations in the auditorium, tie lines from amplifiers in the new rack position were installed to outlets in the slots, overhead and in the vomitories. Again we utilised existing Quad 510 and Quad 522F amplifiers.

New signal multicores and trunking had to be installed from the desk to the rack position. All existing trunking which goes near the new rack position was virtually full. A bantam Flexipatch bay was used in the control room to access the new system. This provides normalising so that it is possible to use different areas of the system without having to spend ages patching, although all areas of the system can still be accessed individually when required.

The problems of patching bi-amped signals around, especially when using speaker systems which require sense leads, made it potentially dangerous to provide any signal patching at the rack end. For a similar reason there is no speaker patch facility. Cables go directly from the back of the amp to the speaker. All speaker cabling was new (4mm² multistrand) and as the amp location was nowhere near where any sound equipment had been before, all trunking runs to speaker positions had to be installed.

Basic services such as mains, main and

secondary lighting, smoke alarms etc, had to be installed as the area we were taking over had previously only been a service void.

We were able to install a spare amplifier which duplicates input and output connections on a small box so that in the event of an amplifier failure, cables can be easily cross patched to the spare without having to start re-racking equipment.

The equipment was costed and deals struck with the relevant manufacturers/distributors, and this budget had to be approved by the NT's Board of Directors.

From being given approval to spend the money we had five weeks until the next major show - *Women of Troy* - was due to start technical rehearsals. Scott Myers, the designer for the show, was very keen for us to have completed the system by then. As there were a lot of changes occurring in the rep, with various shows coming off, it made sense to try and get the system in and working for as many of the new shows as possible, rather than having to replot them on the new system at a later date.

With six shows a week running in the theatre, we had to do the majority of the installation work overnight or on Sundays, and although the time scale was tight, we managed to overcome delivery problems and all manufacturers were able to meet our schedule. The trunking and electrical installation was undertaken by Show Contracts but all other aspects of the installation were overseen by Brian and myself using other freelance engineers, with advice and guidance from the National. All infrastructure components were supplied via the NT's usual accounts.

During this time we had to keep all parts of the old system working, which proved a little difficult as mains couldn't be transferred until the old rack had been finished with, speakers were to be occupying similar positions and some components were to be reused.

There was one dark night during this period during which another show was taken out of the rep, enabling us to complete a major part of the infrastructure. After this, there was a week of *Merry Wives of Windsor* which wasn't using much sound from the proscenium. We were able to install the two MSL2s overhead for this week allowing us to work in the other cluster areas, removing elements of the old system and preparing rigging for the Tannoys.

On Sunday 5th March, the day before the next production period started, the old system was taken out of commission and the new system completed: all the slot and sub bass speakers were rewired and amplifiers moved; the remainder of the Tannoy and Meyer speaker installation was completed and phase checked; mains was rewired. Some tidying still needed to be done, but in essence the system was ready for use. The time taken from first demonstration to the full system use in *Women of Troy* was under two months.

The system will inevitably get fine tuned over the next few months as the department find out what it can (and cannot!) do. Hopefully, what it *will* do is allow the designers maximum flexibility to make it sound how they want for each show, whilst providing an 'overeasy' option for platform performances or when time is at a premium.

