

LIGHTING+SOUND

International



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- Lighting by Degrees: teaching lighting design at Rose Bruford College
- Pop hot shots Ocean Colour Scene live in Leicester
- Audio Update from the AES exhibition in Los Angeles
- The latest news from the EMC front

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DECEMBER 1996

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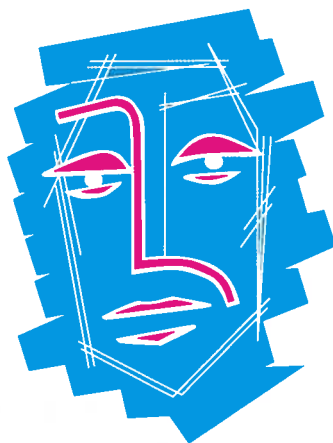
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LIGHTING+ SOUND *International*

DECEMBER 1996

VOLUME 11, ISSUE 12

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The views expressed in Lighting and Sound International are not necessarily those of the editor or the Professional Lighting and Sound Association

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World-ETF Appoints First Chairman

The World-ETF (World Entertainment Technology Federation) held a meeting in late November in conjunction with the LDI trade show in Orlando, Florida. Present were Paul Adams, Matthew Griffiths and John Offord from PLASA, Florian von Hofen of the VPLT and Paul Vincent, Tom Young and Lori Rubinstein representing ESTA.

Paul Vincent was formally named chairman of the World-ETF, a term of office which will end with LDI 97, at which time the chief elected officer of either PLASA or the VPLT will take over the role. As the chairmanship rotates



Left to right: VPLT's Florian von Hofen, newly-appointed World-ETF Chairman Paul Vincent of ESTA and PLASA chairman Paul Adams shake hands on the deal at LDI in Orlando.

through each member organisation of the World-ETF, that association will be responsible for arranging meetings, keeping minutes and publishing press releases. The members of the World-ETF also announced that a full member of one of the three associations may automatically be accepted as an international member of either of the other two associations upon completion of the application and payment of the fee. The normal approval procedure will be waived in these cases.

The World-ETF will continue to expand its Web site to include a calendar of important trade shows around the world including a description of the market the show serves, future dates and contact information. The Federation also intends to develop a comprehensive listing of Standards and related activities from around the world that affect the members of all three organisations.

The members agreed to work together to try and develop a financial profile of the size and strength of the entertainment technology industry to use in achieving government recognition of the industry and in other advocacy efforts.

Meanwhile, ESTA (The Entertainment Services & Technology Association) and Intertec Publishing Corp, owners of Lighting Dimensions, have reached an agreement in principle to work

together to benefit ESTA, Intertec's Lighting Dimensions International (LDI) trade shows, and the industry at large.

Beginning in 1997, ESTA will become an official sponsor of the annual LDI trade show, will hold its annual meeting in conjunction with the show, and will provide association support to promoting the event. ESTA will receive from Intertec a royalty for use of the ESTA name and logo. Intertec and its related properties, including Lighting Dimensions magazine, Theatre Crafts International (TCI) magazine and the LDI trade show, will support the association's recruiting efforts and Technical Standards programmes and will work with ESTA to develop jointly-sponsored workshops and seminars. As part of the total agreement, Intertec will also publish ESTA's annual membership directory.

ESTA president Paul Vincent told L+SI: "Because so many of ESTA's members either exhibit at or attend LDI, we serve our members when we help ensure that LDI continues to grow and strengthen. This agreement gives ESTA additional resources and funding needed to expand our Technical Standards Programme, helping members conduct business safely, efficiently and profitably."

LTP Light Up Ruhr



Lighting Technology Projects (LTP) has completed a substantial project to illuminate a major visitor attraction in north-west Germany called Landschaftspark Duisburg-Nord.

The park is a redundant iron works in Meiderich, North Duisberg, which has been developed into a visitor attraction featuring landscaped gardens and a wide range of facilities including rock climbing in the bunkers and diving in the water-filled gas tanks!

LTP was asked to supply and commission an animated floodlighting scheme for the project. The design was developed by Jonathan Park in conjunction with LTP and involves over 400 computer-controlled discharge luminaires and 72 neon lights which are situated around the park's three giant chimneys. The development is one of 80 proposed reclamations of industrial sites in the Ruhr, and L+SI will be taking a closer look when the site officially opens in the new year.

Get Light-headed this Christmas . . .

If you're stuck for a Christmas present this year, then why not 'see the face you love light up' with L+SI. There could never be a better time, as the new year will see L+SI's first rise in subscription rates for several years. Call now on (01323) 642639.

The L+SI team would like to wish all readers a Merry Christmas and a Happy and New Year.

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Wybron and ETC Donate to Players Theatre



PLASA members Wybron UK and ETC recently donated equipment to London's Players Theatre. ETC handed over four Source Four luminaires, while Wybron gave four Coloram colour changers. Pictured left to right are Chris Mc Cabe (general manager, Players Theatre), Adrian Offord (Wybron), Dominic Le Foe (chairman, Players Theatre), Kevin Granger (lighting designer, Players Theatre), David Catterall (ETC) and John Page (production manager, Players Theatre).

Turbosound France

Guillard Musiques, one of the leading players in the French music industry, is expanding into the areas of lighting and sound reinforcement. The purchase of Edge Sarl, Turbosound's French distributor, has put the Guillard Group at the forefront of the professional sound sector in France by bringing the Turbosound range into its portfolio, which already includes Ramsa, Carver and Mackie.

Mike Bartlett, Turbosound's managing director, welcomed the acquisition: "The Edge Sarl team have been distribution partners for many years and with the influence of Guillard Musiques behind them, I believe Turbosound can look forward to increasing its commercial visibility in France for the future."

Artificial Intelligence?

A colloquium on artificial intelligence in manufacturing has been organised by the Institution of Electrical Engineers (IEE).

The colloquium, which will be held on Tuesday 11th February at the IEE offices in London, will present case studies that demonstrate a range of artificial intelligence techniques including vision systems, neural networks and expert systems. It will also give an insight into how artificial intelligence can be applied in manufacturing industry.

For further information contact the IEE in London, telephone 0171-344 5427.

Aussie Power

Regent Inns plc's latest version of the Walkabout Inn is situated in Birmingham's Broad Street, where a chunk of their £180,000 sound, lighting and vision package has been allocated by Music Marketing Services to a range of C Audio modules which are used exclusively to power the Martin Audio sound system.

The frontage of the old wharf, which has now been extended to the Birmingham Canal, has been turned into a daytime cafe serviced by six Martin Audio ICT 300s, run full range. Inside, the restaurant sports 12 EM75, underpinned by six EM250 bass cabinets and the stage system is served by two Wavefront 2s, with enclosed WS2 bass cabs providing extended low frequency throughout. Martin EMX1 and WX3 crossovers are used, while an M1 affords speaker protection to the ICT 300s. Both areas are driven by a combination of two C Audio SR 606s, seven SR 707s and an XR 3801.

Upstairs, the 150-capacity Gold Coast features Martin ICT 300s, run full range with an M1 system controller and driven by two further C Audio SR 606s, while the subterranean Surfers Paradise discotheque sports four Wavefront 3s over the stage with four WSXs serving the bottom end, run as a three-way system. This is infilled with four W2s, while the peripheral and bar sound is supplied through six further EM75s and is powered by a combination of two C Audio XR 5001s, two XR 38011s and two SR 606s.

Strand at the Garrick



Neil Pankhurst of the John Lyon School (left) and ALD member Richard Haines (right), flank Chris Wilcox at the 550 desk. Strand's Bill Richards looks on.

In late October, Strand Lighting invited lighting designers from across the industry to try out their latest moving spotlights and new profile spots at the Garrick Theatre in London. The company felt that the set in the theatre, home to the acclaimed production of 'An Inspector Calls', offered much more interesting possibilities for experiment than their own facilities in Isleworth.

For the four-day series of demonstrations, a Strand 550 system (operated by Chris Wilcox of the Hawth Theatre, Crawley) was linked together with eight of the new Pirouette moving yoke PC spotlights fitted with scrollers sited in the balconies and front-of-house. Strand's new Brios were also in evidence in the upper gallery and stage left.

The Pirouettes, first seen at PLASA, were stringently tested on a number of projects prior to their launch at Earls Court and their appearance at the Garrick provided another valuable opportunity for feedback. Over 50 people attended across the week, including many members of the ALD.



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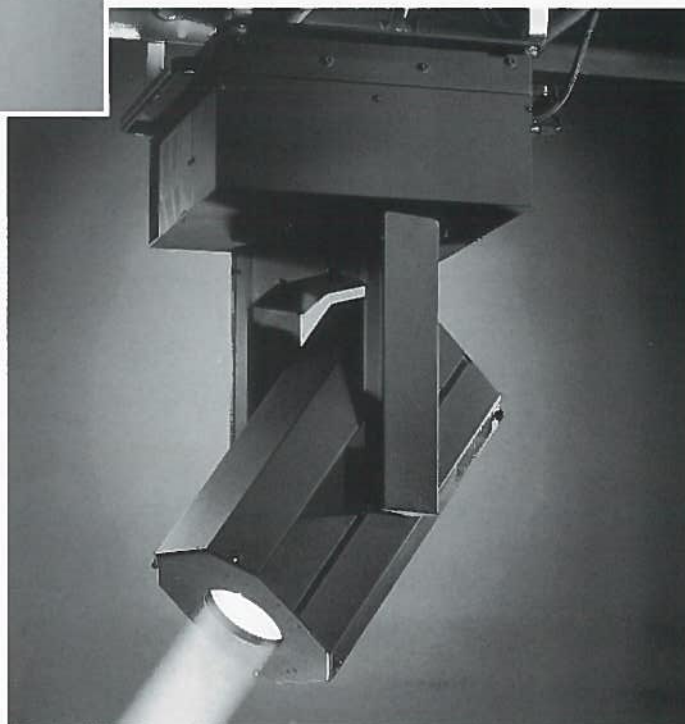
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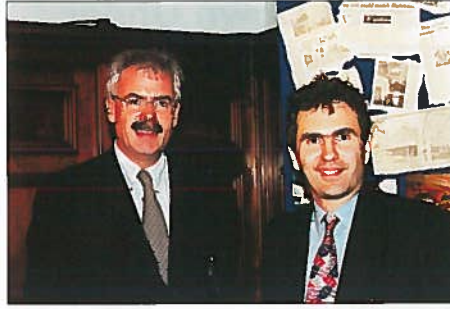
ABTT North Finds Success in Harrogate



Left to right: Alan Luxford, David Cusworth and Bill Richards of Strand.

Following its appearance two years ago at the Royal College of Music in Manchester, the ABTT North exhibition made a successful return this autumn to the Harrogate International Centre. Feedback from exhibitors indicated a general improvement in both attendance and overall success compared to the previous event.

The first day of the show's seminar programme included a talk by lighting designer Francis Reid titled '65 and never had a day job!', a lighting design forum held by representatives from Strand Lighting, a talk on how the National Lottery has benefited theatre, and a session by Eric Pirie on Risk assessment in the theatre. The second day was reserved for a series of presentations on theatre designer Frank Matcham. These included David Wilmore's session on the craftsmen who



David Wilmore (right) in front of the Frank Matcham exhibit with ABTT's Tim Foster.

built Matcham's theatres, a talk on his recently-discovered architectural drawing collection and a session with Matcham's great nephew Brian Matcham titled 'Matcham the Man'.

Exhibitors at the show included AC Lighting, British Harlequin, Marquee Audio, CCT Lighting, Futurist, Harkness Hall, Teatro, Le Mark TVS, LMC Audio Systems, ADB UK, Lite Structures, Penn Fabrication, Strand Lighting, Action Lighting North, White Light North and Wigwam Acoustics. ADB were demonstrating their Vision control desk along with their 105 and 205 range of profile spotlights, while on the CCT stand was the award-winning Freedom range of profile and Fresnel fixtures. Teatro's Andy Collier was on hand to show the new Versa-Disc colour effects wheel and the Colourbox 2 colour changer.



CCT's Don Hindle (left) looks on as White Light's Bryan Raven samples some Freedom.



ADB's Jackie Staines and Nick Mobsby with Richard Brett (centre) of Technical Planning.



Michael Lister of Futurist (left) joins Lite Structures' Adrian Brooks and Emma Lee.



On the Teatro stand, lighting designer Francis Reid (left) talks to Andy Collier.

PIGI Helps Christmas in Birmingham

The Christmas lights in Birmingham this year have been given an extra boost by the addition of two 5kW PIGI scrollers from ETV UK Ltd.

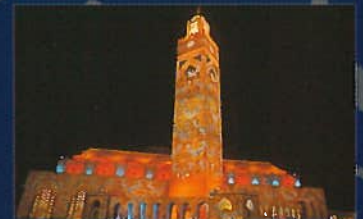
Projecting onto the side of the City Hall in Birmingham's Victoria Square, each projector covers a 25m by 20m area of the building. The two PIGI projectors create complicated lighting effects, including a sequence where the images from one projector appear to pass behind the pillars of the building, while the pillars are lit separately by the second projector. The projections will last until December 23rd, and will be featured on the BBC's How Do They Do That? programme on December 18th.

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Limelight Sales

Lighting Technology have sold 12 Limelight 2k Xenon ballasts to Melbourne-based Bytecraft Pty. The sale follows the company's participation in the PLASA/DTI-sponsored UK group excursion to the Entech exhibition in Sydney earlier this year, and the subsequent PLASA-organised Australian trade mission to the PLASA Light & Sound Show in September. The new ballasts replace the un-serviceable wire-wound models currently in use with older followspots.

Bytecraft, as the company's Australian distributor, purchased the ballasts for the Victorian Arts Centre in Melbourne.

Futurist at the Café

Millennium Restaurants, owners of the recently re-opened Café de Paris in London's Leicester Square, turned to Futurist to carry out the new lighting installation for the venue.

Futurist worked in collaboration with lighting designer Benny Ball, using a high performance CAD workstation to design working drawings of the system. Clay Paky Golden Scan HPEs play a major part in the design, backed by 12 Clay Paky Combicolours, 12 ETC Source 4 575W Pars and two DF50 light enhancers along with a Jands Event Plus 120 fader memory/manual control system.

World's Largest Screen Down Under



The world's largest fixed projection screen is up and running in Sydney, Australia. Designed and built by Boreham Wood based Harkness Hall Ltd, the 11.314sq.ft Imax screen has been installed in the Panasonic Theatre at Darling Harbour.

Currently featured in The Guinness Book of Records with their Korean 'Worldbeater' installed for Expo 93, the company awaits official recognition of this new giant which outstrips the previous record by an overall 7.9ft x 15.5ft.

Harkness Hall have been involved with nearly 200 Imax systems throughout the world, including the UK's only Imax screen at Bradford's Museum of Photography, Film and Television.

TOA Plans for New Era

Within weeks, TOA Corporation plc will begin construction of their new headquarters in Brentwood, Essex. The new corporate facility, due for completion in September 1997, is located on the same site as the company's existing premises and will reflect the changing identity of the company in the UK.

The new facility will house the technical, sales and marketing departments of the company, with the warehousing and distribution operation being run from a separate location. With a new purpose-built showroom and training facility on site, the TOA team will show its commitment to building closer relationships with its customers in the UK market.

Also on the move is TOA's manufacturing subsidiary Rotor, which will provide TOA with key local manufacturing resources.

HK in the Bandstand

Manchester pro audio dealer Rockys have won the contract to supply Greenalls PLC brewery chain with complete HK Audio sound systems (distributed in the UK by John Hornby Skewes) for their forthcoming 'Bandstand' live music venues. The specified systems include Linear Pro 24130 drivers, HK2445T Target mixing consoles and VC2400 and VC1200 HK Audio power amps, using Pro Control modules and dual stereo graphic EQ.



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CompuCAD Gains Excellent Response



CompuCAD under demonstration.

Stagetec, UK distributor for Compulite, recently hosted two days of seminar sessions at the National Theatre for demonstrations and discussions on a pre-release version of Compulite's forthcoming CompuCAD lighting design software package. A wide cross-selection of people were invited to the sessions and over 50 attended, including eminent lighting designers such as Rick Fisher and John B Read, as well as chief electricians and technicians from some of the country's foremost venues.

The sessions consisted of a one-hour presentation followed by another hour of hands-on, where attendees could see the package in operation. Present were Amit Resh and Yuval Shoshani from Compulite, Ben Tzion Munitz, professor of lighting design at Tel Aviv University, and Niv Sadeh, a freelance lighting designer who has been the first to use CompuCAD on a theatre production.

The package allows the designer to go from the initial conceptual design right through to highly accurate full-colour 3D rendering of each individual look, in a series of simple steps. Rigs and fixtures are created by simply dragging and dropping from on-screen libraries. Stagetec's Andy Stone said that the response to the package had been exceptional, with some very valuable feedback received. The first release of CompuCAD, which will aim to combine as many of the suggested features as possible, is expected for April next year.

Stagetec was recently awarded second prize in the Thames Valley Business Awards, in recognition of their excellent customer service and innovation. The company's marketing manager, Marina Herrera, accepted the award from Lord Denis Healy.

Down to Earth

Howard Eaton Lighting Limited (HELL) has recently completed an unusual installation at The Natural History Museum's new Earth Galleries.

The Galleries represent the museum's largest single exhibition project and feature a glass-topped atrium which welcomes visitors to the 'Visions of Earth' exhibition. Dominating the space is a revolving globe of beaten copper, iron and zinc measuring 11 metres in diameter and suspended around one of the highest escalators in Europe. The escalator carries visitors on a journey through the centre of the Earth, with pulsating sound and lighting effects, the latter installed by HELL. The company also installed all the lighting elements associated with the globe, which included ETC Source 4 profiles and custom cold cathode light boxes to illuminate the inside to spectacular effect.

Ministry of Sound Upgrade

South London's Ministry of Sound dance venue has recently carried out a major sound system upgrade designed to carry them through the millennium.

Increasing its already substantial stock of JBL products, the Ministry has added a pair of powered EON 15 speakers in the venue's second VIP room, used by DJs and other industry figureheads. It has also recently taken delivery of a Soundcraft D-MIX500 and D-MIX1000 DJ mixers. The mixing desks are used as mobile units for the various dance entertainment areas.

The club have also replaced their existing bi-radial horns with Martin Audio high/mid boxes, specified by New York-based GSA and custom-designed by Martin's engineering director Bill Webb, and have appointed three of Crest's 3U 9001s to drive their sub bass system.



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Stage is Set for London Music Week

Next April's London Music Week Live is already on target to be one of the largest music events ever seen in the capital. The event, which runs from April 26th to May 2nd, will provide a conference and exhibition, alongside a festival of live music across a number of London venues.

Dominated by new contemporary music, with a major element of the programming being part of the Radio One Live at London Music Week broadcast, the week will include dance events, industry showcases, and over 100 unsigned acts playing in the Islington-based LMW fringe.

Key London venues already on-board include the Mean Fiddler Group, the Borderline Group, Wembley Arena, the Royal Albert Hall and London Docklands Arena. Over 40% of space has been sold and exhibitors on the 'trading floor' will include record label companies and publishers, alongside suppliers to the industry, including distributors, media, manufacturers and trade associations.

Among those already confirming space are Wembley Arena, FX Rentals, CPI, PRS, Music Week, Radio One, Vital Records, BBC Worldwide, Mars, and Music Choice Europe. The BPI have taken a group stand for member labels to participate, and both the PRS (Performing Right Society) and the IMF (International Managers Forum) have confirmed their early support.

Feature areas in the exhibition include a 'dance street' providing smaller spaces for dance labels, importers, exporters and dance related media. A 'studio build', in conjunction with a major recording studio, will provide a working studio available for impromptu showcasing, and an arena for supply companies to exhibit the latest hardware and software products. A 'multimedia village' is being built, for software developers, and hardware manufacturers providing communications on site, and real-time facilities for artistes and labels. It will also feature a 'stage set' for touring, lighting, sound, catering and backline companies.

For further information contact London Music Week on 0171-359 3535.

Onwards for Vertigo



Vertigo Rigging celebrated entry into their third successful year by moving to larger premises in London's Elephant & Castle. Run by Becky Loughlan and Tim Roberts, Vertigo's recent projects have ranged from rigging the Peter Greenaway room at the Spellbound art and film exhibition at the Hayward Gallery to the complex moving scenery, projections and lighting for Tommy at the Shaftesbury Theatre.

Vertigo have also made a substantial investment in new equipment, including CM Lodestar motors and a full range of the latest trussing. In the personnel department, Paddy Burnside has joined the team as project manager. He has worked for Vertigo as a freelance on numerous occasions, including *Sunset Boulevard* in Germany for The Really Useful Group and more recently on Vertigo's installation of large scale projection and screens for Blink TV's live broadcasts from all the UK's major arenas.

Current contracts include *Miss Saigon* in Holland (pictured above) which was the first job for the new Lodestars. The company's new computer system and information technology came into its own during the pre-production period of this show and Vertigo, who excel in the art of heavy lifting, were also specialist rigging contractors for the recent MTV Awards.

Vari-Lite Gobo Competition

Vari-Lite Inc is holding a Gobo competition which is open to all undergraduate and graduate students. The Competition offers a chance to win Vari-Lite training and/or cash. If you are artistically inclined and would like to see your gobo in lights, submit your artwork to Vari-Lite by January 31 1997.

All winning gobos will be added to the company's existing Vari*Image gobo catalogue and the prize winner will receive Vari-Lite technical and operator training plus Vari-Lite swag (or an alternative cash prize of \$1,000). Second and third place winners will receive \$250 each, along with Vari-Lite swag.

For further details contact Vari-Lite on Tel: 1 (214) 630 1963 Fax: 1 (214) 630 5867

New Stage Electrics Company Launched

The Production and Event Services department of Stage Electrics and one of its group companies, set Reaction, will be amalgamating to become SLX Ltd.

This new company has been formed to focus on specific markets in the entertainment, leisure and presentation industries. SLX will continue to use Stage Electrics equipment and will work closely with the other companies within the Group.

SLX Production Services will provide lighting, rigging and power distribution services and SLX Presentation Staging will specialise in providing the complete technical package, set, staging, sound, lighting, rigging and audio visual equipment to stage corporate and leisure events.

SLX Studio Facilities will provide studio space for hire, together with set building and other technical facilities and lastly, SLX Theatre Set Hire will offer stage sets for touring and amateur theatre companies together with support services

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New Sound for State Theatre



The State Theatre in Pretoria, South Africa.

The recently-launched Cadac F-Type live production console has been commissioned by the State Theatre in Pretoria, South Africa. Purchased by the Performing Arts Council of Transvaal, the State Theatre's F-Type is configured as one 26-module frame (equipped with 12 of Cadac's basic input modules and a 44-output master section), with a floating 36-input extension frame for other applications, providing up to 48-inputs in total.

The console was supplied via Tru-Fi Electronics SA (Pty) Ltd, and specified with all inputs and outputs duplicated on multiway connectors. They are then routed via multiway cables to a local 1/4" longframe jackfield, with access to the theatre signal reticulation. This system enables the console to be rapidly moved between the State Theatre's two principal theatres, both of which are equipped with the same multicore arrangement.

White Light in the West End

White Light Ltd is providing the lighting for one of the latest shows to hit the West End.

ART is currently on stage at Wyndham's Theatre in the West End, following its 18-month run in Paris. Produced by David Pugh Ltd and Sean Connery and translated from Yasmina Reza's original by Christopher Hampton, ART is directed by Matthew Warchus, who won the 1995 Evening Standard Award for Best Director for 'Volpone'. The set has been designed by Mark Thompson, with lighting design by Hugh Vanstone and Fraser Hall as production electrician.

Vanstone has used a mixed rig of conventional lanterns with two 575 HMI Fresnels, supplemented by two Strand Pirouette Pals and three Martin PAL 1200s supplied by The Moving Light Company. These are controlled by the theatre's own control desk - an ARRI Imagine, using DMX. White Light have also supplied lighting for Smokey Joe's Cafe. See separate news piece: 'M&M Provides Link'.

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With these words at the forefront of our minds we designed a 16 frame advanced technology colour changer with few moving components housed in an injection moulded UL listed composite shell that is light, quiet and inherently durable.

We also tried to solve some of the more practical problems associated with normal colour changers. For example, we optoisolated

the DMX connectors to eliminate control problems, we made each unit separately DMX addressable to ease setup, and insisted that if the units temporarily lost power during a show, they would remember where they were without going through that embarrassing calibration sequence when power is restored. Servicing was a design priority too, the complete colour changer can be stripped in under a minute with the removal of just 4 screws.

This uniquely designed product has had quality built in right from the start. All components are manufactured by ISO9000* companies and the assembled colour changer goes through an exhaustive final testing procedure prior to shipment.

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*ISO9000 is a quality standard recognized world wide indicating excellence and consistency

Sensor First at Anglia



Nigel Sadler of M&M, seen here with the ETC Expression 2x control console in Studio E at Anglia TV, was at the station when the new system went 'live'.

Anglia TV can boast the UK's first installation of ETC's Sensor CE dimming system. The system, which was supplied by M&M along with two Expression 2x control consoles, went into use in time for the recording of After Hours with Tom Robinson, a series of three one-hour music specials.

Anglia is a particularly busy station, producing both national and regional programmes and will also be making programmes for Channel 5. It is the station's two main studios which will benefit initially from the ETC equipment. They are in use 23 hours out of every 24, so every piece of equipment has to be reliable. The 328 x 5k channels of Sensor dimming, in five 72-channel cabinets, provide the same configuration as the previous system, but in just 10% of the floor space. In addition to the dimming, M&M has also supplied two Expression 2x control consoles each with a Reflection back-up console, remote focus unit and designers worksheet.

With the studios in continuous use, time is understandably at a premium and the Sensor CE was chosen for its monitoring system which provides information on lamp failures, dimmer performance, dimmer temperature conditions and dimmer input voltages. M&M, together with ETC Europe, provided Anglia with intensive training sessions and staff from both companies were also on hand for the first few working days after installation.