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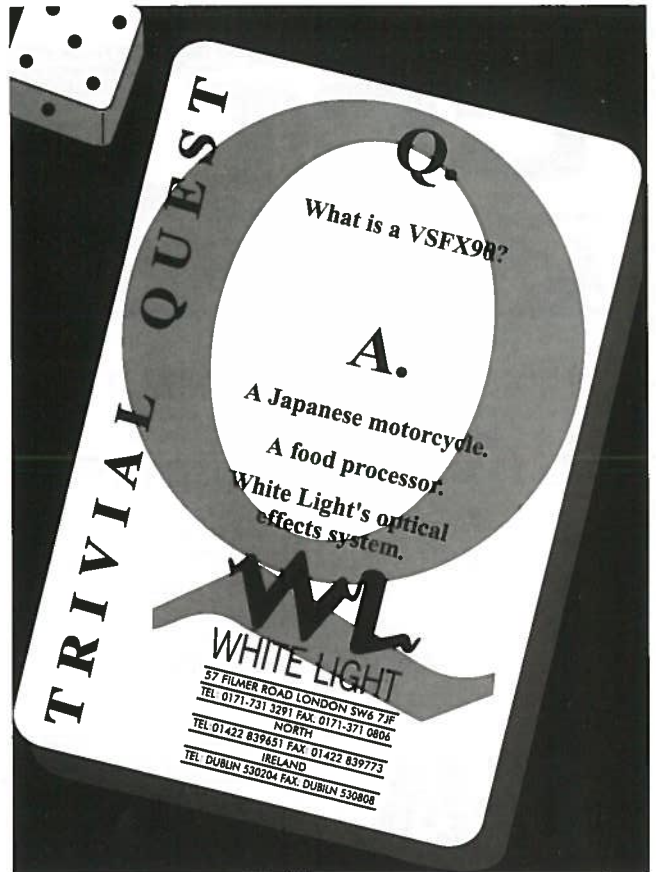


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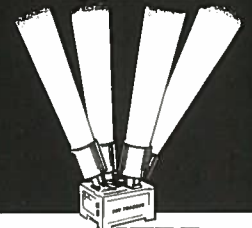
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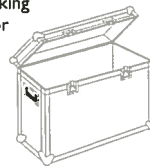
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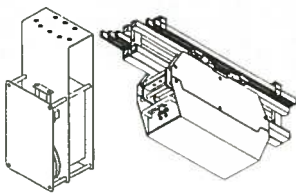
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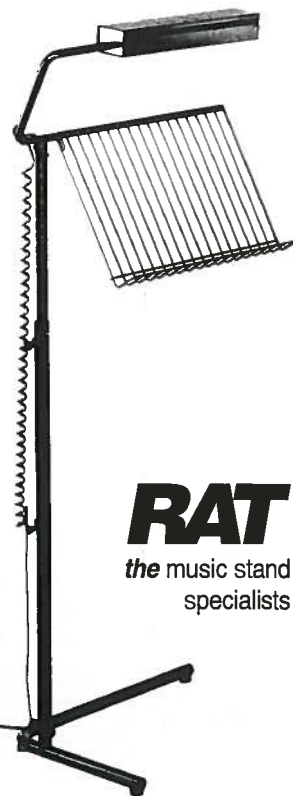
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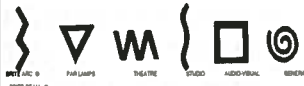
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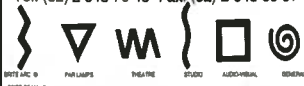
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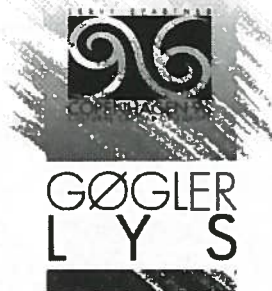
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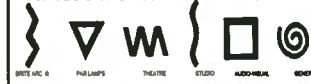
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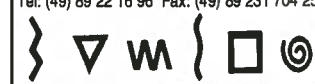
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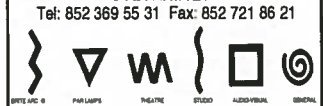
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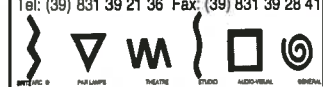
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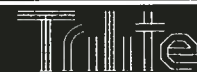
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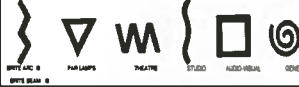


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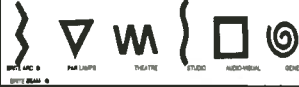


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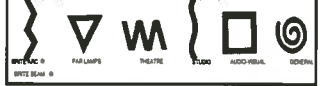
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VIEWPOINT

Peter Brooks on Working Together

Since September 1993 I have been privileged to co-ordinate efforts to clarify the lighting industry's digital communications Standard known as 'DMX 512'. This has led me to meet a fair proportion of the industry's technical luminaries, and, in turn, has given me a better understanding of some of the problems facing digital communications within the entertainment business.