Comulite Cite Record PLASA

Comulite's UK distributor, Stagetec, has reported their busiest ever PLASA Show. The company, which was showing a large amount of new product, left the Show with a briefcase full of confirmed orders.

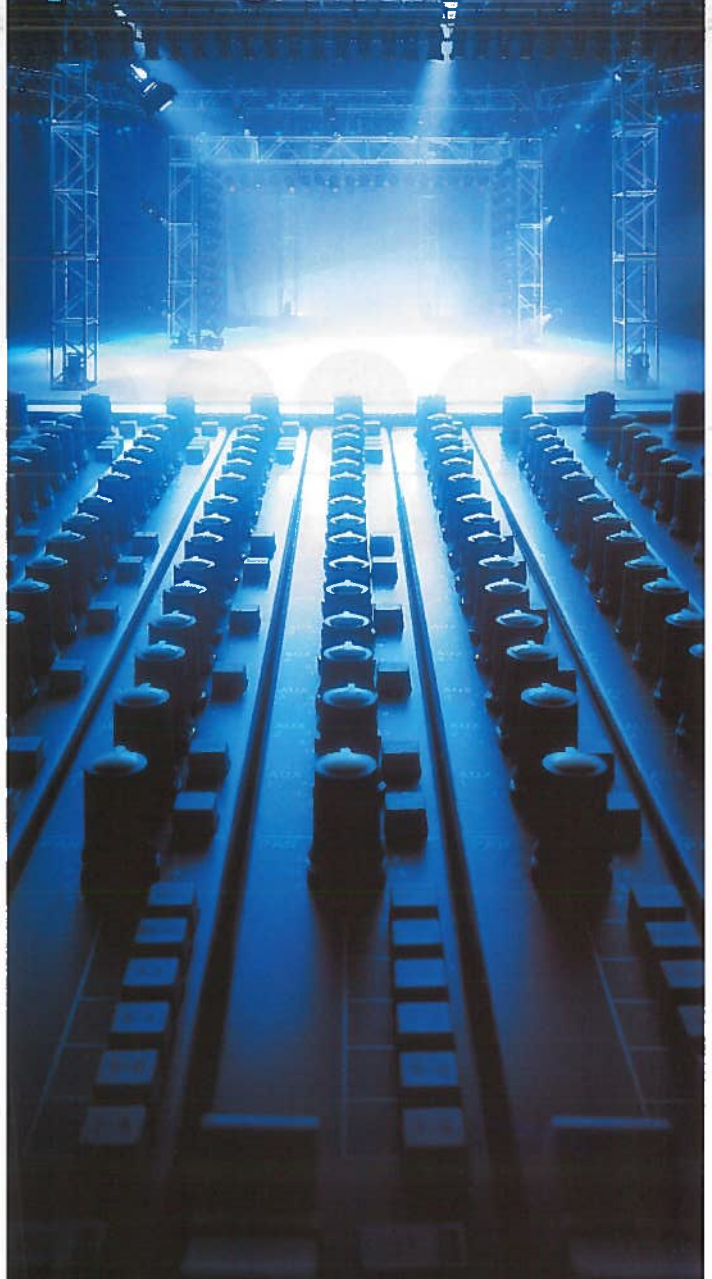
These included Spark moving light control systems to Quantum Lighting Hire in Birmingham and Richard Martin Lighting in London, and a Photon lighting control system and Whisper colour scrollers, together with a touring lighting system supplied via dealer Illusion International, to Hijinx touring theatre company based in Cardiff.

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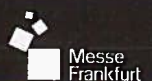
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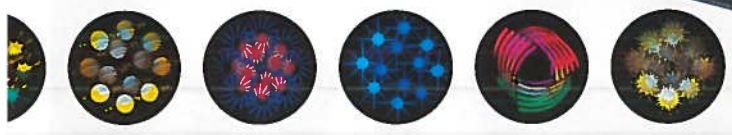
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STAGE SCAN



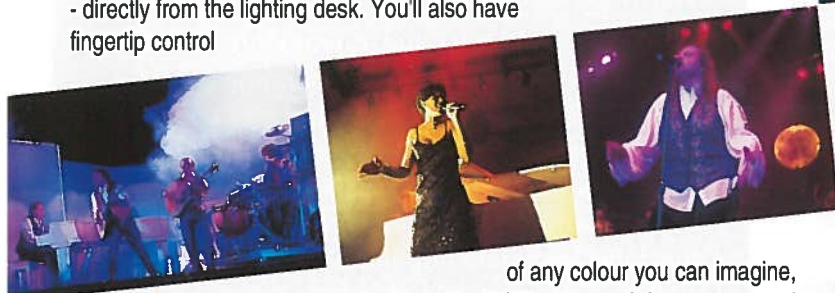
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The only limit is your imagination.

STAGE SCAN - the brand new luminaire for lighting designers working in the concert, television and theatre sectors. This new fixture joins **GOLDEN SCAN HPE** and **SUPER SCAN ZOOM** to create an absolutely matchless trio, setting industry benchmarks in terms of performance and reliability in the professional lighting sector.

With Stage Scan there's no need to hang around for the bulb to cool before switching on again: the built-in **hot-restrike igniter** means that the luminaire is always ready for action. You won't even be left in the dark after momentary power failures, so there's no need to keep your fingers crossed during thunderstorms! And when the shutter is closed, you can either power down the luminaire direct from the desk or select automatic power-down.

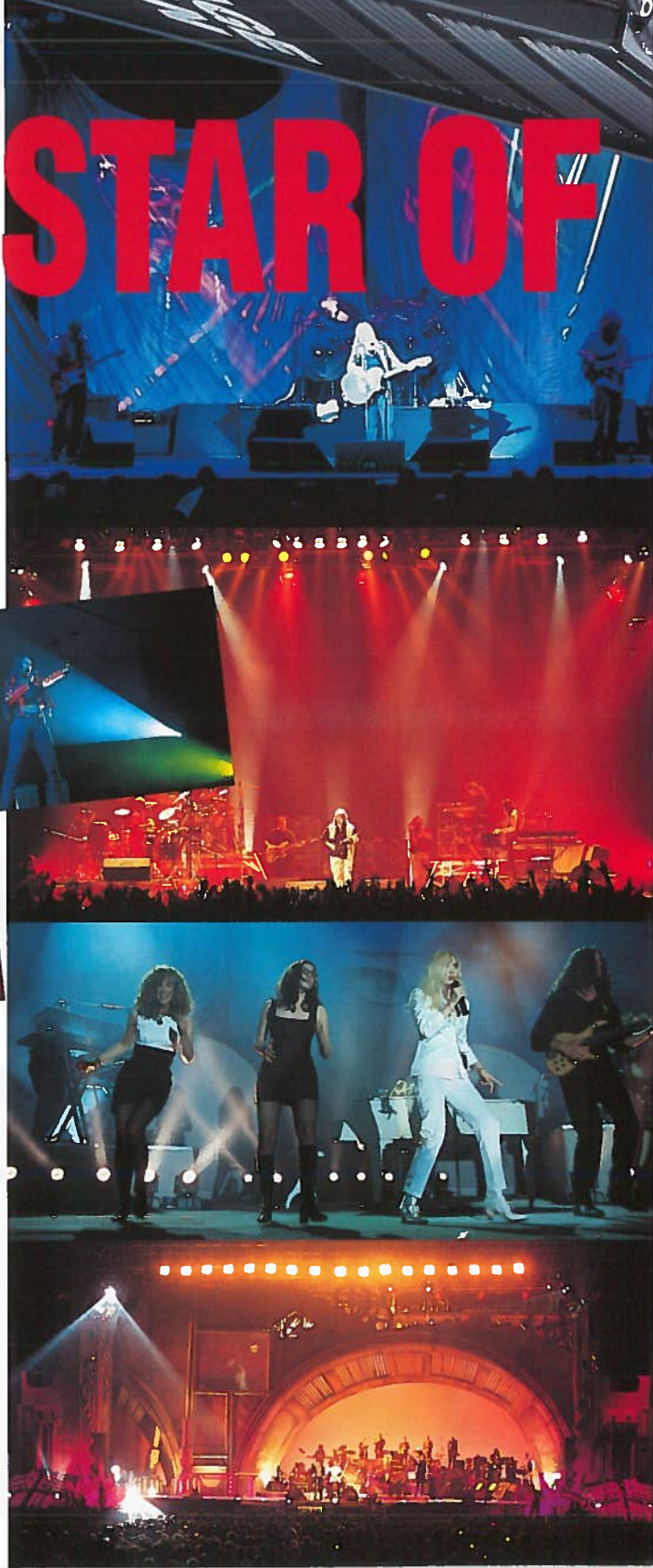
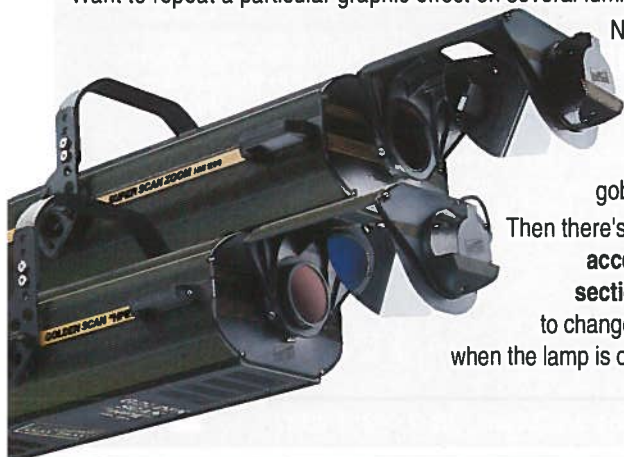
Stage Scan's innovative **MSZ (Multi Step Zoom)** system provides apertures from 13 to 25 degrees by selecting the most suitable of the fixture's 6 lenses - directly from the lighting desk. You'll also have fingertip control

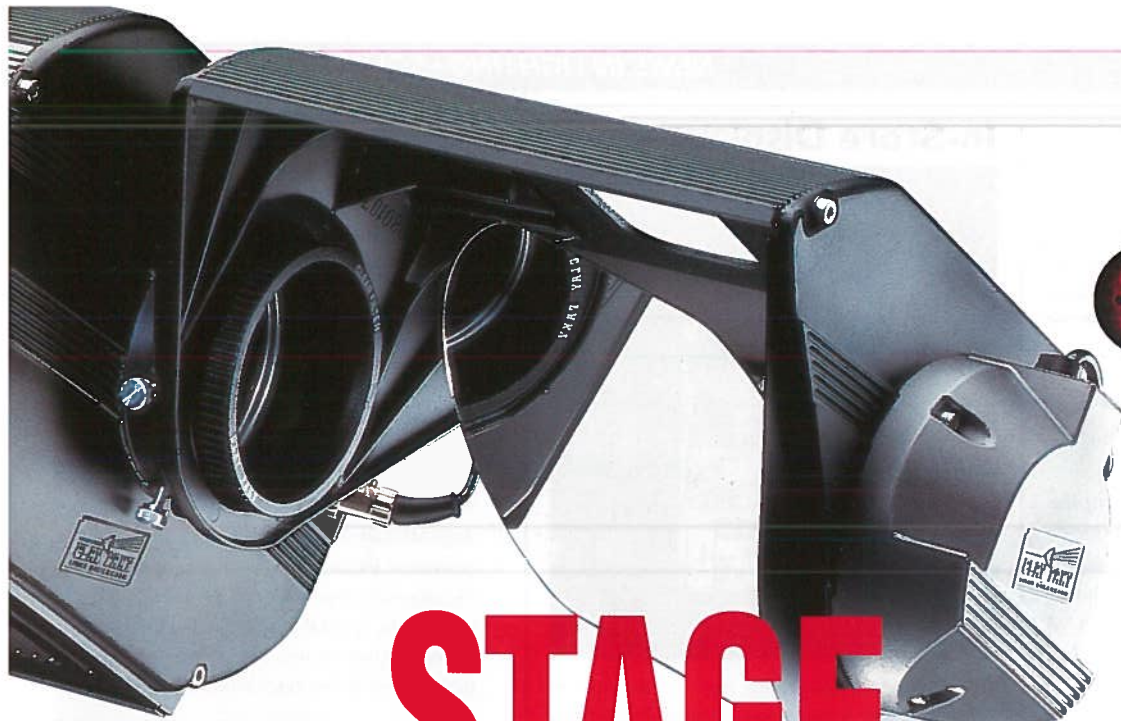


of any colour you can imagine, thanks to the **RGB colour mixing** system and to the special frost filters including the **exclusive Clay Paky "fou effect"**. Want to repeat a particular graphic effect on several luminaires?

No problem - Stage Scan features a **rotating prism indexing** system in addition to **gobo wheel indexing**.

Then there's the **independent access to the effects section** that allows you to change gobos, etc. even when the lamp is on, without burning





THE STAGE

your fingers or getting dazzled. That's just one of the details that make Stage Scan particularly suitable for professional applications.

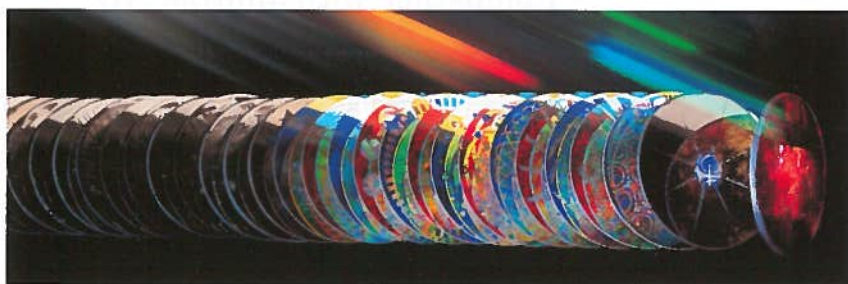
Further examples include: **easy access to the electronics**, mounted on the inside of the conveniently hinged back cover; conventional fuses replaced with

the more efficient and safer **circuit breaker**; totally simple **mains voltage/frequency changeover** system, making Stage Scan fully compatible with all world electricity grid standards. Noise? Hush! - every Stage Scan luminaire features a carefully designed **silencing system** that will meet the tacit approval of even the most attentive audience. So if you're into stage lighting, you've probably realised by now that Stage Scan has absolutely top-level credentials - just take a glance down this features checklist:

- HMI 1200 lamp, 110,000 Lumen, for uniform color temperature and extended life;
- Hot-restrike igniter;
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- 4 M-size metal gobos - static position and interchangeable;
- 4 interchangeable rotating gobos (indexed positioning), including two dichroic glass gobos;
- 10 additional gobos supplied as standard in a special housing in the body;
- RGB colour mixing with ultra-pure dichroic filters for an infinite range of colours;
- Special effects filters (bi-colour concentric beams, four colour beams, colour temperature conversion and ultra-violet);



- Three frost filters including the exclusive Clay Paky "fou effect";
- Multi Step Zoom (MSZ) for beam angles of 13°, 14,5°, 16°, 18°, 21° and 25°;
- Electronic focus;
- Independent access to the effects, to the lamp and to the electronics sections;
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- Circuit breaker replacing fuses;
- Voltage/frequency changeover system;
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Jands' New Mascot

Jands Electronics, of New South Wales, Australia, is moving from its St. Peters-based factory to new purpose-built 80,000sq.ft premises in the town of Mascot next month. From December 16th, the company can be contacted at 40 Kent Road (Locked Bag 15), Mascot, NSW 2020. Telephone (02) 9582 0909, Fax (02) 9582 0999.

New Sound Studio at Cinecitta, Italy

The legendary Cinecitta production complex, which has brought many historical figures to life on the silver screen, is stepping confidently into the next century with the opening of a second mixing studio, for film sound post-production. A 40-channel Solid State Logic SL 4000 G Plus console has been installed which features VCA Automation and special film panning options.

The two mixing studios are Dolby Stereo digital equipped and complemented by three film/video dubbing/editing studios; two film/video digital sound editing suites specialising in sound restoration for archive films; two re-recording suites, and many other facilities. With all this, plus an exhaustive complement of ancillary services, it's no wonder that many international box-office hits including *Cleopatra*, *Adventures of Baron Munchausen*, and more recently *Cliffhanger*, have been produced at the Cinecitta complex.

In-Store Display



The Lighting Department, set up to provide lighting design services to the retail and display markets, supplied and installed the lighting for the window displays of the new Harvey Nichols store in Leeds. The store gave The Lighting Department a brief to supply lighting equipment which would provide an exciting diversity of lighting schemes for the future. The company's Richard Rafter chose a range of low voltage and metal halide lanterns, together with gobo projectors and effects equipment. A four-channel lighting track offers a variety of options at the flick of a switch and glass dichroics were chosen to provide longer life and greater depth of colour.

Judgement Night

Temporary power specialists, Templine, played a vital role in helping to bring boxing's 'Judgement Night' to fight fans throughout the world.

The company, based in Bristol, provided the electrical power to the Nynex Centre in Manchester for the British end of the big fight night, which saw Steve Collins defeat Nigel Benn and the flamboyant Prince Naseem Hamed defend his WBO World Featherweight Championship against Argentinian Remigio Molina. Templine provided extra power for the centre so that it could cope with the demands of the ring lights, special effects during the entry of the gladiators and all the requirements of worldwide live television coverage.

Jumbos in Dubai

Screenco have shipped 16 Jumbotron JTS35 screens to Dubai for use on a variety of projects, including sports and entertainment events. The first outing for the screens will be at the launch night of the 1996-97 racing season at The Dubai Racing Club at Nad Al Sheba. Initially, enquiries will be handled by the company's UK office or through Sony Dubai, but Screenco have plans to establish an independent presence in the area.

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Pulsar Appoint Stonex



Derrick Saunders of Pulsar with Domingo Labarre, president of Stonex.

Stonex SA, based in Madrid, have been appointed the new exclusive distributor for Pulsar products in Spain. The company have many years experience in the entertainment industry, having undertaken projects across the club, theatre, auditorium, TV, studio and theme park industries. They already have a showroom in Madrid and plan to build a new one to accommodate the full Pulsar line, which will include the award-winning Masterpiece and new Rack Pak range.

Pulsar now have several offices throughout Spain, including facilities in Valencia, Alicante, Almeria and Granada.

HSE Laser Guide

As many in the industry will be aware, most lasers used in entertainment are bright enough to damage the eye and very high power systems may even cause skin burns. A new guidance document published by the Health and Safety Executive (HSE) gives advice on the safe use of display lasers, especially when used for audience scanning. The leaflet reminds those responsible for laser displays of their legal duties to control the level of risks from laser radiation.

The guidance also gives practical advice on how to operate and build safe equipment and will help those who manufacture, supply or design display laser equipment, as well as those who install and use it. For a copy of the document contact HSE in Sudbury, telephone (01787) 881165.

ETC 'On Air'

Several of Europe's major television studios, including the new MTV studios at Denmark and Hollyhammar in Sweden, have recently installed ETC lighting control systems.

MTV Productions A/S has just completed two new TV production studios for which Bico Professional aps of Denmark won the contract to supply the control, dimming and luminaires. As a result, the company supplied MTV with an ETC Insight 2x console, six SmartRacks and 12 SmartPack digital dimming systems. The system is controlling some 200 Arri Studio luminaires, plus a number of colour changers.

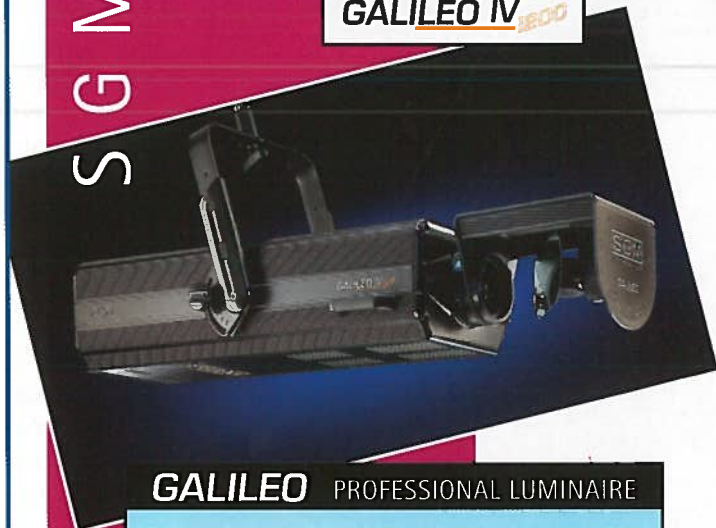
Also through Bico, Nordisk Film Broadcast A/S has just replaced equipment in one of its studios. The heart of the system is again an ETC Insight 2x, with Wireless Remote Focus unit and designers worksheet. Another former factory, this time in Sweden, has been converted to provide the studios and sets for a new soap opera, Vänner & Fiender (Friends & Enemies), for which SFL, ETC Europe's Swedish distributor, has supplied the lighting control, dimming and cabling. The studio has two Expression 2x control consoles, each providing 600 control channels, rolling SmartRack dimming systems and 20 SmartPacks, together with a DMX multi-core network.

C O N C E P T



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Your Positive Option

Loadsa Lodestar

Following a successful PLASA 96, PCM's export orders have gone through the roof, reflecting the very international flavour of visitors to the show. Contracts commenced at the show and completed since include substantial shipments of Lodestar hoists to Belgium, Yugoslavia and Israel.

Meanwhile in the UK, Vertigo Rigging Ltd have made a major commitment to Lodestar motors. The company have just moved into new, spacious warehouse premises and the purchase of over 20 one ton Model L motors for hire stock reflects a growing workload.

Other orders include special motors conforming to safety standard VBG 70 which is required for rigging and installation work in Germany - specifically when objects are being suspended and moved above people's heads. Additional safety features on these include special limit switches, a double brake facility and a designated safety factor of 12:1.

The first job for the Vertigo Lodestars was a project for Imagination Ltd who used them on the recent Ford Mondeo launch at the Royal Victoria Venue in London's Docklands.

Lighting for a 'Super-Stadium'



Unique in Europe (and, in terms of the facilities offered, probably the world), the new Amsterdam ArenA which cost in the region of 200 million guilders was officially opened by Queen Beatrix of the Netherlands in mid-August. Since then, it has offered regular top football action, as home ground of Ajax of Amsterdam and venue for the Dutch national team.

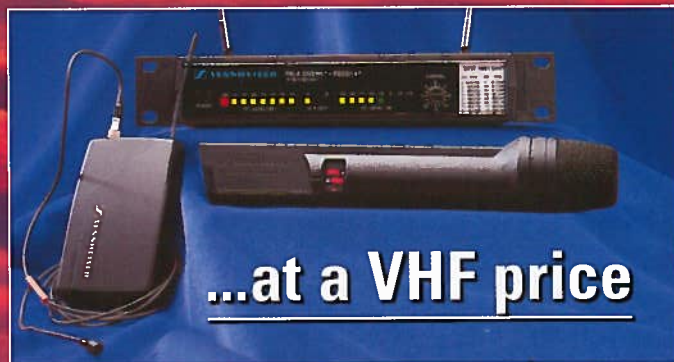
However, not only the players and spectators have benefited from all this new technology; armchair fans, too, have been able to enjoy better quality televised coverage, thanks to Philips' ArenaVision floodlighting systems. The floodlighting comprises 320 ArenaVision systems equipped with 1800W MHD metal-halide lamps, suspended from the roof on either side of the pitch. Philips PowerVision floodlights with 2000W metal-halide lamps provide good visibility for the spectators in the stands. An emergency lighting system, consisting of battery-operated 1500W halogen lamps, is installed to take over in case of power failure, whilst further PowerVision floodlights with 1000W high pressure sodium lamps illuminate the facade. Designed with multi-functionality in mind, the Amsterdam ArenA has already played host to many events, including sell-out concerts by Michael Jackson and Tina Turner.

Peavey Into Battle

Peavey Electrics are to sponsor the Battle of the Bands competition, which is to be held in Sheffield early next year. The company will provide two sets of backline, drums and PA gear for the first heats at The Roundhouse in Sheffield. The equipment will then be transferred to Granada Studios in Manchester for the final stages.

The two finalists will win Peavey equipment and an opportunity to perform live at the Don Valley Stadium in Sheffield as part of a two-day music festival featuring many of the country's more established artists.

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Starstruck/Squire Joint Relocation

Starstruck Professional Sound & Light and Squire Sound and Light (Scotland) have announced that from Monday 4th November the contact details for both companies will have changed to: 1/2 Queen Margaret Road, Kelvinside, Glasgow G20 6DP, telephone 0141- 946 3303. All operations from 14 Carmyle Avenue, Tollcross, Glasgow, will cease from that date.

SADiE at the Beeb

Radio 1 has recently relocated to a new studio complex at Yalding House in Clipstone Street, London. Designed and built by BBC Project Management Services, the four new studios are each equipped with the SADiE disk editing system.

The SADiE mainframes are housed in an apparatus room along with other broadcast equipment and the systems are operated remotely from terminals within the studios. There are also three production offices on site all equipped with stand-alone SADiE systems. Their primary use at Radio 1 will be for programme compilation including both documentaries and music shows.

The installation marks the sale of over 400 SADiE systems to the BBC. The very first system sold to the BBC was commissioned in May 1993 at Pebble Mill Studios in Birmingham. Since then, BBC centres all around the country, including the World Service, are now using the system both for radio and TV production.

Litestructures Show Driving Ambition



Not content with traditional means of raising the company profile, trussing manufacturers Litestructures have, for the past two seasons, been sponsoring DC Cook Racing.

Company MD Adrian Brooks told L+SI: "As sponsors of Formula Renault we are delighted that David Cook has secured the Formula Championship. It has been a successful and entertaining year and we look forward to even greater achievements in the future."

You may just see the Litestructures logo on the rear of the car with the aid of a magnifying glass!

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Upping the Decibels

London-based Decibel Audio have turned to C Audio amplification to power the sound in several of Regent Inns' new theme bars, including the fast-expanding Aussie-branded chain, the Outback Inn. Ali Ghassemi, who runs Decibel, revealed that four RA 3001s had gone into the newly-refurbished Outback Inn in Covent Garden, powering Decibel's own mid-highs and RCF sub bass. A Soundcraft Rackpack, BSS DPR-402 compressor limiter, Formula Sound AVC2, two Pioneer multi-CD players and two Audio Logic SC31 31-band graphic EQs are included in a 40U rack, which sits on four heavy duty casters.

Decibel used more C Audio RA-3001s in other newly converted London theme bars for Regent Inns - The Tappit, Burlington Bertie's and Spoofers, respectively powering Decibel, Hz and RCF sound reinforcement.

Novatec Appointment

Following our news story last month on Toronto-based Novatec's appointment as Celco distributors for the United States, the company have now confirmed their US distributorship for two more British manufacturers, Citronic and Cloud Electronics.

Novatec's president, Brock McGinnis, said: "We have been very successful in establishing these product lines in Canada. Each is an internationally recognised leader in their market sector, and we're excited about their potential in the US."





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“ These Lanterns are ideal for the Royal Exchange in every way ”
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Chris Webster
Queen Elizabeth Hall, Oldham

“ When CCT bragged about the light output I was very sceptical, but seeing is believing ”
John Hudson
Live Theatre, Newcastle-upon-Tyne

“ Nice bit of Kit ”
Keith Benson
Glynbourne Opera House

“ I get particularly excited by the 28-58 degree profile ”
Nick Hunt
Lighting Designer & Editor
ALD Focus Magazine

“ Freedom has so many things going for it I could go on forever ”
Terry Cowley,
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Pearl Dances With Lasers



The Pearl-controlled lasers in action at World Dance.

The World Dance Organisation, renowned for producing and designing the very best in warehouse parties, held their latest event in the lavishly restored environment of the K - R Warehouses in London's Docklands.

Lasers have always been a fundamental part of the WD visual extravaganza, and Omicron Laserage GmbH have pioneered the control of lasers via DMX interface enabling conventional lighting consoles to be used for integral control of lasers and lighting, both conventional and intelligent. For the first time at this World Dance event, an Avolites Pearl was used to control the laser show, programmed and operated by Omicron's Rupert Morse.

The situation arose from the Rock World Club in Kuala Lumpur, which purchased a Pearl earlier in the year. They also bought a laser system and wanted to control both systems from one console, which is where Omicron came in - to write a protocol to enable this. Omicron have been experimenting with many DMX controllers, but this was the first chance they had to use the Pearl for this purpose.

Avolites responded by writing two personalities for the laser to use on the desk so the fibres can be programmed and controlled in similar fashion to a moving light fixture. The first personality deals with desk attributes such as 'gobo function' that give access to four banks of 255 graphics, giving a total of 1,000 gobos that can each have different paint, colour or morph commands attached to them. Other functions in this personality include text, animation, shutter and pan and tilt. The second personality contains control of beam tables and actuators.

Luminar Reap Flotation Rewards

A recent report in *The Times* detailed the increasing investment portfolio of leisure operator Luminar. The company, owners of the Chicago Rock Cafe chain, have recently opened five new restaurants, bringing their current total to 12, and are currently involved with plans to open a further eight before the year is out. Luminar have also been expanding their Rhythm Rooms Cuban-style nightclub operations; two are already up and running and three more will be opened by year end.

The company's rapid expansion comes on the back of their recent flotation on the stock market. Less than six months on, the company has met its prospectus forecast with pre-tax profits 30% ahead at £1.58 million. *The Times* report noted that their success was indicative of a recovery in consumer spending.

GAE in Demand

Hughes Audio Engineering recently supplied a GAE sound system to Islington Borough Council for their annual fireworks display. The system featured four GAE Hawkwind high/mid cabinets and eight Hawkwind sub woofers, together with four 212/351 passive high/packs biamped into the subs powered by QSC and Camco. Elsewhere, the success of GAE in East Anglia has led to PDS of Peterborough increasing their holding of GAE loudspeakers. The company first purchased two stacks of Modular cabinets in late '95 and by early '96 had purchased a further two stacks. They are currently extending their inventory to include the Hawkwind 4-way active system.

C O N C E P T



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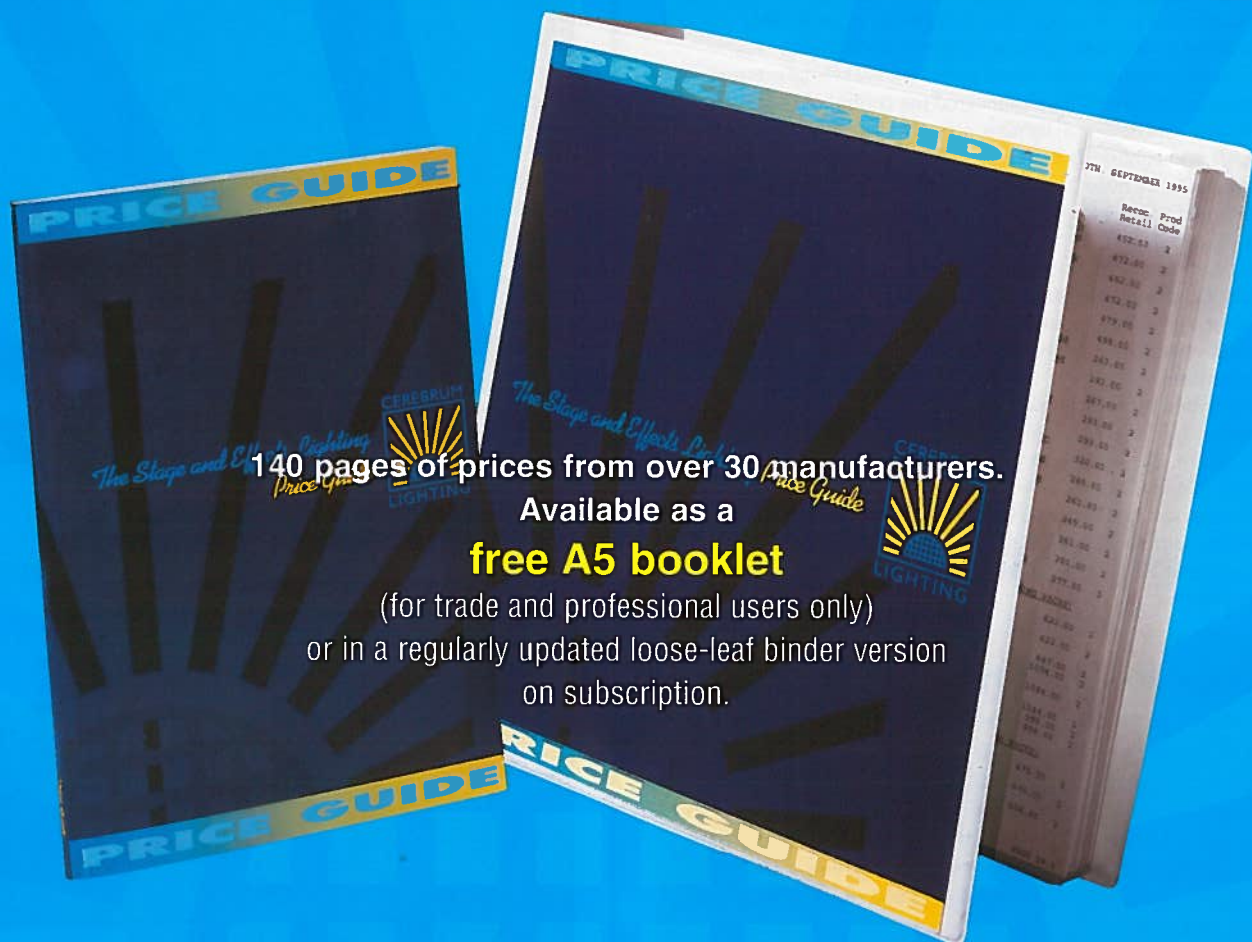
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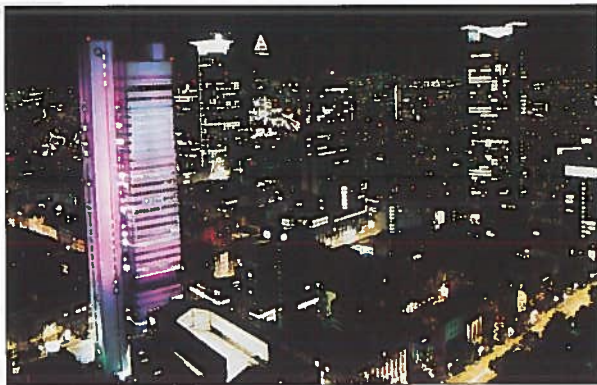
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Irideon Bank Job

Irideon's AR 500 architectural luminaires have been put to use on the 172m high Dresdner Bank Tower in Frankfurt by lighting design consultancy Envide, of Karben, Germany. The Dresdner Bank commissioned the project to mark the arrival of German Telecom on the Stock Exchange.

A three-strong lighting design team of Ralf Koehler from Envide and Nico Ubenauf and Martin Heuser from production and rental company Satis & Fy, wanted to use 74 Irideon AR 500 architectural luminaires on the project, but were forced to rethink because the restricted time scale meant that only 30 units could be shipped from Irideon in Dallas in time for the opening. The team split the project into two phases, with the second phase to include the full complement of AR 500s.

The installation, which will remain in place for three months, was carried out by a seven-man crew over five days, much of which was spent in heavy rain. Due to the problems of a very high crime rate in the area of the bank, 80% of the cabling was run below ground, which had the added advantage of improving the visual aspect of the installation. The AR 500s were then programmed to perform a 30-minute lightshow, along with a 21W Argon laser. The show was controlled by five independent MA Scancommander consoles, synchronised by radio clocks receiving a time signal from a transmitter in Frankfurt.



EAW Appoints Gearhouse

EAW International Ltd has appointed Gearhouse Systems as exclusive distributor of the full line of EAW professional audio products to the United Arab Emirates (UAE).

The company is part of the \$40 million Gearhouse Group, which has offices in the United Kingdom, Brunei, South Africa, Singapore and the United States. The organisation specialises in the distribution of professional products to markets throughout the world.

"We are experiencing enormous growth in both the corporate and entertainment sectors in the UAE," Ged King, general manager of Gearhouse Systems Dubai told L+S-I. "Currently, we're designing systems for conference facilities, as well as themed outlets and live entertainment venues."

Sport in the Community

Community Loudspeakers are getting into shape at a number of sporting arenas in The States. The audio system at the new 70,000 seat Ericsson Stadium, the home of the NFL's Carolina Panthers, features a Community end-zone cluster using three Leviathan IIs, supplemented by six M4 CoAx systems, 12 EM280 voice-range systems and three full-range RS660FEs.

The University of Colorado's 53,000 seat Folsom Stadium also sports a new end-zone cluster sound system centred around four Community Leviathan IIs supported with side/down-fill coverage from four M4 CoAx systems.

Tomcat UK Meets Success Early

At the beginning of October, when Tomcat UK Ltd began the manufacture of aluminium truss for the entertainment and leisure industries, they expected a slow start. They also expected to draw clients from the UK initially and then work slowly into the rest of Europe. In the short time since the company opened for business, both these expectations have been proved wrong.

In fact, so great has been the demand that the company has already had to expand the workforce. Additionally, the company has been pleasantly surprised by orders coming not only from the UK, but from a variety of customers, some as far away as the Middle East.

In addition to a wide variety of aluminium truss, the Evesham-based company also manufactures ground support and outdoor roof systems, as well as providing a full complement of rigging accessories, chain hoists, hoist controls and related products.

Cinema Videowalls

Laserpoint's US distributor, GVC, have won the contract to supply videowalls for all the United Artist and Showcase cinema foyers throughout North and Central America. Using Laserpoint's Q-Wall processor controlling GVC's Theaterwall projectors in a 2 x 2 configuration, the videowalls run movie previews, reviews, information and advertising.

GVC's recent installations include Cinemark Theatre chains in Mexico City and Guadalajara, plus upcoming work for the same company in Argentina. Ace Audio Visual USA have also installed Theaterwalls in United Artists theatres in Singapore and Hong Kong, whilst Chrysalis Retail Entertainment managed the Showcase Cinema installations in Wokingham and Glasgow.

Other Laserpoint/GVC installations include the Casino in Trump Plaza, Atlantic City and Atlantic Records, New York.

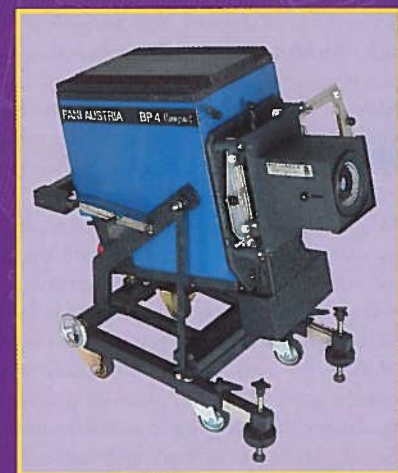
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CCT Goes Live With Freedom - Jim Laws Reports

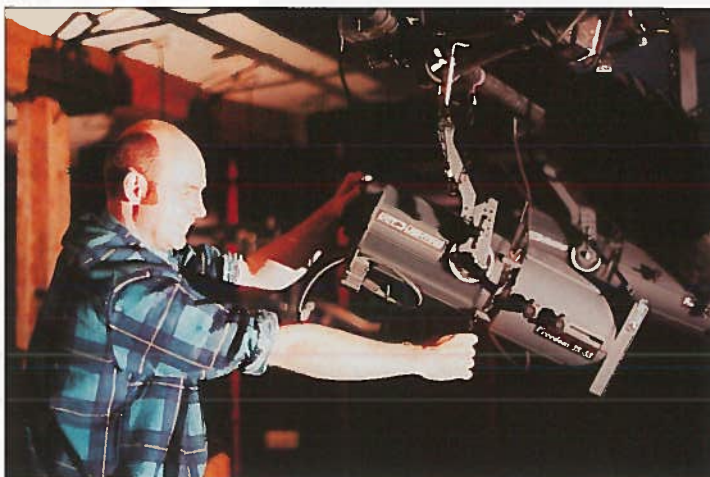
I have followed the fortunes of CCT Lighting since 1974, when I helped put the first ever all-CCT rig into the Redgrave Theatre in Farnham. In those days, the first black Silhouettes were coming out and zoom lenses were a must for The Redgrave's open stage where lighting created not only the atmosphere but frequently was the only indication of location.

Some 22 years later, the spine tingled at a set of parallel circumstances. At the request of Don Hindle and David Manners, joint managing directors of CCT (and also at the helm back in 1974), I was to be whisked to Newcastle, where an open stage was lit by an all-CCT rig which includes the first Freedom variable beam profiles.

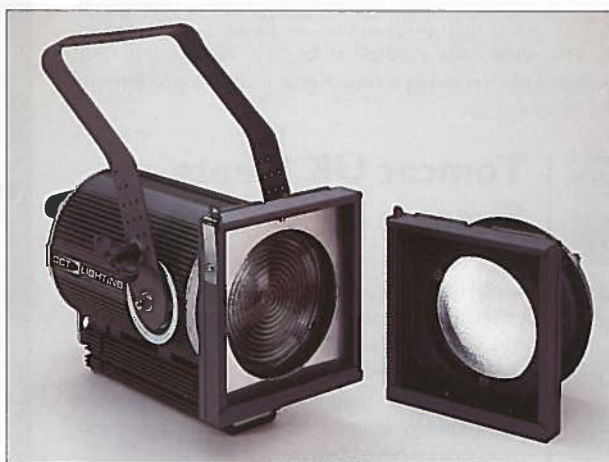
In all the time I've known CCT, all its big zoom profiles have been called Silhouette. Why the change? 'Freedom' is a name that conjures up new horizons and this is exactly what the new lights do. Forget about 1000W, these lights do the job with 600W lamps. Three zooms give you everything from seven to 58 degrees. You change lens tubes with one screw and a bayonet action, beam peaking is easy and lens cleaning is a doddle. All my 1974 gadgets could sit in the colour runners, for CCT latched onto the din standard nice and early. But how does it all work in a theatre?

We arrived at the Live Theatre, Newcastle as they were setting up for a Pipes and Bouzouki concert. Chief technician John Hudson gave us the run-down on the venue's unique history: from its Worker's Revolutionary Party roots it has become a theatre for new writing, especially with a Northern slant, and it is a place for people who would never think of going to a 'real theatre'.

Seating up to 200 with an open corner stage - whisper it loudly folks - this is a real theatre, and



Above: John Hudson with part of the Freedom Range. Below: the Fresnel/Pebble lens on CCT's new 'Freble' luminaire.



one which features a gridful of CCT. How come? The answer is straightforward: Hudson (who is not alone) is tired of the way some brands of lighting change their model and don't continue to provide spares once last year's hot potato has turned luke warm. He likes CCT's continuity and their steady innovation. And he had some spending money just at the right time for Freedom.

Hudson is very particular about the way that his lights perform. His test for profiles is to light an exit sign from a throw of 15 metres with no spill! Tests like this ensure minimum scatter on his open stage, useful when planning projections for *Oh What a Lovely War*.

Happily, Freedom passed the rigours of the 'Exit Sign', the 'floor module' and the 'flood the stage' tests. Whilst there are imported profiles with comparable efficiency, only CCT achieves the results by using zoom optics. And this efficiency, against a conventional 1000W unit, could lead to a potential saving of £20 per year, per fitting, in electricity consumption.

All in all, John Hudson could see a vast improvement from the first Silhouettes which he hired from Canford Audio in 1980. But several aspects of Freedom had so far eluded him. CCT have just launched the Freble at PLASA '96. This is a combined lamphouse for a Fresnel and a PC lens, which are set in appropriate lens/accessory holders.

Hudson tried changing the nose to a Fresnel whilst the lamp was on; a microswitch on the lead screw turned it off for him! The Freble concept will be very popular with rental companies because different lens types can be used and the beams are clean and strong, whichever particular model you may choose.

Freedom has an optional dimmer (600W, of course) which clips under the lamphouse (a cool position), responds to DMX 512 and can be set to one of 16 proportional outputs. This last feature is under patent, but do we need it? Do we need ABS braking? Not very often. However, people who need a dimmer under their light need it because they lack central dimmers and/or radial wiring. They are also likely to have reached saturation point on control ways. Pair up your Freedom via DMX to any other lamp and use the proportional output to balance up the pairing. Or maybe you're in an exhibition. You don't need a controller - just set a brightness.

Throughout a busy afternoon I was very aware of the pressure the production team was under to rig for the concert that evening. But, as I found all those years ago, to have the manufacturer's managing directors in your theatre for direct feedback can only result in better lighting in the future. So I hope Live Theatre found the time well spent.

Thank you John Hudson! May your projections shine out in *Oh What a Lovely War*. You have the Freedom to cross light right up to the screen, and no further.

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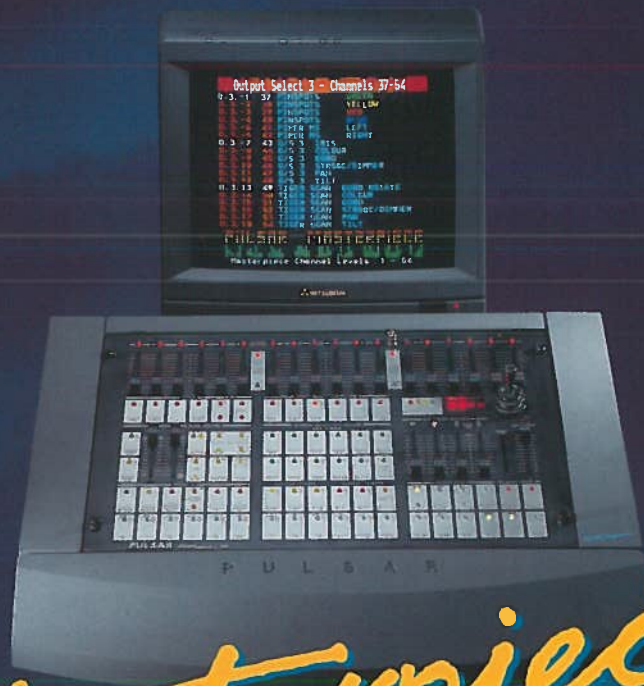
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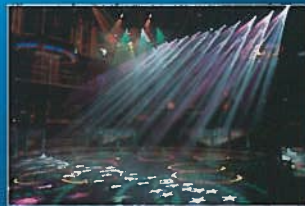
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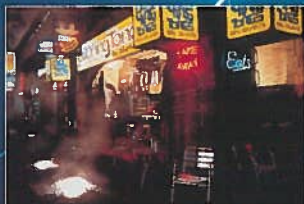
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M&M Provide Link With Rental Companies

M&M have supplied equipment to rental companies White Light in London and Chameleon Touring Systems in Australia for use on several new productions.

White Light has provided lighting designer Paul Gallo with equipment for *Smokey Joe's Cafe*, which opened at the Prince of Wales Theatre in late October. Dedicated to the music of Jerry Lieber and Mike Stoller, *Smokey Joe's Cafe* is an energetic song and dance spectacular, imported from Broadway. M&M supplied equipment on the show includes Rainbow colour changers, ETC Source Four spotlights and an ETC Obsession control console. The large lighting rig also includes 20 Vari*Lite VL6s controlled by a Wholehog 2.

White Light have also supplied lighting designer David Hersey with Source Fours for *Jesus Christ Superstar*, which opened on November 19 at The Lyceum.

In Australia, Chameleon Touring Productions of Alexandria, Australia, are using Rainbow colour changers on the touring production of *Phantom of the Opera*. This opened on October 31st at the Queensland Performing Arts Centre in Brisbane and will tour through many of Australia's major cities, with the possibility of further performances taking place in Singapore, Hong Kong and South Africa.

GL3000 at Barter

The 160-year-old Barter Theatre in Abingdon, Virginia, the oldest in the US, has completed its restoration with the addition of a 40-channel Allen & Heath GL3000 console.

The GL3000 is being operated in dual function mode, providing audio for the whole facility, including FOH, satellite speakers, on stage monitors, sidefills, backstage monitors, dressing rooms, lobby sound and other floatable systems depending on the show. The 500-seat proscenium house theatre is open all year round, hosting new works and those by American authors.



Electro-Voice in Dubai

Thirsty travellers in Dubai can now keep an eye out for a traditional Irish pub, with music coming from Electro-Voice speakers supplied by John Henry Enterprises. The company's Nick Chapman told L+SI: "To maximise space we've flown a pair of EV Sx200s above the stage, and to disperse the sound we've scattered EV S40s, individually zoned for volume control, around the snugs. For the terrace we're using S140s, specially weather-proofed."

Backline at the venue is not a great problem, as the Irish folk instruments are mainly acoustic, using custom John Henry pick-ups through John Henry DI boxes into a 16-channel Mackie desk with two Rane ME15 graphics. Amplification includes SR707s and the Electro-Voice P600.

The advent of the country's first pub (drinking was previously restricted to hotels) does not signal an invasion by the Irish brewing industry, however. The bar is owned and operated by none other than Dubai Duty Free Shops.

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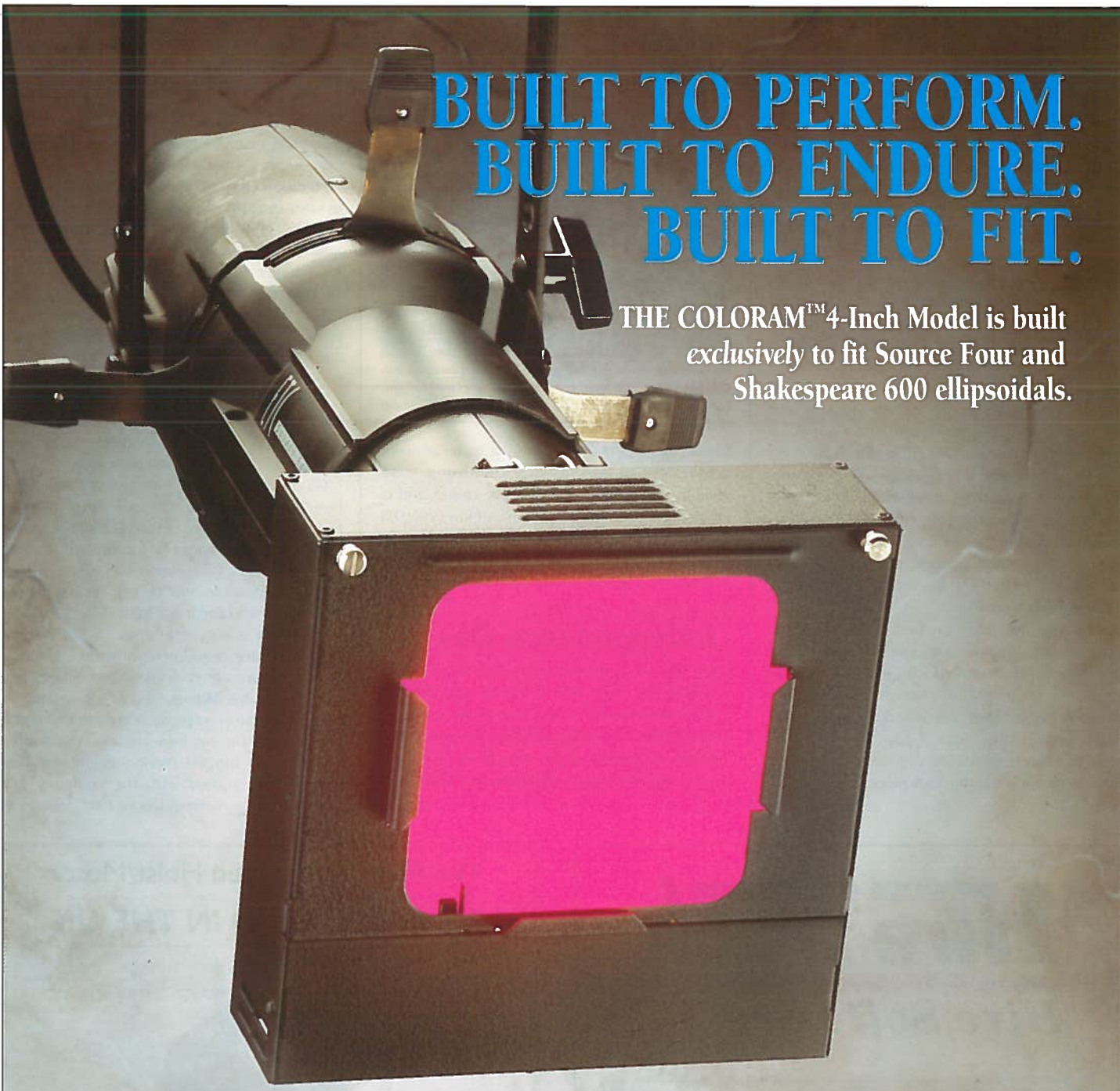
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LCI at Lakeside

This year, the managers of Britain's biggest retail complex, The Lakeside Shopping Centre at Thurrock, adopted what they hope was a well timed extravaganza: a November spectacular that highlighted the Centre's extended opening times for the Christmas frenzy. Laser Creation's 36m wide, 18m high Water Wall laser video projection is what caught their eye and considering the centre's lakeside setting it seemed an ideal choice.