We are living in an age of increasing consumer awareness and expectations. Products are expected to be safely and functionally designed and to work seamlessly with other related equipment. At a trivial level we all expect to be able to go to a hi-fi store and buy a video recorder which will plug into our television and work. The technicalities of how this is achieved are of no interest to the consumer - the problems of making this happen are seen only by the designers.

Within the lighting business, DMX512 has started the digital interconnectivity ball rolling in a basic way. The Standard was conceived because there was commercial pressure from users of lighting equipment from different manufacturers to ensure that they talked to each other. For some time now there has been a technical need for more sophisticated means of communication. Strand proposed their SMX system some years ago which was not adopted by any other companies. The principal reason for this was that there was a need for a supplier of common software to implement the system. Strand were rightly reluctant to fulfil such a role because it could have left them with maintenance and/or product liability problems. Equally, the lighting industry is probably too small to support an independent profit-making third party to write such software. In addition, there was at the time no 'commercial push' for communications systems that the engineers knew were inevitable, but the marketing and commercial people could not yet perceive.

We are now entering an era where connectivity will be one of the largest technical issues of all. Because of the growing international perception of the Internet/World Wide Web, everyone will start to expect increased inter-operability between equipment. With the Microsoft Corporation including Internet access with Windows 95, the awareness of these issues will grow still more.

In the case of entertainment equipment communication, there are needs for both high-capacity low-speed and low-capacity high-speed connections. Inevitably, individual manufacturers, faced with real operational problems, have chosen their own routes. For example, the high-capacity low-speed network of choice is currently Ethernet; three large manufacturers use differing versions of this network. Ethernet is widely used within the personal computer business and therefore the electronics and software are widely available, cheap and seemingly well understood. In itself this leads to a large number of preventable problems. There are case histories of theatres who have installed a network for their PCs and assumed that



Peter Brooks is managing director of Zero 88 Lighting Ltd. He is an electrical engineer by training, a profession from which he has long since retired! He was chairman of PLASA from 1983 to 1989.

they can connect their desk and dimmers to the same network. If the network is of any size, this can lead to the dimmers not performing in quite the manner expected! This is a clear case where users need careful guidelines about mixing functions within the same network. Just because the connectors are the same, the results are not always predictable. Fortunately, our American sister trade organisation, ESTA, is in the process of writing simple guidelines for connectivity in Ethernet entertainment installations which, like PLASA's 'Guide to DMX', will stop some of the worst occurrences. The next step is to establish any areas of commonality between the three existing proprietary Ethernet communications systems

with a view to establishing whether any appropriate recommendations may be made.

In the case of the low-capacity high-speed communications, there appear to be two systems being promoted. One, used by ETC, has a high licence fee which would tend to preclude it from any mass market applications. The other, the 'CAN' system, is at this stage an unknown quantity although it has several vociferous proponents. However, the latter, which was developed by the automotive industry, has the unique advantage of cheap and readily available operational level software made available by Allen Bradley, a process control equipment supplier. It also has a 'self-learning' facility which is arguably the way of the future for communications. Imagine being able to plug a lighting desk and dimmers onto an existing network containing an audio mixing desk and several remote power amplifiers, and knowing that after a short period, each item would have worked out for itself what else was on the network, what would send it messages and where to send its own output. This type of approach, which will be heavily promoted in the coming years by Microsoft/Intel as part of their 'plug and play' system of adding special function cards to personal computers, will lead to an increased customer expectation that the approach will be used universally.

We are now in the position where there may not yet be sufficient commercial pressure for resolving the future intercommunication needs of this industry. The problem is that we probably cannot leave it any longer. These are complex problems requiring the use of our brightest engineers.

By the time it becomes commercially essential to have resolved the problems, it will be too late. It is important, therefore, that all of the industry's marketing and commercial management understand that this problem exists and wholeheartedly support initiatives being taken by PLASA and ESTA over the coming year. Only by working together will we succeed in this.