Project leader for LCI Bret Salmon commented: "We've installed this size of wall before but this is the first time ever we've ever done one as a temporary install. There is two tons of equipment in all and basically the nozzle system and immersion pumps are floated on a series of pontoons right across the centre of the lake."

The show ran each weekday night for two weeks and comprised a selection of standard advertising clips, company logos and product information about the centre's retailers. Digitised by LCI, these simple graphic and text messages were projected by their three head 10W mixed gas laser video projector.

The main attraction created by the company was an animated video spectacle based around the theme of a wizard conjuring a host of creatures, seemingly from beneath the surface of the lake. Just to make sure nobody missed the fact that something was happening in the neighbourhood, two 25W Argon's also scanned the sky above while this took place.

Steve Moles

SMART Laser Co



Dr Berenice Mann of Cambridge Lasers receives a 1996 DTI SMART award from Industry Minister Greg Knight. Looking on is Ken Lewis, chairman of the Eastern region competitiveness forum.

Cambridge Lasers Ltd are testing material never before used in laser tubes to develop a more reliable, robust and cost effective device and is among 20 Eastern region winners of the 1996 DTI SMART competition. The DTI-funded competition is open to individuals and businesses to carry out a feasibility study into innovative technology.

Independence Day

On the eve of last month's AES Show (full report see page 63), C Audio appointed Wisconsin-based Audio Independence as US distributor for the launch of the new SRX range of amplification, which received a successful European showcase at PLASA.

People News

Litestructures have appointed **Emma Lee** as marketing manager to take care of all aspects of the company's marketing.

Precision Devices have appointed **Alan Kilford** as sales and business development manager. Alan will be responsible for all sales, marketing and new business development on an international level. Alan has previously worked with Bose and Tannoy.

Sam Wise has joined Arup Acoustics as a consultant, bringing with him expertise in sound and communications systems with an emphasis on electronics and electro-acoustics.

With the launch of C Audio's SRX range, **Lee Basham**, who has been with the company for seven years has taken up the newly created position of product support engineer.

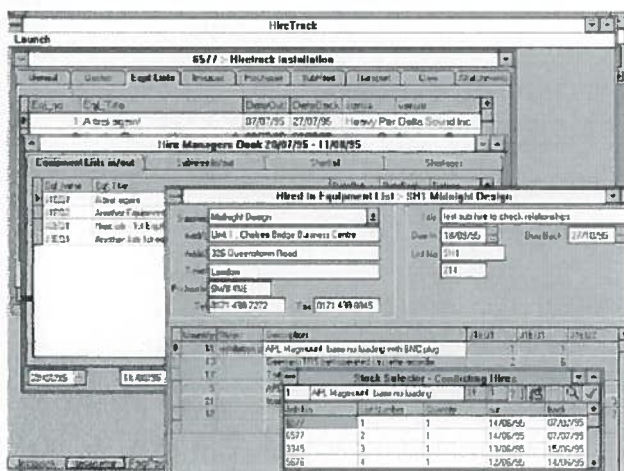
US distributor Group One Ltd, of Farmingdale, New York, has expanded its sales and marketing force with the addition of **Paul D Murphy** as sales and marketing manager for the professional lighting division. Paul, formerly a general manager with beyerdynamic, will be responsible for Clay Paky, Pulsar and Elektralite sales.

Following a successful year, Screenco have increased their workforce with the addition of **Simon Taylor** as business development executive and **Christopher Milnes**, who will co-ordinate the steady increase in corporate and exhibition events.

Sadly, Vari-Lite Inc have reported the death of one of their longest-serving engineers, **Dave Berger**, who started with the company as a technician on the Genesis tour of 1982. He was 44.

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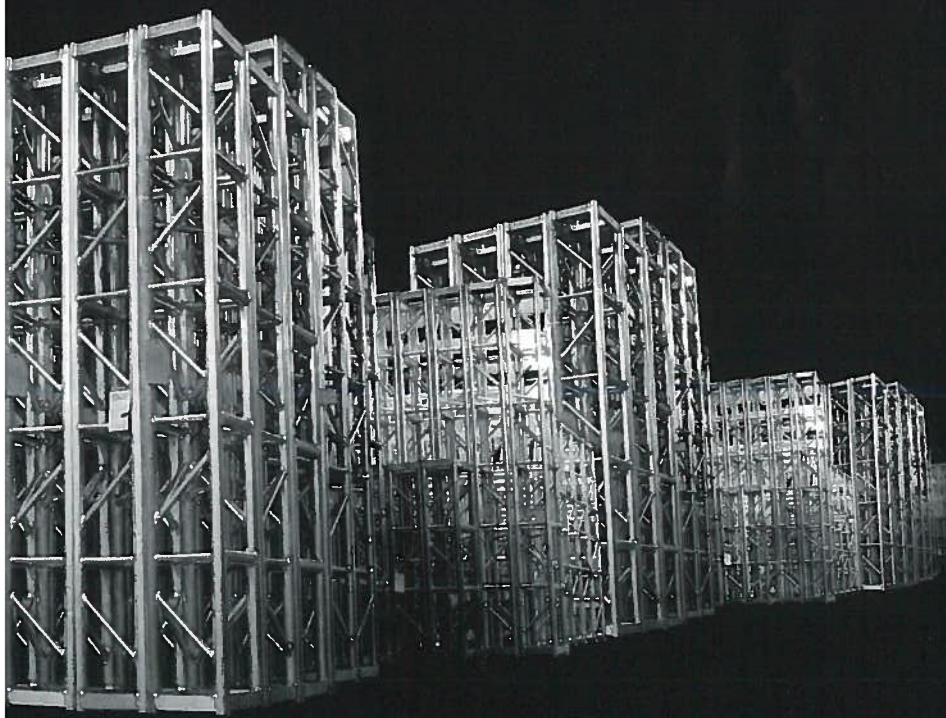
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DATE WITH DESTINY

*Ruth Rossington caught up with Carnival's new 100,000 ton
Destiny as it prepared to leave Miami port*

Some journalistic pundit once credited Noah with organising the first ever couples-only cruise. Today, the old testament figure would be amazed to discover the chain of events he set in motion.

Cruising has passed through many ages: there was a time when it conjured up images of ladies with parasols and gentleman in blazers playing quoits on the decks of ocean steamers sailing majestically into new territories. The rapid demise of the Titanic, followed swiftly by two world wars, bound together by the widely held notion that cruising was an expensive pursuit enjoyed exclusively by the upper classes, alienated those who sought to spend their holiday dollars on less ambitious projects.

Now, of course, it's a much more open affair and cruise operators are queuing up to capitalise on increased spending on leisure. So fierce is competition for a slice of the holiday market that the cruising industry is raising the stakes and aggressively targeting anybody who'll listen. The message appears to be getting through and there is now a scramble to feed market demand.

The latest liner to embark on its maiden voyage is the Carnival Destiny, the world's first 100,000 ton passenger vessel, which entered service from the port of Miami in late November. Towering more than 200ft above the ocean, she's the largest passenger ship ever built. The ship is so vast, in fact, that she will never cruise beyond the Caribbean and with a waistline of 125ft certainly won't squeeze through the 110ft Panama Canal.

The flagship of Carnival's 'Fun Ship' fleet, the Destiny was constructed in Italy at the prolific Monfalcone shipyard of Fincantieri. If one were looking for clues as to the current renaissance in cruising, then a quick glance at the yard's order book which includes Carnival Triumph (a sister ship to Destiny), three further vessels each for Princess Cruises and the Holland American line and two for the Disney Cruise Line would be all that was needed.

To put Destiny in context, she is almost a third larger than Sun Princess and almost half as large again as Cunard's QE2 (currently in dry dock for refurbishment) and P&O's Oriana. The scale is breathtaking: the 14 decks, 12 of which are for passengers, are the length of three football pitches. On-board is the largest spa (15,000sq.ft), the largest casino (9,000sq.ft) and in Camp Carnival, the largest children's activity area (1,300sq.ft) of any cruise ship.

Despite the 'big is beautiful' maxim, space remains at a premium and in common with most other newly-built vessels, Miami-based architect Joe Farcus has made a concerted effort to create a very open feel to the Destiny. The main atrium - the Rotunda - rises across nine of the 14 decks, whilst a second atrium at the aft



Carnival Destiny - part of the fleet of the largest and most profitable cruise line.

of the ship spans three. It is a theme pursued throughout the principal areas - the main feature lounges and restaurants are well-proportioned and the promenading areas are relatively uncluttered.

Given that a light, open feel is vital if one is to keep at bay any latent tendency to claustrophobia among passengers, the internal decor was somewhat overwhelming: the miles of Tivoli lighting and neon can be coped with, but the colour schemes, particularly for the carpeting and curtaining were, dare I say, less than subtle. Still, this is Vegas with ballasts, so perhaps one shouldn't expect them to chuck out the chintz just yet. Over the years, Farcus' imaginative interiors have come to be Carnival's cachet, and whilst they may not always be to the taste of a European audience, the American vacationers just love them. When guests step aboard a Carnival 'Fun Ship' they know they're not in Kansas anymore.

Presumably, if there is a squeeze on space it comes in the cabin areas (there are 1,321 staterooms catering for 3,400 passengers) although it seems unlikely, and if the brochures are anything to go by, there doesn't appear to have been any compromise in this area either.

With so much at stake (the ship cost US\$400 million), Carnival had to be sure that what they were offering would outstrip anything seen before. With passengers paying a small fortune for the privilege of cruising the Caribbean, there has to be some sophisticated means of entertainment to while away the hours in-between island hopping.

To create the desired impact, Carnival gathered around it a team of technical experts that each had a pedigree in the cruise industry. Not surprisingly, one of their first calls was to Glantre Engineering, who were brought in as sub-contractors for the design, supply and commissioning of all the entertainment systems. The contract, a cool US\$8 million, is just the latest in a long line of cruise-based installations handled by the company in a niche market that they have somewhat claimed for themselves. With Florida the undisputed cruise

capital of the world, Glantre have wisely set up a USA operation at Fort Lauderdale - a stone's throw from the Ports of Miami, Everglades and Canaveral with technical director Vic Dobbs taking the helm.

Also called in was theatre consultant Jim Tetlow, whose brief covered stage rigging, lighting and effects. Tetlow is no stranger to work at sea, having also carried out lighting design for the main production shows on several vessels in Carnival's fleet. The design of the audio and video systems meanwhile, fell to Miami Audio Visual Company (MAVCO), themselves experienced contractors to the cruise industry.

As a result, the stage lighting, sound, rigging and control all employ the latest techniques, while the effects equipment includes several elements rarely used on cruise ships. The audio systems, in particular, were spec'd at the top end of the market, not only to meet the stringent requirements of Carnival Cruise Lines, but to fulfil the expectations of passengers. Further innovations come in the integrated control where touch screen systems have been used extensively to interface with lighting, sound, video and effects.

It was entirely fitting, therefore, that my visit should begin with the main show theatre - the Palladium - a room that by its ambitious nature, has demanded some very intelligent solutions. The vast showroom's contemporary decor features walls of distinctive Portoro marble surrounding the stage and flanking the curtain-festooned window arches along both sides of the theatre.

In common with most other venues on the ship, it would not look out of place on the Vegas strip, and therefore it is entirely natural that it should be the setting for the two revue shows - both specially produced for the Destiny: Les Formidables is a French concoction, set against a Parisian backdrop, whilst Nightclub Express is hosted by a singing sofa (yes, you read correctly) that escorts the audience from club to club on a tour of famous night-spots. No prizes for guessing the style of presentation or the number of long-legged lovelies that will shimmy the performances along.

With razzle-dazzle high on the menu, there is a need for sophisticated solutions and the technical spec alone would be the envy of most theatres. The fact that this has been achieved in a very confined space must send land-based theatres scurrying to the closet. Whilst money is carefully budgeted, it is seldom the main issue and most cruise operators will spend whatever is necessary to create a showpiece venue. (The estimated spend last year by major operators on entertainment technology was \$35million). The Palladium is no exception.

As many theatres afloat tend to have the

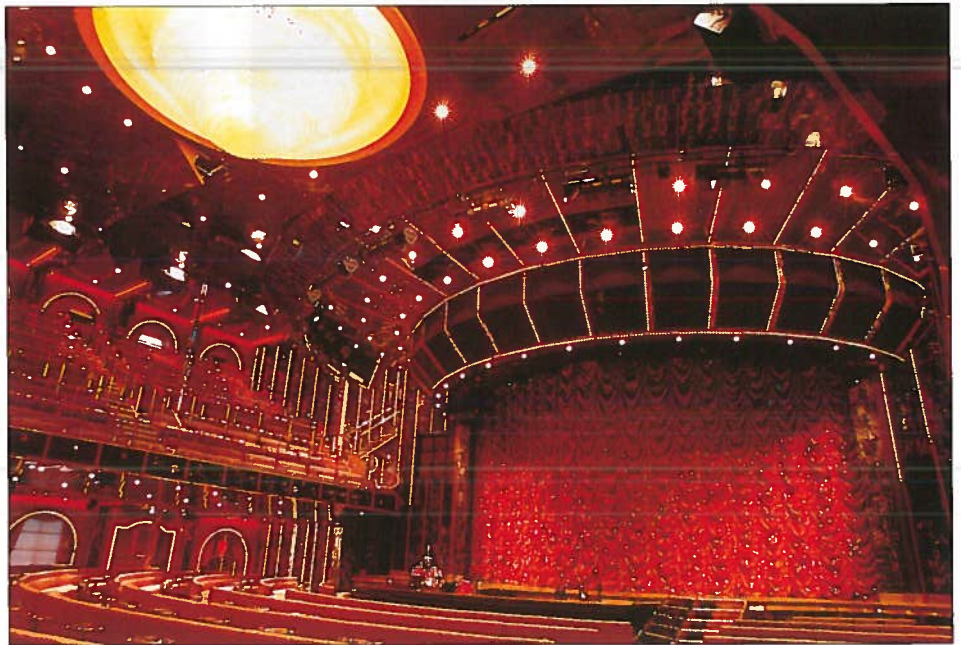
luxury of one or two decks at most, it's rare to come across one where the auditorium occupies three decks (seating over 1,300 in a mixture of lounge and theatre-style seating), while the stage not only has a revolve, but incorporates a full-scale four-deck flytower with a single deck pit.

In terms of lighting and sound, nothing has been left to chance, and whilst the Palladium may border on being over-spec'd, such an approach is justified by the fact that the room is expected to fulfil a number of functions. As there will be only three technical crew aboard when the ship sails, the systems also have to allow for complex operations being carried out by staff with minimal training. To give the theatre the flexibility needed, Jim Tetlow and Glantre's team of engineers concentrated on detailed design and high spec products.

The stage luminaires include considerable quantities of ETC Source Fours, James Thomas Par cans, M16 strips and four-colour cyclorama and Lycian followspots. In total, there are just short of 400 fixtures, 114 of which are fitted with Wybron Coloram scrollers.

The extensive inventory of automated lighting consists of 48 High End Cyberlights (14 of which are the CX version) and 24 VL5s, the latter provided under a direct lease arrangement between Carnival and Vari-Lite. In the tradition of grand theatre, a sparkling Venetian glass chandelier dominates the ceiling above the auditorium. When the lights are dimmed for the shows, the chandelier turns high-tech, with fibre optic colours co-ordinated to match changes in the stage lighting.

In the control room at the rear of the



The Palladium show lounge - Las Vegas on sea-legs.

auditorium, a 600-channel ETC Expression 2X console is used for conventional equipment, whilst a 2048-channel Flying Pig Wholehog II handles the automated luminaires. This was one of the first opportunities for the new Effects Engine aboard the Wholehog to be put through its paces. When the Destiny took its inaugural voyage across the Atlantic in late October, both Jim Tetlow and Wholehog programmer David Chance were plotting the Las Vegas-style extravaganzas using this new facility on the Wholehog II. The challenge Chance set himself

was to complete the entire moving light programming without using looped cues or chases, relying solely on the new Effects Engine. Remarkably, for shows that would normally require over 1,000 cues, he managed to bring them in under 200. Squeezed behind the desks are a pair of equipment racks, one for lighting and lasers and one for video and control, whilst the extensive DMX network on the Destiny features XTBA SmartMerge and LSC isolated data splitters.

Amongst other kit hidden away in a small

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The Onyx Room - one of the many feature bars on the Destiny.



The Glantre team of Richard Bunn, Rob Shuard and Robin Dibble.

room to the rear of the stage are 384 ETC dimmers in delta configured racks, alongside a rack of 77 220V contactors from Northern Light provided for independent circuits.

One of the key features is the AMX integrated control system designed by Glantre's Rob Shuard which gives touch screen interface for different systems within the venue. The system also sends and receives MIDI Show Control and MIDI Machine Control, giving access to all controlled devices from a central SMPTE time code driven show control cue engine - ShowTime! - jointly developed by Axxess Technology and Glantre.

As mentioned, US consultancy MAVCO handled the original specifications for the sound systems, with Glantre's Robin Dibble implementing their recommendations. Carnival put a very high priority on sound and there is 65kW of EAW in the theatre, with 95 speakers ranged across the upper and under balconies, the stage skirt and the proscenium. The central cluster features a mix of 10 EAW speakers, whilst on stage there are a further 10 SM500 monitors. The whole system can offer in excess of 120dB, though the shows tend to run at 95dB, peaking at 100dB. The original spec of over 110kW was subsequently reduced as it was not possible to fit the systems in.

Even though proportions are generous, the old problem of space raises its head in the sound control area. Every input and output on the 48-channel Midas XL4, which provides the main sound control, is fully utilised. In addition to the standard Outboard automation on the XL4, an Octopus automated routing system under ShowTime! control can generate complex spatial effects in the auditorium and send sound spinning round the room to numerous small speakers.

The amplifier section is full of Crest P-series amplification, and all the processing is provided by BSS and Klark Teknik, monitored by six Formula Sound Guardian CX4s on each system. By everyday standards there is a lot of effects processing and surround effects systems. An extensive number of signal processing modules from BSS Audio, including Varicurve equalisers and Time Correction Systems, feature here (as indeed they do throughout all the main entertainment venues).

Restrictions on accommodation for musicians and vocalists demand extensive use of recorded audio material. The main reproduced sound sources are two synchronised Alesis ADAT eight track digital tape machines providing 16 channels of backing vocals, orchestration and effects. The

addition of Tascam DAT, CD and cassette players allows for ad-hoc events in the theatre.

Every part of the system is accessible from the 672 jack-point patchbay, though the actual ergonomics of getting the cabling in were frightening. The wiring alone took four weeks - a situation not helped by the fact that the standard cabling on the ship was over-sized and Kelsey cable was used as an interface. Behind the sound control area, Glantre have done well to contain the spaghetti junction that has developed as a result.

To the left of the Midas in the control area is the main audio source rack and the ADAT machines carrying tapes of both shows from which the SMPTE time code is taken that is distributed to the two lighting consoles and ShowTime! control system. Lurking under a heap of cabling is a Mustang ZG4 paging system and show relay, and there is also an AMX slave cardframe taking instructions from the master in the main control room and a second portable touch panel.

The elaborate stage effects equipment includes three 8W laser systems by LaserNet, each equipped with a Spectra-Physics Chroma 10 white laser and run in tandem with six remote fibre fed projectors. There is also a liquid nitrogen (LN2) low hanging fog system from Interesting Products. The Dry Fogger is located high above the stage with the fog distributed to a 6m wide curtain and six outlets at floor level, all controlled by pneumatic gates. This, together with the DMX512 contactor control systems, is a good example of how the technician can capitalise on the intelligence of the AMX system. Other stage effects include Wildfire UV equipment, two high power Pani BP2.5 scenic projectors sited either side of the sound control balcony, a bank of haze and smoke machines and pyrotechnics. All lighting and effects systems were co-ordinated by Glantre's Ian Pogson and Richard Bunn.

A pair of 3 x 3 videowalls from Videasel are permanently installed at the side of the proscenium and when not in use can be concealed by motorised panels. The Palladium is also fitted with a high power Barco 8100 video projector and a remote controlled CCD colour video camera to provide large screen relay, recording and backstage monitoring. The images generated can be incorporated into the shows and synchronised with the audio tracks. Glantre's site engineer Chris Bowen led the video design and implementation.

The stage itself is actually floating (a concession to life at sea) but set storage is so limited that most sets are rigged above the

stage. The orchestra pit in front has an integral hydraulically operated lift (supplied by Delstar, as is the revolve) and band wagon. With the lift raised and the band wagon tracked upstage, a forestage extension is possible.

There are actually two sections of flytower: that over the forestage is of three-deck height and has the lighting bridge, main loudspeaker positions, lineshaft hoists and lighting bars, whilst the four-deck flytower over the main stage includes 22 line shaft hoists of 575kg capacity. All the hoists were supplied by sub-contractors JR Clancy.

As necessity (in this case lack of storage space) is often the mother of invention, there are also two wardrobe hoists to enable costumes to be flown in for quick changes with a second storage bar for costumes not required for the day's production. Further costume storage is offered in an area nearby, where a tiny room awash with sequins and feathery confections, broken only by the hard edges of flight-cases, the smooth curves of cabling and the motors of the pneumatics system for the stage revolve, beautifully illustrates the compromises needed. The rigging and stage equipment, with 41 separate motorised axes, is controlled through a five-playback Acrobat! control console from Stage Technologies.

Given the challenges presented by space restrictions, vibration, pitch and roll, the three principal players have done a remarkable job, although it hasn't all been plain-sailing as Jim Tetlow readily admits. Things got complicated on an early crossing when the Carnival Destiny ran into 25 feet high waves causing a tremendous amount of movement and a very percussive bow slap. There were some concerns about the ratings on the system under such continual impact and as one of the productions features a very large staircase (perhaps, in retrospect, an over-ambitious set feature), the entire system was put under strain. The solution was to track the pipes within cable guides, and frames have now been installed.

Despite this complication, quickly rectified, Roger Blum, Carnival's director of operations and Preston Bircher, entertainment technical supervisor, are rightly proud of the Palladium. "Virtually every stage technique used in the world's leading productions can be employed in this theatre," adds Blum.

With the Palladium setting the standard, it wasn't too difficult for the other venues to fall into line and the Criterion Lounge - the second major performance venue, essentially features a scaled-down version of the systems in the Palladium. This being the case, it's not

necessary to repeat the roll-call, except to add that in the proscenium there are Meyer MSL2s and MSW1s alongside EAW JF100s reinforced with SB120 subwoofers. On the lighting control side, the set-up features an ETC Insight 2 for the conventionals and a Jands-Hog 250 for the automated lighting.

Despite its boast of having the largest children's activity area in Camp Carnival (the children's room has a 16-screen videowall with AMX touch screen control), the majority of leisure pursuits on-board have a decidedly adult bent - a move no doubt influenced by the fact that the average age on Carnival's Caribbean cruises is around the 30 mark.

The casino, for instance, simply stretches for miles and miles with 321 slot machines (surely trouble on a grand-scale), 23 gaming tables, acres and acres of cold cathode and 5,000 Mode Electronics transformers to control it all. For sound relay, there is a system of Tannoy speakers, plus the usual clutch of Crest, BSS and KT in control, together with a Denon multidisc CD.

The Onyx Room, one of the largest bars on the ship, has little in terms of effects lighting, but again features a partnership of Tannoy and EAW speakers, mixed through a Mackie desk (a piece of kit that also features in most venues) whilst the small card room annexed to the Onyx Room has Bose 102 ceiling speakers. Curiously, it also has a mirrored ceiling, so any attempt at bluff in poker can be checked out by a quick glance skywards.

The Onyx also acts as gateway to the Point After Dance Club which sits on the deck above. Between the two sits a suspended see-through



Richard Bunn with the integrated AMX touch-screen control system in the Apollo Bar.

dance-floor so it can't be too long before neck-ache becomes a common complaint of passengers craning to see up the skirts of the girls above. The club itself is dominated by extensive Videosel videowall arrays, cold cathode lighting and special effects. With a total of 504 screens in what is a relatively small space, one might suppose that a sledgehammer had been used to crack a nut, but, somehow it does actually work. The 'small' rig above the dance floor, designed by Wynne Willson Gottelier, features a clutch of TAS Syncros and Mini Ultrascans (supplied by Coe-Tech), Optikinetics K4 projectors with oil wheels and Clay Paky Pipers, Sapphires and Pinscans,

alongside Par 38s and a batch of Dataflash and Flexiflash. Four banks of 4x4 videowall screens also feature in the rig

The VJ has at his fingertips a set of 64 presets for the integrated control of the videowall and lighting effects, via an AMX PC touch-screen monitor. The control system communicates with an Axon ShowCAD for the lighting and Videosel Digimax for video effects. The former is fast gaining favour in the cruise industry and now orchestrates the light shows in ballrooms, discotheques and bars on a number of cruise ships belonging to most of the major operators.

Touch screen technology is also used for the control of an Otari 360 disc CD multichanger which is provided in addition to the hands-on Pioneer CD players and Technics turntables. An Outboard Quad Panner provides spatial audio effects under ShowCAD control, whilst the Formula Sound System 2000 mixer provides the main mix. The rig is predominantly Meyer with four USW sub-woofers and six MSL-2s all powered by Crest.

Because one must always have 'Fun' with a capital 'F', there are a myriad of small bars and feature rooms across the ship. The nearby Apollo Bar, complete with pianist and baby-grand, is essentially a posh version of a karaoke bar. The pianist also doubles as technical operator and through the AMX control system which sits on the piano, he can control lighting and events. A microphone placed on each table is fed into a MIDI controlled Yamaha Promix mixing desk: microphone selection on the touch panel automatically mutes the overhead loudspeaker to prevent feedback and triggers an ETC

GLANTRE FIT FORMULA SOUND PRODUCTS IN 'CARNIVAL DESTINY'

Guardian CX4



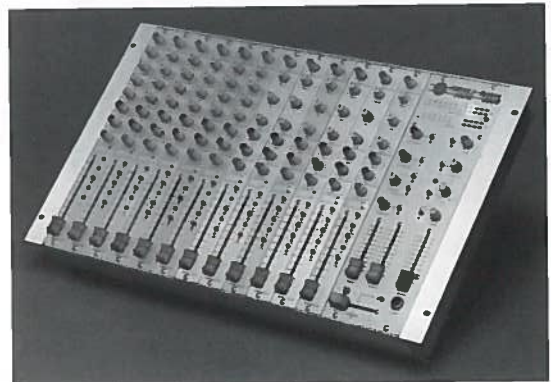
The Guardian CX4 fire alarm interface unit will interface with any existing or new sound installation. It is a four channel device and has two distinct functions.

Priority override - the control input is connected to the fire alarm or any other triggering method. When the unit is triggered the programme level in all four channels will be attenuated and the priority input automatically mixed into all four outputs.

Noise limiter - the unit has the provision for controlling the maximum permitted volume level in any venue to conform with noise pollution requirements. The attenuation and mic levels are fully adjustable to meet any local authority regulations.

The CX4 is fitted throughout the 'Carnival Destiny' audio system.

System 2000



The award winning System 2000 modular production mixer is available in 8 (19" rack mounting), 12 and 16 channel format. The comprehensive range of facilities in this mixer make it suitable for use in radio stations, discos, clubs, cabaret, production studios, etc.

In the 'Carnival Destiny' the System 2000 is used as the DJ mixing console.

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Microvision lighting console to position Clay Paky MiniScans at the table.

Downbeat is a jazz-style bar, low on space, but high on theme, with French horn-style tables and columns fashioned as clarinets. Thomas Par 20s, an ETC Microvision with AMX interface for control of both stage and house lighting, and a Meyer-led sound system feature here, whilst in the Allstar Sports Bar the main focus are seven 40" colour video monitors with the barman having control of audio and video sources via a touch panel located behind the bar.

The Galaxy and Universe dining rooms are just two of the many rooms dedicated to keeping hunger at bay. It's impossible to resist serving up the facts on food consumption. In just one week, the Destiny will serve its guests 6,000 pounds of chicken, 800 ducks, 22,000 shrimps, 6,800 hamburgers, 600 pounds of salmon, 42,000 eggs, 56,000 slices of bacon, 16,000 tomatoes, 6,320 bananas, 33,000 beers and over 1,500 bottles of champagne - and this is just a taster of the total food inventory.

Like many of the rooms, there is little, if any, effects lighting, but background audio systems, as with the majority of venues, are a key feature. Both restaurants have a mixture of Bose 102s and 502s, again powered by Crest with BSS and KT processing.

Having filled their passengers with endless



The Rotunda main atrium, complete with fibre optic ceiling.

calories, the Destiny has then to offer some means of losing them. Hence there is a Nautical Spa health club across the Spa and Sun Decks which features a multi-zone gymnasium, aerobics area and juice bar. The gymnasium has a zoned background music system based around Meyer UPM1s for which Glantre custom-built a switcher system. The aerobics area, which is fitted with large screen video projection, has further Meyer speakers, whilst the Juice Bar next door has Bose ceiling speakers and a second Glantre switcher. Six music channels are available in the massage cubicles fed through Tannoy speakers, as well as locally-generated sources in each area.

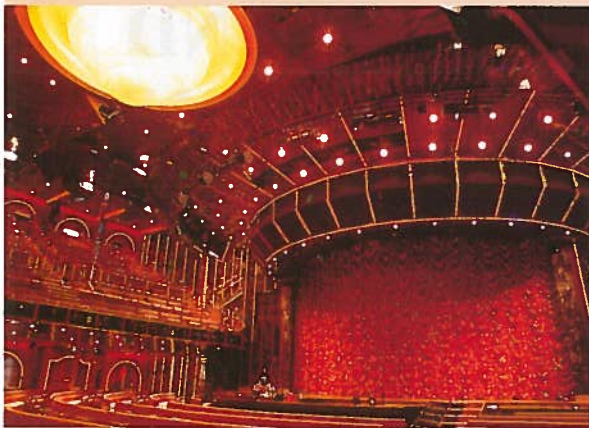
The main upper Lido Deck has a tiered entertainment area that spans across four decks

and includes swimming pools and a massive 200-foot spiral waterslide. Aft is the ship's unique Sky Dome, a retractable cover that can enclose the area allowing deck activities to continue in the event of inclement weather. The Lido also has a bandstand with a permanent canopy and daytime performances are a regular event during Caribbean cruising. There are, on odd occasions, night-time shows also. Accordingly, this area has a high power audio system with Meyer speakers and outdoor performance lighting using ETC Microvision console L86 dimmers and Thomas weather-proof Par cans.

It's impossible to detail every piece of technology aboard the Destiny, suffice to say that in terms of totals, it probably gives the food inventory a run for its money. Much has been made of the size of the ship, though it shouldn't come as too much of a surprise, as most of the major operators are at pains to continually chalk up the tonnage in the chase for more passengers. Size isn't everything, but in the cruise industry, perhaps understandably, it seems to have become a key issue.

Does it actually translate into a better cruise for the passengers? Well, if Carnival's determination to provide what is, to all intents and purposes, a floating 'city' is anything to go by, then the answer is probably yes.

Main photos: Carnival Cruise Lines



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SECOND TAKE

John Watt's View from Beside the Camera

I am at a bit of a loss. Why is it that the status of lighting people in the theatre, concert, industrial and presentation worlds is deservedly high, whilst the TV lighting directors standing is under threat all round? I have just heard from Alf Hunter in Canada (a sort of one-man society of lighting directors), who says that in CBC, for instance, only the three LDs in Toronto are solely engaged in lighting; elsewhere it's only part of a more general operator's role.

I wish it wasn't so here, but it is happening all too rapidly - presumably in yet another cost-cutting exercise that benefits the balance sheet but not the pictures and production values. More and more an experienced LD is engaged just long enough to see the show up and running, after which he leaves it to a gaffer, console operator or whoever, who can hardly be expected to feel a responsibility for the design.

I find it quite tough getting the lighting right without having to run five cameras or the VT machines or book lines or roster staff as some poorly-paid staffers have to do. Lighting isn't a function that has been affected by the electronics/computer revolution, producing a plot that works is at least as hard as ever. Actually, quite a bit harder with the constraints on time and money and the proliferation of new-age directors who under-rate production values in general and the dynamic contribution lighting can make to any production.

One way of keeping creative types in their place has manifested itself in the fast-growing field of Virtual Reality. I know I was pretty hard on this technique using blue backgrounds and computer-generated scenery when I reported on IBC last year, but recently I was given a glimpse of what the BBC are doing in this field. It's an inevitable development I guess: like death or owning a Volvo, it will happen whatever you do. I was interested to hear a young producer describe the advantages of designing his own scenery on his PC at home and being able to travel amongst images of scenery, thus exploring available camera angles. Pity Constable didn't have a computer - he might have found a better angle before he

bothered painting *The Haywain*.

The prospect of doing five shows a day from the same studio was a big selling point - to change the scenery, simply pop in another disc. You can see examples already on the screen: no set designer would ever produce these grotesque, distracting images except as a novel way of handing in his notice. I suspect the true costs of this technology are also being creatively presented, but the machines do as they are told and don't answer back. It has yet to strike the champions of the systems that this is *all* they do.

Just when I was going to lighten up comes the news that the BBC is to 'withdraw' from scenic, costume and make-up design. The media seem to have focused on the loss of costume design, though it's difficult to decide which is the bigger disaster. A spokesman was quoted as saying: "Design has increasingly become a freelance business . . . all the major broadcasters are already out of the design business." What Mr Lumley, controller of London Production Resources, fails to take on board is that it is the incentive provided by the consistently high standards of the BBC that have kept standards up in the commercial sector thus far. Commercial organisations will spend as little as possible on aesthetics if they can get away with it. The BBC is unique in not being beholden to shareholders and megalomaniac boards of directors and can set its sights higher. Left on their own, the Murdochs of this world aim low and miss. I would like to think that my obligatory licence fee is spent more imaginatively than the principles of business dictate. I also note that they are to set up an agency at TV centre to advise producers on which freelancers to use: isn't one of the primary skills all my producer friends have that of putting together the team?

Anyhow, back to lighting - well, *illumination* anyway. I was asked a few months ago to fix a few kilowatts to light an American Football match in Dublin. It's a long story, which I will spare you, involving much heavy negotiation and the dreadful business of getting alternative



quotes - a normal business practice which I find pretty distasteful. The eventual winner was Musco Lighting of California (not the nearest hire company to Dublin). Like me, you will have seen the mobiles (albeit only in magazine articles) which basically comprise a very large cherry picker with on-board generator and an array of up to 15 6kW HMI lamps, each individually remotely controlled. However, with time, distance and availability constraints, Musco suggested a more low-tech solution which nonetheless sounded a bit far fetched at first to your humble correspondent.

"We'll drill a hole at each corner of the pitch and stick a pole in with some lights on the top." 'Pull the other one', I said, but that is exactly what we ended up doing. True, my hoped-for level of 1500 lux had to come down to 1000, but across a couple of days four 20ft deep holes were drilled, four 130ft poles popped in and 180kW of lighting stuck on the top. The result was a very even 1000 lux over an area of grass about 400ft by 250ft with throws of up to 500ft. I even persuaded myself that there were real elements of key and rim lighting - you learn something new every day.


Christmas is now just around the corner. As you know, I like to be of service and some of you will still be stuck for gift ideas, so in common with every other magazine at this time of year, I will give you a few present ideas.

A roll of blackwrap is always acceptable - wrapped round the turkey it gives that elusive barbecue flavour. A well-braced heavy duty stand painted green and covered in tinsel can look like a christmas tree to the casual observer and should last for a few seasons. No problem with the fairy falling off the top - you get one with a one-and-an-eighth spigot and it's adjustable in height too.

How about the egg crate from an ARRI 5k softlight? Brought down gently over a rolled-out slab of pastry, a lattice-topped pie can be produced. As a cheese grater they are unsurpassed. I wonder what they really make them for? Alternatively, a 7lb bird can be done to perfection on a DeSisti 2k on full spot in about two hours - tilt up and down every half hour to baste (mind the stuffing doesn't fall out - of the lamp that is, not the bird). Finally, for the man who has everything, how about his very own Cyberlight? - it gives better effects than you average fairy lights from Woolworths and is far more versatile.

Have a happy Christmas and a prosperous New Year in which you don't get found out!

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EQUIPMENT NEWS

Teatro's Versa-Disc

The new versa-Disc from Teatro is a colour wheel and effects disc aimed at smaller venues, educational establishments and amateur users.

Launched at the PLASA Show in September, Versa-Disc contains a microprocessor controlled stepper motor, the spindle of which accepts a small cardboard disc which forms the 'hub' of the wheel. The previous problem of shadows produced by such effects has been overcome, and the colours blend smoothly into one another. The unit is supplied with analogue control device as standard, with add-on DMX card as an option.

Also from Teatro is a new cyclight version of their innovative Colourbox-2, specifically designed for use with the company's 1000W Diluvio floodlight.

For further details contact Teatro in London, telephone 0181-878 6626.

Hire Track on Track

Navigator Systems brought out their award-winning Hire Track rental management package at PLASA 95, where it collected a prestigious Product Excellence Award, and later went on to win a Live Silver Award for New Technology 1996.

The company now report that the use of Hire Track has been secured in over 120 sites in 13 countries. The authors, who have an entertainment hire background, put their success down to the fact that they were in an ideal position to produce a program that suited the user, rather than trying to modify an existing program for use in the entertainment industry.

The package concentrates on ease of use and speed of access, and all users receive free 'maintenance upgrades' approximately every six weeks as new features are added to the program.

For further details contact Navigator in London, telephone 0171-700 5000.

AFM Movie Star



AFM Lighting has developed the Movie Star System, aimed at the film and television industry, for safe, versatile, crane-mounted lighting.

The heart of the system is the automated Fresnel head, available with a choice of light sources - 12 or 18kW HMI and 20kW incandescent. The head has remote-controlled pan, tilt and spot/flood capabilities, with a dimmer shutter and colour changer facilities to be available shortly. The Movie Star crane can accommodate one, two or three heads, with a maximum mast height of 55m (178ft). Alternatively, the heads can be mounted directly onto pre-existing structures such as trussing or scaffold tube.

The Movie Star heads can then be effortlessly positioned and focused via remote control. Various control options include the very simple, custom AFM hand-held pendant remote. Alternatively, the system can be run from any standard lighting controller, enabling easy integration of the units into general moving light scenes. Full remote radio control is currently being developed.

For further details contact AFM in London, telephone 0181-752 1888.

Hell Freezes Over

Howard Eaton Lighting Limited reports increased interest in its recently-enhanced dry ice machine.

The unit now has a DMX-controlled variable speed fan and pump and a new heater protection circuit and is also protected against corrosion by a hot dip zinc coating process. Purchases have included four machines shipped to Holland for use in Miss Saigon, two to Neg Earth Lights and another to Glantre Engineering for one of their many cruise liner projects.

For further information contact HELL in Cooksbridge, telephone (01273) 400670.

LSD Hoist

Light & Sound Design has commissioned Out Board Electronics to produce a chain hoist motor controller. Sporting the LSD logo and built to the company's own specifications, the system will be pressed into service on the forthcoming Michael Jackson tour. Out Board has supplied the system in a rugged 3U high 19" rack-mounting unit featuring heavy duty connectors and controls.

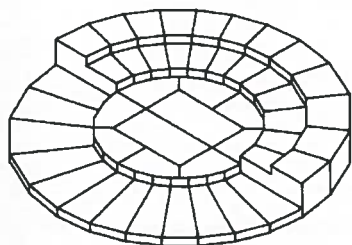
For further information contact LSD in Birmingham, telephone 0121-766 6400.

Clean-Cut Holes

Electro-Replacement have introduced the Multi-Holecutter, a versatile hole-cutter for recessed lighting or ceiling loudspeakers. It has an adjustable radius blade and a transparent cowl which catches the waste from the cutters. Available in three sizes, the it can be used with variable-speed hand drills or drill presses.

For further information contact Electro-Replacement in Watford on (01923) 255344.

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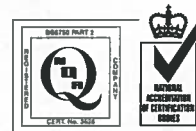
Examples of our fibre optics may be viewed at our London showroom, from subtle backgrounds to fibre optic fireworks. Leaflets available.



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APOSTLES IN THE STALLS

We may be watching London's last gasps as the home of the technomusical, but at least those gasps have a fair amount of breath in them. Cameron Mackintosh has had the nerve to take a second look at *Martin Guerre* after just four months. Andrew Lloyd Webber's second look at *Jesus Christ Superstar* has taken rather longer - nearly a quarter of a century, in fact, since it opened at the Palace.

Superstar was first staged at the Mark Hellinger in New York by La Mama's Tom O'Horgan, already notorious for directing *Hair*. Robin Wagner and Randy Barcelo did the sets and costumes, Jules Fisher the lighting. Fisher was retained for London, but the equally flashy staging there was by the Australian duo of Jim Sharman (director) and Brian Thompson (sets).

The first bad news is the Lyceum itself. It's wonderful that Apollo have spent £15 million on the refit, but a crying shame that the result has none of the refinement shown in their earlier efforts such as Edinburgh's Playhouse. Descriptions of the decoration have included 'Indian restaurant' and 'Texas bordello'. It's probably enough to call up the spirit of cheap music-hall or suburban palais de danse - both of which are indeed reflections of the Lyceum's chequered history. You enter through naff pub doors whose frosted glass obscures the view of the foyer stairs, which are footed by ghastly mats proclaiming this to be the Lyceum Theatre. This may be an acknowledgement of the mats that old photos tell us were once there, but they make the entrance look like licensed premises. Your £2 programme will give you a long historical article on the old Lyceums, but won't tell you who did the refit (Willmott Dixon), who were the architects (Hoolihan's) or whose was the overblown colour scheme (Amanda Fletcher) for the new one.

It's the finishes that mar the colour scheme. The rich ruby in most of the assembly areas is all very fine and theatrical, but the stipples on it look unfinished, and the use of gold and silver outlines in the same rooms is definitely a mistake. If you want to see a more sensitive reflection of the interior decoration of the period, you have only to go into the Wellington pub next door.

The auditorium is something special in its feeling for space. It has wide aisles downstairs and plenty of room between the seats, yet in spite of its big stalls area with little overhang from the circle, looks amazingly intimate for a



Martin Guerre in the West End.

2000-seater. You can just catch the swallows flying across the lovingly-restored ceiling, since there's so much lighting rigging in the way.

David Hersey has (as Rob Halliday will no doubt tell you in his article next month) introduced some real state-of-the-art machinery. What is strange is that Hersey's lighting, although it relies on a more limited palette of blues, whites and the occasional reds than the average rock and roll rig, seems more suited to Robin Wagner and Brian Thompson's original high-kitsch settings than to John Napier's more subdued effort for the Lyceum.

Napier's mini-Colosseum on stage is supported by trademark found-wood constructions coming out into the auditorium to provide walkways and gathering points for the crowd, and his only big item of mechanics is the bridge which descends just behind the pros from time to time. Against this muted setting, the Hersey lighting comes across as somewhat aggressive in most scenes. It's only really appropriate in the Herod interlude, complete with a splendid ring of floor-spots followed by gas flames, an echo of *Joseph's Pharaoh-as-Elvis*, where most of the non-white members of the ensemble are drafted on stage to support Nick Holder's huge vibrating jelly-mould of a Herod in an uncomfortably racist display of bare black buttocks and leather-studded bondage gear.

After the crucifixion, which is climaxed by a huge 70kW flash of light (not a great success, as all it does is force the audience to shut its

eyes), there is one of the show's few non-rock scenes, when the band's reeds come into their own and the stage is empty but for a drizzle of stage rain.

Richard Ryan's sound is quite a step up from the intimacy of *By Jeeves*, but he makes the transition well. You could argue that he has placed the band sound rather too far back - it appears to come from behind the set, where they are indeed sitting - but it does enable you to get the full impact of the very fine voices which are a feature of this production.

Superstar will always remain a high-class rock concert, and Ryan's work in laying on concert conditions for the singers will ensure its success. I only noticed one moment of glitch, when Caiaphas's mic came in late. But the expensive lights are also noisy - when Judas comes back in the second half to sing 'What's the Buzz?' I thought for a moment he was referring to the scrollers.

The questionable taste-level of the Lyceum management was confirmed after the show, when I popped into its very handsome stalls Gents (usefully placed next to the VIP lift, for the benefit of incontinent notables) to find a fine soprano rendering of 'Panis Angelicus' (I said *panis*) being piped in (if that's a safe expression) to the pissoirs. Better than 'Don't Cry for Me, Argentina,' I guess.

Meanwhile, back at the second First Night of *Martin Guerre*, there was much to be glad about. Briefly, the show now makes much more sense than it did, with a radical rewrite of the first half and some useful clarification in the second. It's down to a sensible duration, with much improved lyrics, and a considerably lightened score. Artistically, it works a treat. Technically, it still has a way to go.

Rebuilding a show while it's running must be quite a task, as much for the technical staff as for the cast, and with number order being changed right up to the new opening (there was still one song listed out of sequence in the new programme) the replotting of lighting, sound and automation cues will have been a nightmare. It showed on the night, with some microphone problems, the occasional wandering spot spilling where it shouldn't and an embarrassing moment when a projector came full on with no slide in it. These minor irritations will have been put right by now, but the show could be still better.

There are now more projections, which beef up the stage picture considerably. The Corot wood slides make more than one appearance, and the wings are occasionally enlivened with slides of houses. Yet the show is still short on the kind of big visual appeal audiences expect in a show of this magnitude - waltzing wooden towers, however clever they may seem to their operators, are just not interesting enough. Time and again the action takes place against a bare cyc, or undecorated wingspace. The 'stained glass' gobo which heralds the church scenes is a few garish patches of gel where it could have been a genuine Gothic window.

The responsibility for this lack of visual stimulus is a blurred one, but either David Hersey or Nick Ormerod, probably both, should be asked to go back and do some more slides, better gobos, and generally join up a few more design dots to give the audience a richer, more colourful evening - one that will match the now vastly improved action and music.

Ian Herbert

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THE HEAT IS ON

Temperatures soared in Orlando in late November, but Lighting Dimensions kept its cool. Ruth Rossington reports



Clay Paky's Pino Tinto (left) joined Jack Kelly and Norman Wright of Group One to collect a best lightshow award from David Barbour of TCI (right).



Derrick Saunders and Ken Sewell of Pulsar with Ron Bourque of Global Future Technologies.



Brian Croft (left) and Andy Voller (right) of Vari-Lite with LD Rick Fisher (centre, left) and Mark Jonathan of London's Royal National Theatre.

When Intertec Publishing purchased the Lighting Dimensions show earlier in the year, expectation began to build as to what this year's LDI would offer. With the extra resources available to the Intertec Group, there was some speculation that the show would be 'repackaged'. Part-way through the year, it became clear that Intertec had no intention of tampering with what was an already successful formula and so this year's LDI had much the same feel as previous ones. That said, the show did seem a degree or two more upbeat - no doubt coaxed into such jocularity by the genial setting of Orlando and by the ease with which the Orange County Convention Center soaks up the show. On the show floor it was business as usual...

Following a period of consolidation, Clay Paky showed that they are still innovators when it comes to entertainment technology by launching a number of new products.

The Stage Scan HMI 1200 owes much to the Golden Scan HPE, but claims several additional features for its own, including automatic focal adjustment from 25 degrees to 13 degrees in six selectable steps and full colour mixing. Whilst this addition to the range will be welcomed by lighting designers, what will cause eyebrows to raise is Clay Paky's decision

to enter the smoke machine arena. In a move that now places them in line with Martin Professional and High End, the company have tooled up to produce the Golden Fog 1000 and 2000, based around a non-toxic, water-based fluid. Last of the new breed was the Versatile Image Projector, or VIP, a non-intelligent 300W projector which will be snapped up by retail outlets and small clubs. It features two metallic bars which can accommodate colour wheels, dimmers, mirrors (fixed or moving) and gobos.

Clay Paky bedfellows Pulsar arrived at LDI with the Masterpiece 108/Replay Cueing System which allows the user to cue the Masterpiece range of controllers via a Windows-based graphical interface. Audio, video and lighting cues can be combined and cued from a single mouse click or touch of the screen. The system uses MIDI to cue the Masterpiece controller which allows up to 16 Masterpiece 108 or Replay Units to be run simultaneously.

Martin Professional are always quick to build on a successful product launch, hence the MAC 600, logical stable-mate to the MAC 1200. Built on the same movement principles as the 1200, the 600 is a driven-yoke mounted projector which uses the industry-standard 575W MSR lamp. In addition to the colour

wheel, the MAC 600 incorporates Martin's own full colour mixing system and, critically, due to its convection-cooling principle, does not require a fan, lending it particularly to theatre and TV applications. LDI also presented an opportunity for a closer look at Lighting Director, first seen at PLASA. In essence, this is a performer-controlled followspot system, along the same lines as Autopilot. It interfaces with existing DMX controllers allowing control of up to 64 fixtures and has a 3D mapping system which triggers any or all of a variety of light, video and audio sources.

As has been well documented, Martin acquired JEM six months ago and LDI offered the American audience a chance to see the first new product jointly developed by the two. The Hydrosonic 2000 features JEM's patented HOT technology where sonic transducers, instead of heat, are used to agitate the water-based fluid to produce the hazed environment. Martin Professional Inc, meanwhile announced their new partnership with JEM which takes the form of a distribution agreement in which Martin Inc, and its sales and service network across the US and South America, handles the complete range of JEM products.

Having put an unsettled few years behind them, a revitalised Morpheus Lights were once



A Martin Professional trio of Ian Kirby (left), Jon Petts (JEM) and Pio Nahum (right).



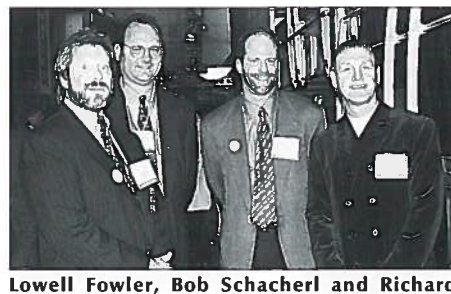
Lou Farina and Bob Kliegl of Altman with the new Luminator low-end followspot.



Mike Lowe of Teatro (left) with PLASA chairman Paul Adams (centre) and Rob Peck of Gemini.



Phil O'Donnell of Strand Lighting US with Jacquie Tien of LDI and Peter Brooks of Zero 88.



Lowell Fowler, Bob Schacherl and Richard Belliveau of High End collect a Product Award from Bob Cashill, editor of LDI (second, left).



Rick Salzedo (left) and Steve Warren of Avolites (second, left) with Cathy McHugh of LDI and Karl Ruling, ESTA's Technical Standards officer.



Mike Wood and Chris Reynolds of High End Systems with the award-winning Ecodome for both Studio Color and Cyberlight fixtures.