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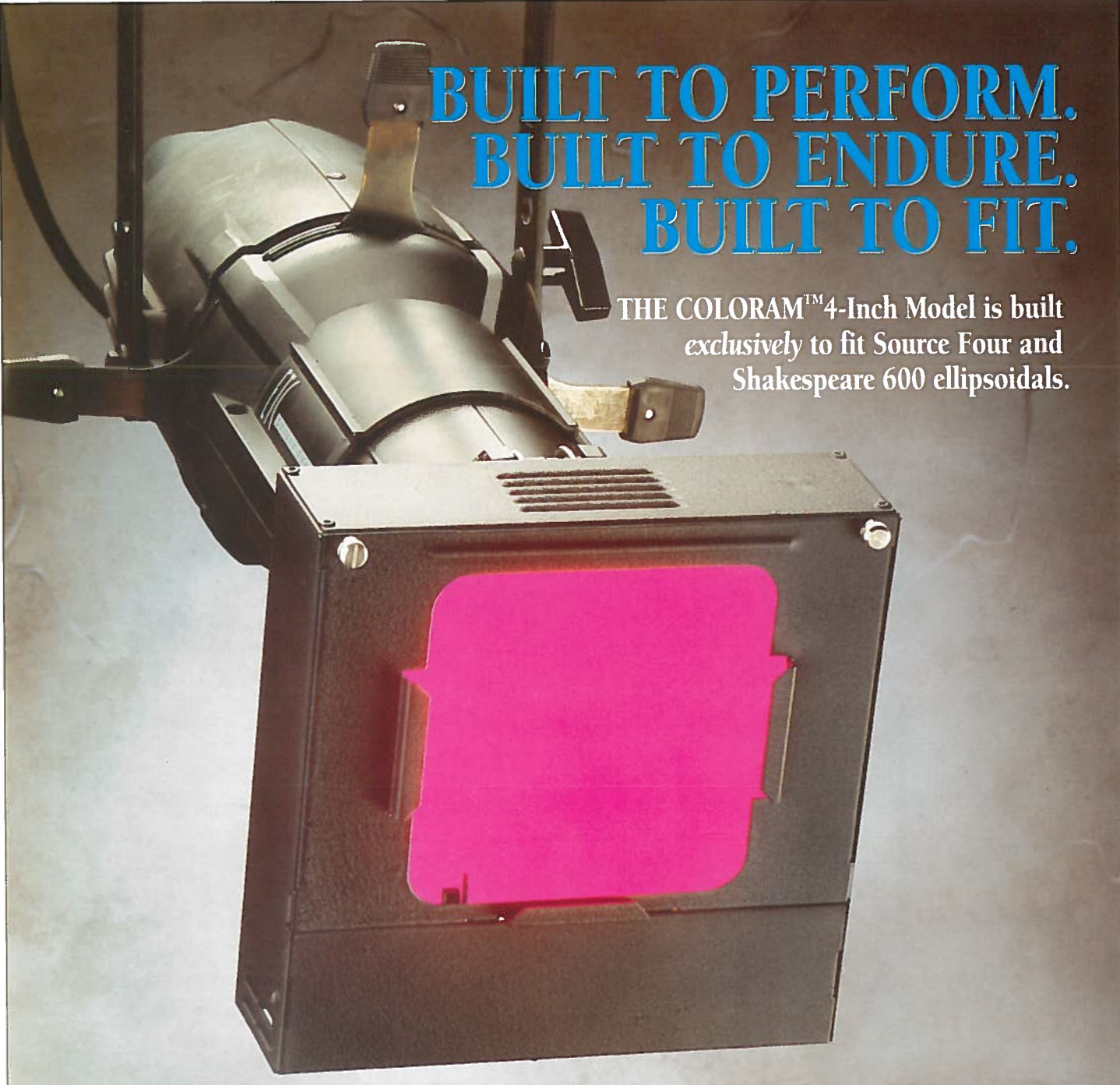
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						Wybron	47/IBC



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THE COLORAM™ 4-Inch Model is built exclusively to fit Source Four and Shakespeare 600 ellipsoidals.

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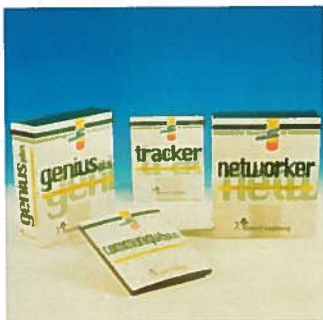
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