Tim Burnham, Fred Foster and Adam Bennette of ETC who launched Jr.

again causing jaws to drop with the BriteBurst, first seen at PLASA just two months earlier and now on tour with Garth Brooks and Gloria Estefan. As the name implies, this is a very bright, searchlight-quality light that pans and tilts, has variable beam diameter, mechanical douser and a colour system that utilises both the Morpheus XL Ranger and the soon to be released XL Fader. The irrepressible Jim Gordon, now joined by the equally ebullient Charlie Malings (who is setting up a new sales division), was also keen to draw attention to the reintroduced ColorFader on which the colour media has been improved with the result that light transmission has been increased.

Geni Electronics, who produce a wide range of intelligent lighting projectors, diversified slightly with the Ultima2 - a new display projector, aimed at the promotions and point-of-sale markets.

With no hint yet of the promised VL7 from **Vari-Lite**, all attention was focused on the VL5A wash luminaire, an arc version of the VL5, which uses a 700W MSD lamp, combined with a fluid-filled plastic membrane which allows for automated changes to the beam angle. It was this innovative technology that led it to be nominated for, and eventually share with High End's Studio Color, the best Entertainment Lighting Award. The VL5A, which can be controlled from any Vari-Lite console or driven from a number of DMX consoles, harnesses the talents of the Dichro*Tune radial colour changer to produce smooth, full colour spectrum crossfades. Also new was the UDM - universal DMX module - whereby specific DMX512 luminaires are automatically mapped to the Artisan desk, allowing these luminaires to be programmed like any Vari*Lite luminaire.

With a heavy-duty, faceted glass dichroic mirror, designed using computerised optical systems at ETC's research facility in California, the new offspring of the Source Four was born. Aptly named Jr, the new light capitalises on its lineage inheriting the same 575W HPL lamp and colour frame as the Source Four, but

without the rotating barrel and offering a lower light output. Available in three versions, with 26, 36 and 50 degree field angles, it can be used with ETC's patented Dimmer Doubling technology so that users can double a dimming installation without buying more dimmers or pulling more wires! Although it will largely find a home in theatres, there's no reason why Jr shouldn't make its mark in the architectural market also.

All the main players seem to have their eye on the architectural market, perhaps none more so than **High End Systems** who at the opening of their Munich office earlier in the year more than hinted at new developments in this field. And they didn't disappoint. In true High End style, they have eschewed the conventional route of a dedicated outdoor fixture, and simply taken their Studio Color and Cyberlight fixtures and placed them in architectural housings. The Ecodome, which picked up the LDI Architectural Lighting Award, bears more than a passing resemblance to a Dalek and is probably almost as invincible, with a polycarbonate dome atop a modular base manufactured from the same material as Samsonite cases. Not one to miss an opportunity, the company had also seized on the ultimate showcase for their new product by lighting the facade of one of the main conference hotels, the Omni Rosen.

With plans for the Millennium moving up a gear, and a universal penchant for our buildings to be well-lit, it would be a brave company that chose to ignore the opportunities offered by this largely untapped market.

As John Offord's interview with Jim Ryan, the new managing director of **Strand** will answer most people's questions, I won't go into too much detail here, except to add that the company introduced the Mini Lightpalette control console and their new full-sized Lightpalette now with a Pentium Pro processor for enhanced capacity. The company's new ShowNet Intranet/Ethernet signal distribution system was also featured.

Altman launched a completely new low-end followspot, the Luminator, which effectively fills-out their followspot range. This compact fixture uses an FLE lamp with six colour boom system, mechanical dimmer and has its control arms located on the top. Bob Kliegl was pleased to relate that all units from the first production run have been spoken for.

Horizon is a new idea in lighting control from **Rosco** and **Entertainment Technology**. The system runs from a PC, setting cues, assigning channels, handling sub-masters and running shows. It's a step forward from conventional consoles in two ways: firstly, you run the 'board' with a mouse and keyboard, and secondly, the system offers total show control so that, in addition to the normal complement of lights, it can run moving lights, fog machines, turntables and other DMX devices.

As touched on in our news pages, **Novatec Group Inc** have been appointed exclusive US distributors for **Celco**, **Cloud Electronics** and **Citronic**. The company have already successfully established the trio of UK manufacturers in Canada and Brock McGinnis, Novatec's president, is confident that when the company sets up its Columbus, Ohio-based office in February, that potential will be further extended, especially as LDI yielded potential dealers for an extensive US distributor network.

The debate over a common protocol continues apace and DMX issues were high on the agenda. **Interactive Technologies Inc** released its first consumer product for the stage lighting industry, the MicroTech DMX, which received an LDI Award. This device is a handheld DMX receiver/transmitter which views channel levels, tests dimmers and displays other console parameters. ITI also detailed their plans to release RadioDMX, a wireless DMX network solution using digital spread spectrum technology which should start shipping in February next year. This is the company's first LDI show although they have been involved in the lighting industry for three years, primarily acting as a full service contract



Left to right, the new line up at Morpheus of Trent Brockmeier, Brian Richardson, Jim Gordon, Peter Dalton and Dan English.



Rosco's Stan Miller (right) and Gordon Pearlman of Entertainment Technology with Horizon.



Jacqueline Ruellan of Hardware Xenon.



Kevin Baxley and John Wolf of Scenic Technologies with Patti Thurston of PRG.

R&D company designing and manufacturing digital electronics for other manufacturers' DMX-based products.

Alcorn McBride's LightCue records 512 DMX channels in real-time. Through stand-alone or PC-driven operation, it records the output of any lighting board, storing over three hours of continuous DMX data.

One of the most innovative solutions to the thorny issue of DMX was to be found on the stand of **TMB Associates**. The DMXPort, designed by **Flashlight**, is a long-overdue answer to DMX cabling and control problems. The company could not identify a DMX system on the market that they felt served all their needs and so opted to design and manufacture their own. The point of the DMXPort is that it provides a more standardised infrastructure for lighting systems. It uses standard Ethernet cabling systems and protocols to transfer data from lighting controllers to dimmer packs, scanners, scrollers and anything else that needs DMX512, AVAB or Lightwave protocols to function. Its three communication ports can be individually configured as in- or output, whilst configuring and updating can be done over the Ethernet, even with remote connection.

Also part of the **TMB** enclave was Italian manufacturer **Teatro** whose Versa-Disc, aimed primarily at smaller venues, allows designers to create special effects with colour filters and rotating masks by virtue of a small cardboard disc fitted to a microprocessor-controlled stepper motor.

As audience expectation drives developments in scenic technology, **DHA** are now promoting a new glass range of gobos, the advantage being that these will hold more intricate images and are manufactured so that light can be projected around dark 'islands' of image with no tagging necessary. As the standard image resolution is 2,400 dots per inch, the stepping effect of digitising an image



Fried Buttstadt and Fons de Vreede of Flashlight with Clive Salmon of GE Lighting.

is negated. The ability to image onto coloured, dichroic glass is a major addition to **DHA's** repertoire and its versatility has been demonstrated by recent projects for Virgin Cola and Trans Euro.

Six of the new 5000W Optimal Light Source projectors from French company **Hardware Xenon** feature on the US tour of Riverdance, which opened in October for a seven-month tour of the US and Australia. The projectors, which offer greater light output and seek to redress the problem of hot spots in the centre of the slide by more even illumination, are equipped with automatic slide changers for up to 40 slides and are also using the latest 105mm wide angle lens which gives an image of 30 metres at a distance of 20 metres - critical for theatres where space is at a premium.

Gary Crawford, the man behind **CITC**, worked for 25 years in the film and television industry as a special effects co-ordinator. That expertise has been brought to bear in the company's range of scenic treats. Chief among these is Snobiz (another LDI award-winner), a biodegradable version of the real thing, only without all the attendant mess, which has 3D snowflakes, can be easily vacuumed up and has already caught the eye of Disney. This lot must have great fun in the labs because their other key products are the Little Blizzard Snow Machine which delivers from a flurry to a blizzard of dry-foam flakes and the Spacehazer, a new haze machine shaped like a spaceship(!) that produces an odourless, even haze. That the entire **CITC** team were dressed in white lab coats will come as no surprise.

Another US company **ETA**, manufacturers of lighting and dimming control, had a new DMX512 series of dimmers, in four and eight channel versions. They were also catching the eye with Fluorestroke, a high-intensity blacklight fluorescent strobe.

City Theatrical has always been a great



DeSisti's Mario and Fabio DeSisti (centre) with Josh Monroe (left) and James Conticello (right).

source of accessories and add-ons, largely because their products are based on ideas gleaned from lighting designers and technicians in the industry. Their catalogue is full of wonderful gadgets and gizmos, and this year's crop is no exception. Perhaps of most interest is Boomerang - a drop-in colour change assembly which will turn any Source Four or Shakespeare fixture into a followspot. The Boomerang was designed by Chris Lewton, chief electrician at the Arena Stage in Washington, for a production of *Candide*. We should see more of their kit in the UK in months to come as the company have recently appointed **TMB UK** as their UK distributor.

1996 has been quite a year for **Bandit Lites**. The company's grip department blossomed into full bloom under a new general manager and their expansion into Asia continued apace. They also acquired a new facility in Nashville and by the time L+SI hits the streets, they will be into an additional 50,000sq.ft in Knoxville.

The stand of **AVAB** was packed with interesting product, not least of which was a sprawling wall-mounted mural of the company's Kent Flood pirouetting his way across the stand. Some of the product has already been seen - both Offstage (a visualisation programme) and StarTracker (an Autopilot-like followspotting system) were at PLASA, but in Tiger and Presto, we had two completely new desks. Tiger is a PC-based system, with a compact keyboard, offering from 32 to 6,000 channels, whilst Presto is a new low-end console which features scroller and moving light support and can work in four different modes. There was also first sight of the Modulus dimmer range, the first dimmers based on 24-bit DSP technology, and DMXTool, a new hand-held DMX tester designed by Mark Jensen of **BBI Engineering**.

Elektralite, a division of **Group One**, had the updated version of their CP-10 desk - the



Celco's Keith Dale (left) with Tom Geary of Electrosonic and the US launch of the new Ventura.



Joe Tawil of Great American Market (right) and Lee Conlon of Showcraft hands-on with a Zero 88 desk.



Dave Agar of Remote Source Lighting International who launched Light Pump.



A Wybron trio of Michael Whitright, Barry Nolan and Keny Whitright.



Derek Gilbert of Glantre (left), with a quartet from Princess Cruises of Rai Calouri, David Garbett, Martin Hall and Richard Parker.



Scott Duncan and Sylvain Roy of Kunst Macchina who featured Behaviours stage control software.



Stephany and Gary Crawford of CITC with the award for best atmospheric effect for Snobiz.



Bob Cannon (left) and George Sabbi of BASH Theatrical Lighting.

CP-10XT - which features an extensive built-in lamp library for moving lights and can also control dimmers, colour changers, strobes, and virtually any device that utilises DMX512. Group One's Norman Wright explained that the new version originated from feedback received from lighting designers and operators. As a result, additional features of the CP10XT include 128 channels of DMX with MIDI capability, 600 scene memories, 99 chases with up to 99 programmable steps and 50 programmable macros.

While the trend towards software-based solutions has swept many industries in recent years, lighting designers' interest in integrated software-based solutions has yet to be widespread. That said, if the number of software packages at the show is a yardstick, then the times are a changing. Noteworthy amongst these was **Kunst Macchina's** Behaviours Technology stage control software. This is an integrated 3D system where graphics editors and a database open up intelligent control of automated luminaires and management of show information. New developments for the Beta 1.0 release include support of many industry inputs and outputs, such as 3D capture devices and a network which manages show information and control.

There was further innovation to be found on the stand of **Wybron**, whose new Goboram is a combined gobo changer, indexer and rotator

in one. The bottom line is that it allows designers to get more out of stationary lights. Designed specifically to work with Source Four and Altman Shakespeare 600 ellipsoidals, it can change scenes, add motion and thereby create whole new effects. Designers can now spin and change up to three gobos, all in a single unit - all automatically with changes and spins programmed as show cues.

On the **Tomcat** stand, there was an innovative new stacking truss system designed by Mark Fisher. Contracted by Brilliant Stages and built by Tomcat, it is currently out on tour with both The Cure and Simply Red. **James Thomas** meanwhile, were fielding enquiries about their new truss systems, and there was also an unusual, but entirely natural, innovation to be found on their Par cans where a pressure release valve has been added to prevent the build-up of water. Sadly, it doesn't have a whistle so comparisons to kettles are not possible!

Times are also busy for **Total Fabrications**. As yet, there has been no meltdown following this summer's Olympics in Atlanta and, in addition to setting up a new office in Singapore, they are currently involved in a number of projects worldwide, most notably for the Pacifico Exhibition Hall in Yokoyama. As distributors for Verlinde, the company launched the new Stagemaker Li10 hoist into the American market - a product in which they

had a design hand, as well as unfolding their new Fold Flat Truss system, first seen at PLASA. There was also the prototype of the new One Touch Clamp - a neat little product perfect for intelligent fixtures which doesn't damage truss and which should be in full production by the end of the year.

Penn Fabrications continue to come up with new product and launched System 2 - a lightweight, portable stand capable of holding four Par 56 lamp fixtures, ideal for the live production market. More truss innovation was to be found on the stand of **ACT Technologies** who premiered the 'T' slot system.

Bash have had a busy summer with projects as diverse as the Miss America contest, the Olympics and the Republican National Convention. The end of the year will see them at Radio City Music Hall supplying dimmers, control equipment, special effects and fixed lighting for the Christmas Spectacular - the world's biggest live event, attracting over one million people, the centre-piece of which is a giant Christmas tree brought to life with thousands of lights.

As the name implies, **Remote Source Lighting International** is not only a fibre optic systems company, but an organisation involved in all types of light guide technologies. The 150W metal halide Light Pump, for example, with DMX512 microprocessor control is just one of numerous products. This 12-port, four



Jack Schmidt and Phillip Wang of Strong.



Charlie Kail of Brilliant Stages (left) and John Simpson of White Light.



Bob Gordon of AC Lighting with Nils Thorjussen of Flying Pig.



Arf & Yes's Ignace d'Haese (left) and Giovanni de Schampheleire (right) with Tony Winter of Globe Show and Dirk de Wilole of Philippo Showlights.

colour wheel unit with 40-step dimming is one of over 75 different configurations.

The Sta-Flex from **Lumenyte** is the result of the company's alliance with 3M, forged in April this year. This completely new fibre, which could give neon a run for its money, is an advanced large core plastic optical fibre that goes beyond previous capabilities in terms of optical clarity, flexibility and heat resistance, offering much improved light transmission from this side-emitting fibre.

When **Vanco** was purchased by the **Production Resources Group**, it became part of an established family, for PRG are the parent company of motion control experts **Scenic Technologies**, production company **Harris** and rental company **Cinema Services**. Although the companies retain their identity, they can also come together in major turnkey operations and recent contracts across the Group include the new 3D Terminator 2 attraction at Universal and the recent Volvo Heavy truck launch.

Tucked away in the far corner of the hall were British company **Francis Searchlights**, a



Alan World of Fort Vale Engineering and Clive Carthey of Francis Searchlights with Moonraker.

subsidiary of Fort Vale Engineering, showing for the first time their impressive Moonraker Extravaganza searchlight. This formidable light was first put to work with the British 8th Army as battlefield illumination for Operation Desert Storm during the Gulf War. As the flagship of the Francis range it packs a powerful punch with its 7000W xenon lamp and is becoming a favourite with theme parks - a fifth Moonraker is about to be installed at Blackpool Pleasure Beach. Francis have also recently opened a US sales operation in Houston which will be headed by Clive Carthey.

Perhaps one of the most easily identifiable products of the show is the **Unipar**, unmistakable by virtue of its see-through housing. Now Randy Wimberley and the team have designed a fixture that can not only produce a number of colour washes and beams, but one in which the housing itself actually glows and blend colours. There are two versions - one using gel, the other dichroics and the company hope that it will find widespread application.

Show reports by their very nature can, in the



Anne Johnston and Guy Benjamin of Production Arts with projection from Pani and ETC.

attempt to give everybody a fair shake, quickly develop into long lists. This year, we've tried to concentrate on the main highlights as much of the product on show has already been covered in our PLASA Show report in October. As this issue (and our sister publication S+CSI) also carries a report from AES in Los Angeles, the audio companies at the show have not been touched on.

Despite its proximity to PLASA, LDI still has plenty to offer. Largely, it is an activity-led event - and both on and off the show floor, there is plenty going on. Intertec's plans to switch the show alternately between east and west coast venues in future years has also been widely welcomed. Las Vegas will be the setting for LDI next year, but the event will be held one month earlier than previous shows running from October 24th-26th, placing it perilously near to the close of PLASA, barely allowing visitors and exhibitors alike to catch their breath. Interesting!

More news from LDI, together with further photos and coverage of the seminars, will appear next month.

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SETTING THE SCENE

Mark Cunningham travelled to Leicester's De Montfort Hall to catch Ocean Colour Scene on their first major UK tour and rap with the crew they call the 'family'

After trundling around the huge stadium and festival mega shows all summer, I decided to get a little more down to earth for the autumn and check out a middle-ground venue that I last visited around 13 years ago in my previous life as a touring musician: the De Montfort Hall in Leicester. On this occasion, my curiosity was fuelled by the opportunity to catch Ocean Colour Scene who, with their second album *Moseley Shoals* riding high in the charts, are surely one of the hottest live acts of the moment.

Although commercial success is a relatively new phenomenon to OCS, their history dates back to the early 1990s when they began to lay down a solid fan base on the club circuit, not least in their Midlands homeland. Their debut album may have failed to set the world alight, but the OCS name came to wider prominence ironically through guitarist Steve Cradock's appearances on record and on stage with Paul Weller. This led to support slots with Oasis and fate did the rest. Influences ranging from Booker T & The MGs, Small Faces and the Spencer Davis Group were in evidence as drummer Oscar Harrison and bassist Damon Minchella underpinned Steve's workmanlike guitar playing with a tightly locked rhythm foundation. Simon 'Foxy' Fowler, meanwhile, possesses one of the most powerful voices heard in British rock and pop music for decades. Expertly crafted songs with 1960's qualities, such as the opener *You've Got it Bad*, *The Day We Caught The Train* and *40 Past Midnight* were all highlights of the set, but a fight in the crowd resulted in the planned four-song encore being stripped to just two. It only left an ecstatic workout of The Beatles' *Day Tripper* to complete what the band later described as their least enjoyable show on the tour so far. Still, there was at least one person out there who found OCS nothing short of awesome.

Several of the band's crew members are long-term friends whose loyalty has been rewarded as OCS have grown in stature. Among them is LD Pete Wilson who has worked 'on and off' with OCS since their formation, and whose commitment was repaid by a seat on the bus for their first major tour. His task has been made easier by the close working relationship he has built up between supplier Neg Earth Lights and Avolites, the manufacturer of his Diamond II console. "I did some training at Avolites a few years ago on the QM500 and returned later to train on the Sapphire with Steve Warren. When we started putting everything together for this tour, I was offered the Diamond II and I've found that it makes the operation of moving lights a lot easier, because everything is so accessible. Although it shows 180 channel outputs on the console, the whole thing is capable of over 3,000 output channels on DMX. We are using 120 channels on moving lights and a further 60 channels on generics."

Wilson, whose experience includes working for many years on Glastonbury's acoustic stage, says that the significant advances in



Ocean Colour Scene on stage at Leicester's De Montfort Hall and below, Keith Davis and Dave Bearman of Capital Sound Hire with the band's front-of-house engineer, Tony Keach.



lighting technology which have occurred over recent years were instantly apparent when he came to specifying the OCS rig. "It's been a hell of a learning curve for me going into the moving lights scene. Fortunately, I've had some expert assistance and now the show is up and running I'm very happy. Obviously, we never get to use all the effects that are available on the 10 Clay Paky Golden Scan HPEs on the rig."

The HPEs on the front truss are used for front light positions but mostly for projections onto the three screens at the back - a square one in the centre and a round one at each side. Rear HPEs are reserved for audience swirls and other effects. In addition to the scans, Par cans and strobos form the basis of the rig, along with a few floor lights dotted around the drum kit and some bars of ACLs which give colour washes to the back and front in true rock and roll style. "I also have two Source 4s, which are very similar to Leko profile lights, and I'm using them from the front truss to act as cyc lights for the two circular screens," adds Wilson. "I have colour changers on those, with 10 colours available to fire at the screens as well as the HPEs. There are also four Molefays with colour changers to act as cyc lights for the square screen. My aim has been to make the rig as simple as possible to set up."

All the band members have been vocal about certain elements of the lighting design and as the tour was about to begin, Wilson was required to run around at the last minute in a

furious attempt to meet their demands. "They were keen to have an interesting opening sequence which is very simple, but it involved a lot of travelling on my part, backwards and forwards to DHA with bits of artwork for gobo cutting," he says. This particular sequence begins with a projection of the band's new logo, the 'Splegman', which appears vertically at first and then slowly tilts on to its side to reveal the initials 'OCS'. This is followed by the more recognisable Ocean Colour Scene 'targets'. Added to these gobos was a photographic glass of the *Moseley Shoals* album cover photo which was again made by DHA for Wilson to project at the very end of the show.

It was through his work at Glastonbury that he became acquainted with Neg Earth, on whom he lavishes much praise. "Our budget for this tour was pretty tight and so I asked for quotes from five different companies. I'm very glad that Neg Earth won the deal because I rate their back-up service as being second to none."

Wilson adds that apart from complaints from the band about the heat of the lights (so touchy, these rock stars!), he has experienced no major problems on the tour to date. There were, however, a few sweaty brows earlier in the tour when the crew loaded into Manchester Apollo. "The flight case containing the Diamond II was left upright in the rain on the way to the venue, and upon opening the lid we discovered that there was water pouring out of the hard disk drive. The chances of getting a replacement desk on a Sunday afternoon were pretty slim, but we managed to solve the problem with a few hairdriers!"

Working with the back-up of Capital's Dave Bearman was the band's regular FOH engineer, Tony Keach, who cut his mixing teeth on a Soundcraft 100 Series console back in 1978 and was also instrumental in the recording of some of UB40's early hits. He retired from live work and the music business altogether 10 years later, only to be lured out on to the road once more by OCS for this current tour, after



Lighting designer Pete Wilson.

assisting in the making of Moseley Shoals. "OCS are an amazing band to work for and I wouldn't have come out of retirement for anybody else," says Keach, whose choice of console for this tour is the somewhat more up-to-date 40-channel Midas XL3. His brief is to reproduce live the distinctive and natural sound forged on the recent album, and effects are used sparingly. "I could actually do this show with one Yamaha SPX and a Roland SDE-3000A digital delay line, but for pure ease of operation I've gone for two SPX-1000s and two SPX-900s (plus the Roland) just to save re-patching the programmes because there's very little time for that during the set. On top of those, I also have the Eventide H3000SE Ultra Harmonizer to smooth out a few edges."

Most of Steve Cradock's guitar sounds originate from his Shure SM57-miked Marshall stack, although Tony occasionally flies in spot delay effects, for which he uses one SPX with a 2.6 delay and a stereo delay of 250 and 500. He is also somewhat notorious for his stereo panning tricks on the guitar during certain numbers. For part of the set, singer Simon Fowler augments the band's sound with a Takamine acoustic guitar, the choice of which was arrived at after auditioning several guitars which Keach believes sounded thin and were susceptible to feedback. Played through an Ampeg SVT rig, Damon Minchella's Fender Jazz bass is DI'd but also miked as a stand-by. Keach makes the point, however, that as the band have been performing at larger venues, he has pushed some of the mic signal into the mix to achieve extra depth.

For Oscar Harrison's drums, he uses Shure SM57s on the hi-hat and snare, top and bottom, AKG 451s on overheads and AKG clip mics on the toms. Inside the kick drum is a Beyers M88, although this was not an automatic choice. "My first choice would be a D12 purely because they do sound old-fashioned and the band like that 1960's sound, but it is hard to get hold of. OCS are very loud on stage and sometimes the top end of the kick can bleed through into the front mix, and I don't like a lot of click on the kick drum at all, so that side of things always requires a lot of attention."

Two 57s are positioned left and right on the rotating tweeter of Cradock's Leslie speaker, which is used to great effect in the spirited cover of the Small Faces' *Song of a Baker*. Meanwhile, a C-Tape transducer system is used inside the Kawai piano.

At the start of the tour, Keach specified an



Yaron Levy, man of many hats.

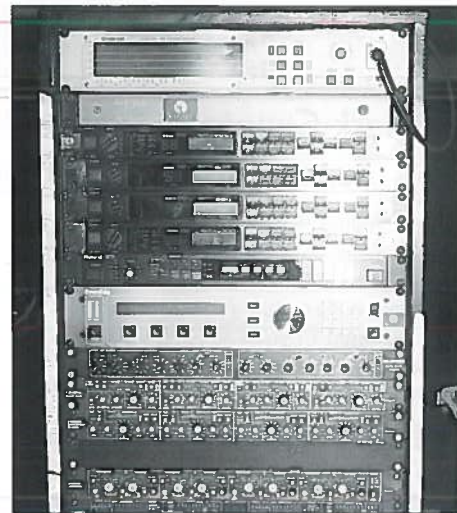
Electro Voice ND457 for Harrison's backing vocal, owing to its superior rejection to drum kit spill. However, the engineer noted a huge presence peak which led him to favour the Shure Beta 58, which is also used for all other vocals. I did point out that throughout most of the soundcheck, Fowler's vocals appeared to be struggling to cut through the mix. "I rarely have trouble getting him above the band, but we were having problems which I discussed with Dave Bearman. I use the BSS dynamic compressor on his voice and we tweaked it to get a better result."

Driven by Crown amps and BSS crossovers, the Martin F2 PA system used throughout OCS's UK tour has varied in configuration from venue to venue. At Leicester it consisted of 10 bass cabinets and nine mid/high packs per side, with two W2 centre fills. "I used the Martin F2 for the first time years ago at the Electric Ballroom in London and was very impressed. The Martin gear was always a favourite with live engineers, but it was a pain to tour with because of the amount of boxes involved - this is a much more compact system. We have used delay speakers on some other dates, which are W2s - the same type we use for centre fills which just have vocals through them. I sometimes use a pair of those on stands behind the mixing platform, just to delay the FOH mix to the back of the hall."

Yaron Levy has the pressurising task of being both the monitor engineer and stage manager. Modestly, he says that he takes it all in his stride and puts it all down to his ability to switch hats at the right time of day. "Obviously I make sure that everyone is in place to do their various jobs and as show time approaches, I slip into my engineering role."

Like Tony Keach, he has support from Capital's Kevin Hopgood and also uses a 40-channel XL3. Part of his equipment list included Martin LE700 wedges, which feature a proprietary 15" bass speaker and a 2" EV horn, and are powered by Crown Macrotech 2400 amps. There are 12 LE700s on stage, two F2 side fills and a CT drum fill either side of Oscar's kit, plus two 18" sub-basses behind him. "The guys like to crank the volume up on stage," says Levy. "They are still used to that intense sound that is inherent with small stages. Now that we're moving to large venues, they still like to retain that sound, but today most of the volume is down to the building being so reverberant. In order to get things to cut through, I've had to allow the volume to creep up. The drums are probably the loudest I've had them so far on the tour."

Typically for a bass player, Minchella has a rhythm-heavy stage mix, with a lot of kick, snare and hat in the wedges. He also has a Marshall stack behind him which is actually part of Cradock's guitar rig, but Minchella uses it to monitor the guitar and turn it up and down



The front-of-house effects rack.

in volume as he wishes. "Steve Cradock has a very guitar-orientated mix with the rhythm and vocal sitting in there as well. Naturally, Simon Fowler's mix is majoring in vocal. His acoustic guitar is quite loud in the side fill, so he doesn't need much of that in his wedges. When we do the larger stages we will also have a flown fill."

Outboard effects for monitoring are purposely thin on the ground, although Yaron Levy does use two Yamaha SPX-990s - one with a reverb setting for Fowler's vocals, the other with a heavier reverb and shared by Cradock's Leslie cabinet and Harrison's backing vocal. There are six channels of Drawmer DS201 gates on the kit, a dbx 160 on the bass and the piano requires the most processing on it due to its temperamental nature. "I have a stereo Klark Teknik graphic on it and because I wasn't getting an even balance on the C-Tapes, I have to use a BSS DPR-402 compressor as well to even everything out and it's sounding a lot better."

DPR-402 compression is also used on the mix Oscar Harrison receives through his hard-wired Garwood in-ear system. "This is the first time we've tried the in-ear system and he uses it just to hear his own backing vocals," comments Levy. "He puts the ear pieces in and out whenever he needs them and we have a wedge right next to him as a stand-by." For his own monitoring purposes, Levy uses a pair of LE700s in a mono PFL mode and also a set of in-ears to listen to Harrison's mix.

When specifying his monitoring system, Levy gave priority to ease of set-up and stripdown. "The way we've sorted everything out gives me more time to stage manage. At the end of the night I only have to worry about the two looms, control gear and speakers, and then I put on my other hat!"

During the set, the four-piece is regularly joined by guitar tech Kevin 'Ewok' Rowe, who plays piano on *40 Past Midnight*. It's also not unusual for OCS to be fleshed out at short notice by one or two of their musical allies, such as Messrs Weller and Gallagher. The crew take no chances and therefore always reserve a few channels on the desks and suitable guitar amps for these stellar guests. Unfortunately, neither were in attendance at the De Montfort Hall, but I am assured that some big surprises will be in store when OCS perform at the Royal Albert Hall in February. Until then, I have a headache to recover from, thanks to the band's overwhelming generosity back at the hotel bar. Nice one lads!

EMC UP CLOSE

John Woodgate offers an Explanation of the EMC Product family Standard EN 55103

The EMC product Family Standard for audio, video, audio-visual and entertainment lighting control apparatus, EN 55103 (Parts 1 and 2) has been submitted by CENELEC for publication in the European Union Official Journal as a standard recognised for claiming compliance with the EMC Directive. Unfortunately, there are still some lingering doubts and misunderstandings about the standard, which this article attempts to dispel. Some of the explanations could not have wisely been published previously, since they might have conflicted with opinions in other countries.

Dimmers

The first, and easiest matter to deal with is that EN 55103 does NOT apply to dimmers. This is quite clearly stated in G.2.2.4 of EN 55103-1, just in case the definition in 4.6, which refers to 'electrical control signals' might be misinterpreted to include the actual (controlled) power supply to the luminaire. G.4.2 of EN 55103-1 is an explanation of why the requirements for lighting control apparatus are harmonized with those in EN 55014.

Environments

There has been much misunderstanding, and there was determined opposition from some other countries, to the inclusion of five environments instead of just the 'two' in the Generic Standards. A number of factors are involved here, which may be summarised as follows:

- Experts from the broadcasting industry sector in UK and Germany specifically asked for purpose-built studios to be considered a distinct EMC environment, since this is fully justified on technical grounds.
- At the time of discussing this question in the BSI Panel, we noted that IEC was producing IEC 1000-2-5, which defines *eight* EMC environments, and that the Generic Standards were being revised and might, in future, include more than 'two' environments.
- The Generic Standards actually contain *five* environments: it is an unjustified over-simplification to lump together private dwellings, multiple- occupancy dwellings, commercial premises and light industrial premises as a single EMC environment. This is now being seen in many contexts to cause serious problems.
- Sound system equipment, particularly, is installed and used in many environments other than those considered in the Generic Standards, and manufacturers would not know what requirements they might be expected to meet in environments such as rural outdoors if they were not defined.

There is absolutely no compulsion on equipment manufacturers to consider any more environments than they need to in order to secure a market for a product. The standard specifically allows (and requires) the manufacturer to

state which environments the product is suited to. So the manufacturer can choose to make a product suited only to residential, commercial and light industrial use, but the standard allows him to do more *if he wishes*.

Number of requirements

EN 55103 specifies more requirements than the *current* Generic Standards. There are two reasons for this:

- CENELEC requires product family standards to be consistent with *revised* Generic Standards, which themselves contain more requirements than the *current* standards.
- While many of the requirements of the Generic Standards attempt to control effects which rarely, if ever, give problems with 'our' equipment in the field, there are other effects, notably earth loop currents, magnetic interactions and inrush currents, which do cause real problems. It is thus clearly necessary that 'our' standard should address 'our' EMC problems: otherwise we might find other committees imposing their solutions on our products.

The tables were originally published in the June/July 1995 issue of S+CSI and show where each of the requirements of both parts of EN 55103 originated. I hope that these will help to explain why the standards are the way they are, and that the fact that the standards contain more than the current Generic Standards is partly due to factors beyond the control of the writing team and partly to give manufacturers as much information and freedom of choice as possible.

Table 2: Immunity EN 55103-2

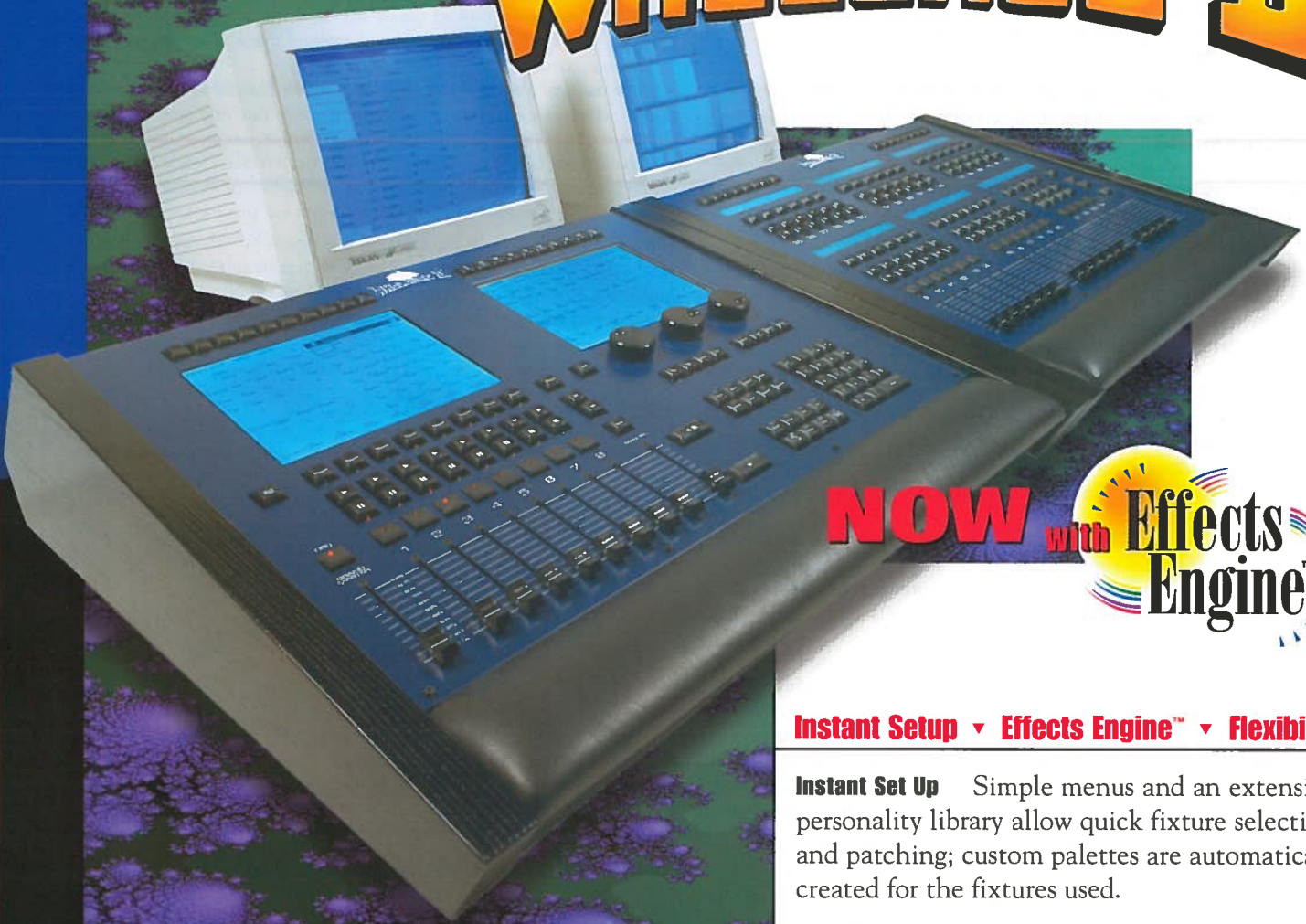
Phenomenon	Residential, Commercial and Light Industrial Environments	Controlled or Rural Environment	Heavy Industrial Environment	Criterion (type of degradation allowed)
Amplitude-modulated RF field 80 MHz to 1GHz	Imposed by Generic Standard	Special test levels justified	Imposed by Generic Standard	A
Electrostatic discharge to the 'enclosure'	Imposed by Generic Standard	Special test levels justified	Imposed by Generic standard	B
Magnetic field 50Hz to 10KHz	Test levels derived from data submitted	Test levels derived from data submitted	Test levels derived from data submitted	A
Fast transients, common mode, signal and control ports	Imposed by Generic Standard	Imposed by Generic Standard	Imposed by Generic Standard	B
AF common mode 50Hz to 10KHz, signal and control ports	Test levels derived from data submitted	Test levels derived from data submitted	Test levels derived from data submitted	A
AM RF conducted common mode, signal and control ports	Imposed by Generic Standard	Special test levels justified	Imposed by Generic Standard	A
Fast transients, common mode, d.c. power ports	Imposed by Generic Standard	Special test levels justified	Imposed by Generic Standard	B
AM RF common mode, d.c. power ports	Imposed by Generic Standard	Imposed by Generic Standard	Imposed by Generic Standard	A
Fast transients, common mode, a.c. power ports	Imposed by Generic Standard	Special test levels justified	Imposed by Generic Standard	B
Voltage dips, a.c. power input ports	Special test levels justified	Special test levels justified	Special test levels justified	B/C
Voltage interruptions, a.c. power input ports	Imposed by Generic Standard	Imposed by Generic Standard	Imposed by Generic Standard	C
Surges, a.c. power input ports	Imposed by Generic Standard	Special test level justified	Imposed by Generic Standard	B
AM RF conducted common mode, a.c. power ports	Imposed by Generic Standard	Special test levels justified	Imposed by Generic Standard	A
AM RF conducted common mode, functional earth port	Imposed by Generic Standard	Special test levels justified	Imposed by Generic Standard	A
Fast transients, common mode, functional earth port	Imposed by Generic Standard	Imposed by Generic Standard	Imposed by Generic Standard	B

Table 1: Emissions EN 55103-1

Phenomenon	Residential, Commercial and Light Industrial Environments	Controlled or Rural Environment	Heavy Industrial Environment
Enclosure r.f. radiation	Class B limits imposed by Generic Standard	Class A limits	Class A limits
LF magnetic field at 100mm	Set by industry to address racking problems	Set by industry to address racking problems	No requirement
LF magnetic field at 1m	Set by industry to address induction problems	Set by industry to address induction problems	No requirement
Mains harmonic current emissions	Imposed by Global Product Family Standard EN61000-3-2	Imposed by Global Product Family Standard EN61000-3-2	Imposed by Global Product Family Standard EN61000-3-2
Voltage dips (indirect control of inrush current)	Imposed by Global Product Family Standard EN61000-3-3	Imposed by Global Product Family Standard EN61000-3-3	Imposed by Global Product Family Standard EN61000-3-3
RF emissions on the mains lead	Class B limits imposed by Generic Standard	Class A limits: no broadcast receiver within 30m	Class A limits: no broadcast receiver within 30m
Discontinuous emissions on the mains lead	Imposed by EN55014	Imposed by EN55014	Imposed by EN55014
Peak inrush current (requirement to state)	Justified by reports of real problems	Justified by reports of real problems	Justified by reports of real problems
RF emissions from receiver antenna terminals	Imposed by EN55013	Imposed by EN55013	Imposed by EN55013
RF emissions on signal and control tables	Class B limits imposed by Generic Standard	Class A limits: no broadcast receiver within 30m	Class A limits: no broadcast receiver within 30 m



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LIGHTING BY DEGREES

As 13 students prepare to graduate with the UK's first BA (Hons) in lighting design, Lee Baldock visited Rose Bruford College to find out more about the course

Rose Bruford College is something of a unique institution. Specialising in training for theatre and related arts, it has enjoyed a long and successful history, pioneering the first degree course in acting 20 years ago and now looking forward to the summer of 1997, when the first set of graduates from the UK's first degree course in lighting design will walk out of its doors and, hopefully, into the professional lighting industry.

The College takes its name from its founder, who became a student at the Central School of Speech and Drama in 1921, winning top honours for speaking in the Oxford Recitations for Spoken Verse (begun by John Masefield) in 1928. She then went on to teach at the school, before moving to the Royal Academy of Dramatic Art in 1941, and published a book for teachers, *Speech and Drama*, in 1948. With no more than £600, she set up her own drama school in 1950 and the Kent Education Committee offered her the use of Lamorbey House in Sidcup, which was recognised by the Department of Education and Science in the same year and has remained in the public sector ever since.

Today, Rose Bruford College consists of two sites: Lamorbey House, with its 18th century architecture and landscaped gardens remains the headquarters, while a large part of the teaching facilities are at a second site situated eight miles away in Greenwich. Lamorbey House is also the setting for a new 400-seat theatre in the round, which is currently under construction and will be completed in time for the 1997-98 academic year. The new site will be equipped with the latest digital technology and, along with the smaller Barn Theatre at the same site and the flexible studio theatre at Greenwich, will provide students of theatre production with a varied experience of the use of theatre space.

The college runs a range of arts-based courses, including acting, directing, costume production, scenic construction and properties, stage management and theatre design, as well as a distance learning school which operates courses in opera studies and theatre and performance studies. The lighting design course was devised by lighting designer Nigel Morgan, now course leader and senior lighting design lecturer. In designing the course, he aimed to provide a structure within which the students could, first and foremost, develop a sensitivity to the craft of lighting. He explained: "I am given lighting design work not because I'm a great technician or wizard with electronics, but because of the effects I can achieve with light - it's the creative sensitivity which is the most valuable part of the designer."

Morgan, who is also author of *Stage Lighting for Theatre Designers*, explains the difficulties of taking an academic approach to a subject such as lighting design, in the sense that the students are, for the most part, entirely new to the discipline, whereas students beginning a music



Rose Bruford's headquarters in the attractive surroundings of Lamorbey Park, Sidcup, Kent.



The Year 1 group, Lighting Design BA (Hons).

degree, for example, will have many years of practice and experience behind them. "Students studying the violin will probably have had a violin in their homes for most of their lives. In a way, with our students, we try and make up for all the years that they spent without a lighting rig in their living rooms."

To this end, the first year of the BA (Hons) degree course concentrates very much on exploring and developing an understanding of the principles of theatricality in lighting design. There is a busy programme of student performances, with discussion sessions on conception and evaluation. They learn the effects of colour, contrast, texture and angles in composition. Also this year exposes the students to other disciplines within theatrical production, such as properties and scenic construction, costume and wardrobe, stage management and design.

As part of their examinations for this first year, the students, working in small groups, are asked to demonstrate the skills they have developed by producing a lighting project inspired by, for example, a painting or a piece of music or poetry. They are given one week to come up with their final piece, but are only allowed six hours with the lighting rig during that time. This is to mirror to some extent the way that the creative process is undertaken in

the real world, as Morgan explains: "They have to spend the majority of their time developing ideas, sketching, storyboarding and so on, to get the whole project set in their minds as far as possible before they even have a chance to get at the lighting rig. That's the way it'll be when they are doing it for real."

This project is accompanied by a written module discussing the creative process that led to the finished piece. Morgan has been impressed by the attitude of the students to this process. "They have been excellent at the crit' stage. They are very aware of what they

are doing, the effect that it has and the processes that led to it."

So with this emphasis on theatricality, are the majority of students aiming at careers in theatre lighting? Not at all, says Morgan: "For some it's theatre, others want to light rock and roll, some architecture. The principles that they learn in studying theatre lighting hold for all areas of lighting design, be it rock and roll, architectural lighting, shopfront displays or product launches. The basis of theatricality - using light to enhance, highlight or create an effect - is the same. In many ways, I believe theatre is the hardest thing to light, because the relationship between the light and the actors is such a complex one. There are many more deeper levels of understanding to grasp in theatre."

Of course, the tools of the trade and the rapidly-evolving technology are not sidelined by this emphasis on creativity. In their second year, which Morgan describes as 'the nuts and bolts year', there is a major concentration on the technology of lamps and lighting, of optical systems, electricity, health and safety, and CAD (principally MacLux Pro, but also including other, PC-based packages). The College owns an ARRI Impuls lighting console, on which students are taught programming and control. This is a far more regimented year of study, in which students are also encouraged to develop



Nigel Morgan (right) with Nick Hunt.

essential drawing skills, while the mechanics of human vision and the effects of varying lighting techniques are also dealt with at length in 'Perceptions' classes.

One such class that I observed during my visit was conducted by Rose Bruford's second lighting design tutor, Nick Hunt, who is doubtless known to many readers as the editor of the ALD's Focus magazine. In this session, there were demonstrations of the Helson-Judd effect, whereby identical grey panels are shown to appear differently under certain light, depending on the relative shade of the borders around them; another demonstration showed how saturated colours can appear black under certain primary saturated light; a group presentation concentrated on the human eye and its colour receptors, all of which helps give an understanding of why we see things as we do. As Nigel Morgan points out: "To some extent, these skills are instinctive in a lighting designer, but a thorough knowledge will always reinforce the instincts, and give the designer something to fall back on should instinct falter."

The second year students also undertake a number of practical roles within productions - as designers, technicians, operators and electricians, gaining a well-rounded knowledge of how the processes combine and rely on one another. Research for their various course projects encourages them to make links with industry, beginning the process of contact building which will hopefully lead them to employment after graduation.

The final year of the course is a process of rounding off the degree. Although the present



A third year group busy planning their final project son et lumière performance.

third year group number only 13, the first and second year intakes since then have both filled the optimum 18 places available on the course. The third year students have the chance to prove their abilities in a final special project. For this, there is a choice of areas of operation, including son et lumière, performance art, cabaret, rock and roll and product launch. Each group is given around three weeks to set up their own project. The week before my visit saw the presentation of a live rock show at the college, made up of student bands and entirely lit by the third year rock and roll lighting group for their project. Nigel Morgan was extremely impressed by the quality and the professionalism of their work. "They didn't need any help - they set up the entire complex moving light rig themselves, professionally and safely. It was their chance to show everyone that they know what they are doing and are capable." Morgan was again enthusiastic on the quality of the actual lighting design for the rock and roll set, adding: "You could see they had put their own creative responses to the music into the design. It was very rewarding to see."

On the subject of equipment and resources, there is an understandable sense of frustration at the limitations imposed by a lack of hardware, and at the same time a sense of immense gratitude to those manufacturers who have repeatedly given their assistance in various ways. These are the familiar names of Vari-Lite (all students complete the VL operator's course at Greenford), Pulsar, Avolites, DHA, White Light, Lee Filters, Rosco and others. "The industry in general is



The college library at Lamorbey Park.

tremendously supportive, and we are very lucky in that respect. If we need to borrow equipment for special events or final projects, we can usually come to some arrangement with the manufacturers. Most are very good to us."

Despite this level of support from the industry, there remain limits as to what the students are able to achieve. The group planning their son et lumière when I visited had consciously felt the restrictions - a useful lesson in some ways, perhaps, but you can't help feeling that an increase in the available scope could only fuel the enthusiasm and creativity of the students even further.

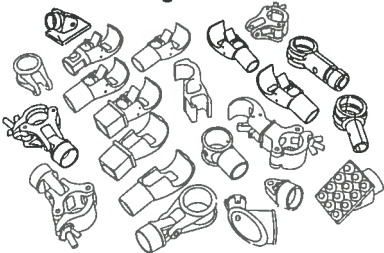
So what of the chances of the 13 who will graduate next year? Nigel Morgan is certainly optimistic, with strong views about the route he would like to see them take. He explained: "I want them to go into the industry with the top companies. With the skills they have developed here, they could aim much higher than just getting a job as a technician at their local theatre. They've been given a good understanding of the fundamentals of the business and have also been encouraged to find their own feet within it. There should be enough companies out there who see the value of that."

And that, basically, is what higher education is all about: developing a strong understanding that can be adapted and applied - the lighting design course follows this concept thoroughly. Already, Rose Bruford College proudly boasts that 85% of its graduates find work in their chosen fields within six weeks of graduating. It looks as though Nigel Morgan's hopes for the class of '97 are well justified.

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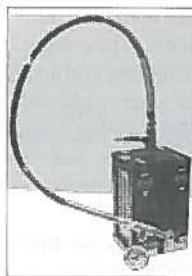
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ASSOCIATION UPDATE

Second in a regular series of news covering the work of Industry Associations



PLASA Hosts Scholarship Winner



Scholarship winner Jason Waide (right) with PLASA's Norah Phillips at the PLASA Office in Eastbourne last month.

PLASA recently played host to the first ever winner of Australia's Roger Barratt Lighting scholarship, Jason Waide, during his three week stay in the UK.

The Roger Barratt Lighting Scholarship is a commemoration of the Australian Lighting Designer who died last year. It also represents an initiative to carry on the training of young lighting designers - work to which Roger Barreth was personally committed. A legacy left by the Estate funds the scholarship, and is subsidized by donations. Pledges given by many people in the entertainment industry at this year's Entech awards amounted to nearly \$5,000 Australian.

During his visit, 20-year-old Jason spent time working closely with in-house designers at White Light, before joining David Hersey on Jesus Christ Superstar at The Lyceum in the West End of London. There then followed a tour of prominent West End theatre venues with White Light's Bryan Raven and visits to M&M, Theatre Projects and Celco.

The purpose of the scholarship is to expose the recipient to as many aspects of the lighting industry as possible. Jason has already spent three months on secondment in Australia, during which time he has worked with Chameleon Touring Systems (previously owned by Roger Barratt), Cameron MacIntosh and many leading LDs. He has been involved in and experienced diverse areas of lighting design, including Miss Saigon, Phantom of the Opera, Walt Disney's Beauty and the Beast and John Farnham's Jack of Hearts tour in Brisbane.

To be considered for the scholarship, which was run through Connections magazine, the candidates had to be lighting designers under 26 years of age. Jason Waide was singled out from a very strong field by his impressive track record. The Qantas return air ticket was provided by Stage & Screen Travel and a stipend was provided to meet Jason's living expenses during his stay.

PLASA Group Success at Intermedia 97



The Hala Ludowa exhibition hall in Wroclaw.

Established in the early 1990s, Intermedia is Poland's annual music show and this year PLASA encouraged members to take a closer look at this rapidly evolving country. The show took place in the thriving business centre of Wroclaw. Development and consumerism are now the order of the day in Poland as it strives to achieve its goal of joining the EC.

Two very successful meetings were arranged for the PLASA Group during Intermedia: the first was with the Honorary British Consul, Zygmund Grajkowski, while the second, arranged by the organisers of the Show, was a meeting of parties interested in conducting business with PLASA and VPLT members aimed at encouraging the Polish market to develop a wider network of importers for the industry.

Member companies who participated in the PLASA Group included Pulsar, Studiomas,ter, DHA, Le Maitre and JEM Smoke Machine Co. Other companies were represented solely by their own literature, under the care of PLASA's Anna Pillow. These included Celco, Transtechnic, MTR, Canon Audio, Optikinetics and Zero 88. Tad Trylski of DHA offered his interpreting services to PLASA, and proved a great help when Saf Ali from Studiomas,ter was inundated with enquiries from companies wishing to be the authorised dealer for Poland - an appointment they hope to confirm by the end of the year.

Other PLASA members represented at the Show included WDR, Celestion, RVE, High End Systems and ADB, who were on the stand of their Polish distributor, OTO, showing their new Europe profiles, as well as their ranges of consoles and dimmers. ADB report a high degree of serious business in Poland, with nearly 100 theatres and other venues equipped with their stage lighting products.



PLASA's Anna Pillow (left) pictured with Derek Saunders of Pulsar and Kornelia Kubanska of Pulsar dealers, GIG.

Internet News

The past month has seen a number of new developments on the World Wide Web, with a host of companies making their first appearance on-line, including: AJS, Apple Sound, KAM, LMC Audio, MA Lighting, Trantec, XTBA, Philips Lighting, Soundcraft, Garwood, Allen & Heath, Blick and Teatek.

Vari-Lite Inc report that their Web site now features VLDMX-Talk, an open list for general discussions on using automated lighting with DMX control, as well as controlling DMX fixtures with Vari-Lite consoles. More lists will be available in the near future. All the above sites can be accessed through PLASA's Web site at www.plasa.org.uk/plasa.

The total number of PLASA Members who now have their own Web sites linked from the PLASA members directory numbered 69 at the time of going to press, with more on the way. PLASA's site itself has recently been added to with a comprehensive on-line Trade Show Calendar and pages giving information about the forthcoming Showlight 97, a four-yearly colloquium on lighting which is being held in Ghent, Belgium next year. Coming soon to PLASA's pages is a new geographical index of PLASA members in the UK and worldwide.

Showlight 97, Ghent

The programme for this joint exhibition and conference, which takes place in Ghent from April 28th-30th next year, is now nearing completion. The event is to be held in recently restored 1840's Opera House and includes a programme of visits to complement the lecture programme taking in the nearby Voorhuit and Minard Theatres as well as local Belgian TV studios.

Although the lecture programme is still being finalised, much of it is now in place and will include keynote presentations from West End lighting director Rick Fisher, director of photography Mike Southen, lighting director Jim Tetlow and Belgian lighting designer Jaak Van De Velde.

For further details on how to register for Showlight, contact Ruth Rossington at PLASA Publishing on (01323) 642639.

Did You Know . . . ?

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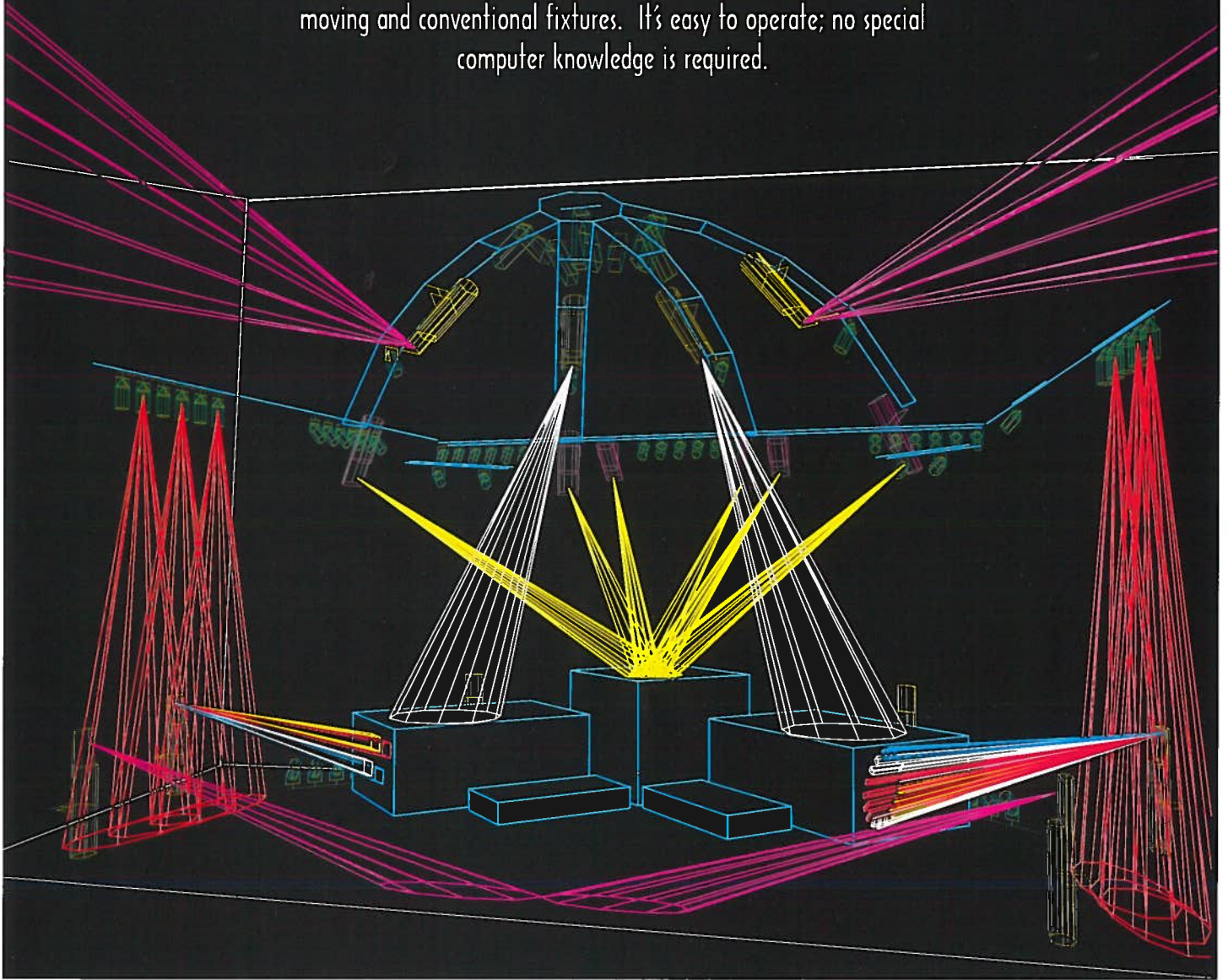
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LIVE FROM L.A.

Mark Cunningham joined the largest AES Convention to date to identify the current trends in the audio arena

It was estimated during the final day of the 101st AES convention, held in a notoriously sinister area of downtown L.A., that 18,000 visitors attended the four-day event to drop by on a total of 363 exhibitors. This apparently constituted the biggest AES to date, although it did 'feel' a little smaller and lower key than the event last October.

Multi-channel music for both recorded and live sound applications was a subject which often raised its head in seminars and demonstrations, notably by IAMM, while the manufacturers continued to add 'affordable' options to their product lines. A virtual war is now in progress between those offering UHF wireless microphone systems and increasingly more compact consoles and PA stacks, for example. It is said that competition is more fierce in the USA than in any other world market, and this was evident at the show where several manufacturers pulled no punches when given the chance to slate the opposition.

One of the most talked-about products of 1997 will certainly be **Yamaha's** follow-up to the successful O2R digital recording console, the smaller and more affordable O3D, which is more useful for the live sound market owing to the output programmability of level, EQ, dynamics and effects. The O3D provides 26 inputs, four busses, a stereo buss output, 16 direct outputs, six aux sends, and two internal effect processors. Input features include four-band parametric EQ, buss assignment routing, and a limiter/compressor/gate on every channel. Of the 26 inputs, 18 are analogue with 20-bit AD/DA converters, and eight mic pre-amps with phantom power provided.

Where amplification was concerned, **QSC** had the most impact, largely thanks to the unveiling of the Powerlight 8.0. It provides 4000W per channel at 2 ohms (3000W p.c. at 4 ohms and 1800W p.c. at 8 ohms) and will possibly be the largest professional power amplifier on the market for some time. Other additions to the popular Powerlight lightweight amplification range include the Powerlight 1.0HV, designed especially for high frequency drivers and studio monitor applications.

Apogee's main focus was its new DA Series digitally controlled amps, each of which features a front panel display giving a read out of critical information, care of an on-board computer. These amps can be easily networked with Apogee's new Windows-based AmpNet



software. Also demonstrated was the Apogee D1 digital loudspeaker controller which contains information for all Apogee speakers and has the capacity for data on other brands.

Probably the biggest news in loudspeaker development came from **JBL**, which debuted its HLA Horn-Loaded Array Series. A host of new features and materials for this product add up to a radical departure in large touring sound system design which centres around a new motor structure for the drivers and a unique speaker enclosure frame. The new DCD (Dual Coil Driver), which features neodymium magnets, weighs only 7lbs but has 3dB more output than previous components. It is housed within JBL's new patent-pending SpaceFrame which utilises the same lightweight and sturdy metal used in the construction of racing cars.

An enhanced version of the Broadway assignable modular theatre console was introduced by **Soundcraft**, which now features advanced update and offset management algorithms for the automation system, as well as updated control surface hardware on the input and master surfaces. Modular fader trays, improved encoder displays and new switch types are also new. Soundcraft's K2 console, which is available in 24-, 32- and 40-channel versions was also on stand for its USA debut.

During the show I witnessed a top-secret presentation of a new Soundcraft live sound mixing console. Taking many characteristics from the Europa, this 40-channel desk with full MIDI control features is intended to retrieve a portion of the market share taken away from Soundcraft by the Yamaha PM3500 and it is destined to become Soundcraft's flagship live board. Available in 14- and 16-input models, and shown alongside the Folio SX, was the F1 - a new compact mini mixer from Spirit.

Also from **Spirit** were the ultra small mixers in its Folio Notepad line. The Notepad is a portable mixing console with four mic inputs and two stereo inputs. The Powerpad is a Notepad with an integral 50W power amp, and the new Portapad, which is ideal for location work, DJs and post-production applications, comes with a battery pack.

The range from **Crest Audio** included the Century LMx monitor console. This desk configures any or all of its 22 output busses for either mono or stereo pair operation at the touch of global level/pan buttons on the output modules. In-ear monitoring is addressed by the extended headroom, low noise and an automatic blending of room ambience.

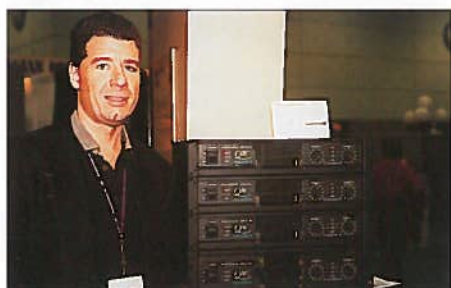
Samson Audio displayed its complete line-up of products, including the Behringer range which is handled independently in the UK and Europe. The Behringer MX 3282 is an eight-buss mixer that follows on from the Eurodesk MX8000. This new 32-channel board operates effectively for both live and studio applications and includes many of the features found in the MX8000.

Previously with Soundcraft, Mike Mann is now extolling the virtues of **Cadac's** latest creation, the F-Type Console, which was first seen at AES in Copenhagen last spring.

Four new mixing consoles for live and studio applications have been added to the Topaz range from **Soundtracs**. The rack-mountable Topaz 12-4 features three-band EQ, two aux sends, four mono mic/line inputs, and an additional two stereo FX returns to form 16 inputs. The four-buss Topaz 14-4's two stereo inputs and two stereo effects returns make it equally at home in live sound, recording and fixed installations, while the 24-4 provides all the 14-4, with the addition of 10 more low distortion mic pre-amps. The Topaz Maxi 8 is the live sound 'sister' console to the Project 8 recording console. It is a FOH desk which can easily be reconfigured as a stage monitor and matrix mixer, and features long-throw faders within an automation-ready design.

The latest Omnidrive product from **BSS** is the FDS-355 Compact, which is a development of the Omnidrive platform for more configurable systems. Whereas the regular model is stereo four-way, the compact version is three input/five output and multi-configurable.

It can be run stereo two-way with a sub and the third input can be used for a dedicated



QSC's Barry Ferrell with the Powerlight range.



Shirley Beyer and beyerdynamic colleagues.



Jason Frenchman and Kris Gustafson of Crest.



Jo Wolfe of Carver with the PX amp range.

separate sub, while two units run a five-way system. Instead of having just a mono sub, one can derive a sub feed from the desk.

Rolls manufactures a line of mixers, equalisers, headphone amps and accessories, including the new SX21 two-way crossover, designed for small sound reinforcement applications. A mini unit, measuring just 4" x 4" x 1.5", it has a 24dB/octave roll-off rate and a variable crossover point. German engineering firm **Lemtech** has developed a digital AES/EBU I/O upgrade for Lexicon's 480L digital effects system, the pro audio world's leading reverberation/effects processor. Installation of the upgrade is available from Lexicon to all current 480L units.

A compelling new product named the **Distressor** saw visitors grouped around the **Empirical Labs Inc.** stand. This classic knee analogue compressor incorporates warm second and third harmonic distortion into the compressor circuitry. Each of the eight unique curves has its own personality and release shape, from the 1:1 ratio mode that simply warms a signal with low-order harmonics, to the highest of all compression ratios, 'Nuke', which is beyond 100:1. Only in America!

The **Russian Dragon** is one of those products that screams out for attention, but quietly. It is an unusual device with two audio inputs for measuring timing accuracy among drummers and MIDI systems, and assisting the synchronisation of two time-critical signals in studio applications. But it also offers enormous benefits in live sound reinforcement for setting up delay systems.

Ted Fletcher's **JoeMeek** line of outboard processors have captured the collective imagination of live and studio engineers contributing to one of the industry's biggest success stories of recent years. His latest innovation is the two-channel VC4 Enhancer with balanced inputs and outputs and there is also a new version of the popular Studio Channel, the result of many helpful comments from users.

U2 are to follow in the footsteps of The Who and The Eagles on their forthcoming world tour when they use **Demeter's** Tube Direct DI box which has XLR outputs and an integral 12AX7 vacuum tube. Robert Williams commented:



The two Daves, Hayden and Neal, obviously pleased with the BSS Omnidrive Compact.



Lee Basham and Phil Hildrow of C Audio.

"Lots of touring bands use these because of the rugged construction and great sound they can achieve. Its -10dB out, so you go in to the box and out to the board via one output and to the amplifier with the other, then blend the DI and miked sound together. There is a 15dB boost when you come out of the XLR."

The C480B from **AKG** is a new 48 volt only ULS pre-amp for AKG's modular ULS capsules. This system boasts a lower self-noise rating and a higher SPL capacity due to a transformerless electronic circuit. AKG also introduced the CK69 dual-length shotgun capsule which operates in conjunction with the 480B. The dual length principle allows the user to break it down from a long shotgun capsule to a short model, and therefore take care of two different applications with one product. Also new is the Emotion entry-level microphone series which features the D770 cardioid dynamic mic and the super cardioid D880 and D880S.

Earthworks launched its new TC55K measuring microphone which is accurate within 1dB from 9Hz to 40kHz and +1/-3dB to 55kHz. President and chief engineer Eric Blackmer claimed that this new mic has the cleanest impulse response of any microphone.

The new **Audio Technica** AT-A540 boundary mic, known as the Quad mic, has four individual cardioid elements in the housing which all operate independently of each other. Aimed at conferencing, it has been designed to work with the AT-MX 351 automatic Smart Mixer, which switches the mic on as soon as a signal is detected. Still with the conferencing market, AT has a new line of mics designed for installations based on its Unipoint range.

Early on the first morning, **beyerdynamic** gave a presentation of several new products including the MCD-100 digital condenser microphone - the result of a collaboration with console manufacturer StageTec. The MCD-100 sees the perfect match of a true condenser transducer with a 22-bit resolution A/D convertor. It was claimed at the presentation that this was the world's first digital microphone. Funny, I thought it had been done before. Must have been my imagination.

Since the launch of the new 1081 and 1083 wireless microphone systems at PLASA, **Sennheiser** has sold 25 systems in the UK,



Mike Bartlett and Martin Reid of Turbosound pushed the HiLight system.



Chrys Lindop and Don Holloway of Garwood.

claimed Paul Whiting. Both systems offer 16 switchable UHF channels which are available in three frequency groups for up to 24 channels.

Back with **Samson**, the ongoing Q-MIC Series now includes two new wireless headset mics. The QV is for vocal applications while the water-resistant QE is for exercise and fitness instructors - a lucrative market in the USA. Samson's Series Six is a computer-controlled UHF synthesised wireless system which is already legal for the UK and will be available here within six months.

Big launches into the in-ear monitoring market are expected in the next 12 months from Sennheiser, Samson and Shure (which launched its new frequency-agile UHF wireless mic system). The industry leader in this area, **Garwood** continued to attract many visitors with its flagship UHF wireless Radio Station IDS system, and their unique approach to international frequency management.

SCV Electronics, from North London, unveiled their SCV 424 four-channel active mic splitter for small installations. Each output is transformer balanced as standard and its transformer distortion cancellation system reduces distortion to a negligible level. Equipped with an ultra low noise, electronically balanced input with optional transformer balancing, the 424 has an internal power supply and adds up to a truly cost-effective prospect.

Dan Dugan Sound Design gave priority to its new ProTech 2000 automatic mixer for installed sound. Meanwhile, Mr Dugan himself was vocal about his Model D-1 automatic mixing controller which plugs into the insert points on a mixing console to transform it into an automatic mixer.

Joe Rimstidt of **Meyer Sound** took me through his company's latest loudspeaker products in the form of the Q Series. The CQ1 is a front-loaded 15" cabinet with a 4" diaphragm and 2" throat compression driver. The unique feature is the new horn design which builds its angle on both axes instead of just one. The CQ1 gives 80 x 40 coverage, while the CQ2 is a 50 x 40 cabinet. They are self-powered, using the same amplifier package as all Meyer's other self-powered products."

The PSW-2 is a front-loaded, flyable dual 15" in the same size enclosure as the tried and



Martin Audio's Bill Webb and Jack Alexander of TGI with the ICT Series.

tested MSL-4. Meyer's SIM system was also on show-alongside new remote monitoring software which provides a graphical representation to help set up monitor systems.

In addition to the HiLight range of club loudspeakers shown for the first time at PLASA, **Turbosound** debuted new boxes in the Impact series, showing the prototype of the Impact 50 with a matching sub-bass.

EAW introduced the KF860 and 861 Virtual Line Array modules which both incorporate two 15" low frequency cone drivers, two 10" low-mid cones and two high frequency compression drivers. Also debuted was the UB72 loudspeaker, but arguably the biggest news from EAW was its launch of the KF855 Stadium Array System. Similar in appearance to the KF850, it features a dual high frequency section.

Community displayed prototypes of a new touring system which is currently being Beta tested on the road with a 'name' band. The system comprises a mid/high three-way box using the M4 mid range, the EM282 mid/high and VHF 100 driver for the extended high end, while the bass enclosure has 3 x 15" drivers in a horn-loaded cabinet. A new loudspeaker series from Community entitled Solution was also on show. The SLS-918 full range cabinet is available with handles for touring and A/V applications, or without handles for installation. The SLS-960 is a full range three-way system which can be used either passively or bi-amplified.

Hafler Professional announced its new P4000 DIABLO (Dynamically Invariant A-B Linear Operation) amplifier. This is a 200W per channel convection-cooled amp which features patented transnova circuitry and DIABLO transconductance driver stage to combine the linearity of Class A operation with the current headroom Class B. Hafler plan to launch DIABLO in the UK in the new year.

On **t.c. electronic's** stand was the new TubeTech PA240A power amplifier - a Class A stereo unit delivering 40W p.c. into 8 or 4 ohms. t.c.'s Wayne LaFarr commented: "The perceived output level of this amplifier is considerably more than its power rating implies."

Receiving its USA launch was **C Audio's** new generation of SRX amplifiers which consolidates the top rated SR and XR lines into three 3U rack-mountable models with continuous 2 ohm capability: the SRX-3601, 3701 and 3801. They incorporate AMPSAP - an Advanced Multitasking Primary Signal Access Port - which permits access to all the signals in the amplifier that may require manipulation or monitoring.

Mark IV Audio were displaying fine wares by **Altec Lansing, Electro-Voice, University Sound, Vega, Midas, DDA** and **Klark Teknik**. Five loudspeakers form the newly revamped DeltaMax line from Electro-Voice which have improved vocal clarity, increased output and reduced weight, as well as boasting new driver components, upgraded electronic crossovers and new cabinet configurations. Altec Lansing has now expanded its DTS Series by adding five loudspeaker systems for small to medium size installations. These models are: the DTS-94 and DTS-99 under-balcony systems, the DTS-200 portable/installation system, and the DTS-941 and DTS-640 three-way systems.

Steve Teipe of **Renkus-Heinz** was busy spotlighting the Trap Series of loudspeakers which is based on his company's True Array principle. He said: "With a True Array cabinet you get no uneven spots in the cluster and we have a whole series which works on this design, namely, the Micro Trap, one of the smallest arrayable speakers in the world, the Trap Junior and the Trap 40, and the Trap Sub and Mid/High."

Visitors to the **Martin Audio** demonstration room were drawn to the recently introduced ICT 500 and the Wavefront 8C compact system for large scale theatre and touring, and WSX folded horn sub-woofer ground stack. Martin's Bill Webb said: "I think people have been drawn to the characteristic transparent sound of the Wavefront 8C, and every time people come in and listen, they go straight for it which is very gratifying."

The **Crystal** arrayable loudspeakers Bag End come complete with ATM Fly-Ware. The Crystal provides 55 dispersion, and two working together horizontally will give a good 90 with a very smooth polar response. It works at a crossover of around 80-90Hz which is the point at which the 4 x 18" Quartz sub-woofer has a natural roll-off.

Previewed at NAM was the new PX amplification series from **Carver**. These are entry level amplifiers with thermostatically controlled fan cooling, operating at 4 ohms, the 1450 model provides 725W per channel, the 850 gives 425W per channel and the 450 gives 225W per channel.

On display from **TOA**, their new series of foreground and background music systems are designed to handle demanding styles of music in fixed installation modes. The F160 has a 5 1/4" driver with a 1" dome tweeter; the F240 has a 6.5" woofer in a larger box for improved bass response.

Three AES Conventions are scheduled for 1997. The 102nd will be held in Munich on March 22nd-25th, the eighth Regional Convention will be in Tokyo on June 25th-27th and the 103rd Convention is to take place in New York at the Jacob Javits Centre on September 26-29th.



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ON TOUR

by STEVE MOLES

AND PRODUCTION NEWS



First class sound, but limited lighting for The Beautiful South at Leeds Town & Country Club.

Beautiful South

Leeds Town & Country

LD: Simon Sidi

SD: Pablo Knight

If your idea of a good night out is to hang around in a smoggy room and watch other people drink booze, chat, and smoke fags then you could always go to the pub. Now, however, there's an alternative: Pay £30 to a scalper for a ticket and go and watch the Beautiful South. They have, of late, been slated in the national press for "not delivering a show" and similar jibes at their lackadaisical attitude to performance. Having just seen them at the Leeds Town and Country club, it's easy to see where these accusations come from, especially if from a typical 'first three songs then off to the bar' type of music journalist. There are, however, some aspects in their defence. They make no bones about their preference for playing club-type venues, (though they are easily of arena stature - a tour of the UK's big six is already booked next spring) and in this environment the boozy, casual attitude is not out of place, if a little unexpected. What matters, of course, is can they deliver?

LIGHTING

The design for this tour is by Simon Sidi, whose name has been synonymous with their's for a few years now. Unfortunately, Sidi is in the US with Tori Amos and from that distance this system is decidedly lacking, showing obvious flaws due to design by phone line and the lack of opportunity to tweak obvious shortcomings during rehearsals. I may be wrong. Sidi has understudied the Prince of Darkness himself, Jonathan Smeeton, and is not afraid of a few shadows, but this is a big 10-piece



band, with three vocalists on the front line. A single row of 24 Pars and three Icons on the front truss doesn't really make it. The whole system comes from LSD and comprises 12 Icons, 12 Washlights, 12 four-lamp Moles with Colormags and the previously mentioned four bars of six Pars (all incidentally gelled in Congo Blue, so no help there).

Tom Nulty is running the show on an Icon desk, naturally. He's just completed a six month stint suffering the rigours and pleasures of lighting David Bowie and thus finds the Beautiful South quite a contrast: "We had just two 12 hour sessions of rehearsals," he told me. Some might consider this a luxury, but after the first session he found that five of the dozen songs he'd just programmed had been cut and seven new ones inserted. It's a 100 minute set with 27 songs and fortunately, the largely balladic idiom of the music is punctuated by a lively brass section which gives Nulty plenty of dynamics to hang his hat on. His problem, as stated earlier, is getting light on the three vocalists. He does have followspots and uses them, but the stage front is so dark he wisely keeps the spots small and soft-edged to stop them completely overpowering everything else. The general darkness is exacerbated by a white full-cloth backdrop, which only accentuates the contrast. Again, Nulty is sparing in its use to lessen

this effect. The band shamble around the stage neither requiring nor demanding to be lit: "There's no input from the band whatsoever," said Nulty, in reference to how they'd like to be presented - and so he's left to work the spaces and cover the solos and vocals. Obviously, the time he's spent with Bowie has taught him to apply himself to the task, working the cracks like a craftsman restoring an old house. The lighting look of the night is his mirror ball cue during the old classic *Everybody's Talking at Me* - not to be missed.

SOUND

Pablo Knight has been mixing the band for over three years, as well as finding time to do 808 State and a new band from Plymouth called Equation, whom he rates for the future. The PA system comes from Concert Sound - their regular EAW KF850-based system: "A nice system," Knight noted, "especially for when we play the arenas, but some of the venues on this tour, such as Warrington, do create problems - as soon as the monitor system is on there's nothing I can do."

This gives a hint to his biggest problem - the 18 wedges plus side fills of the monitor system (courtesy of Chris Trimby and his XL3) pull a steady 45 amps, while the PA just tickles along on seven amps per side. The T&C is, thankfully, one of the more acoustically accommodating venues on this tour and Knight had the opportunity to demonstrate his craft. He had eight KF850s per side (four in the air, four stacked) with eight SBs beneath and on the floor, plus four BH852s filling the gaps and, crucially, the headroom he needed to use them. The XL4 has the horns and vocal channels closest each side to the sub masters and it's here he does most of his work. Vocals especially are the signature of the band - their harmonies on record being particularly sweet and distinctive. He's using the newer Beta 58a for the vocals, a microphone he finds a big improvement from the standard Beta: "It's a lot nicer, especially smooth around 2.5k," and he consistently drew out their better qualities.

There were odd occasions when the vocals were muffled, but this was more down to singing technique than any lacking in Knight's prowess. Quite simply, they were mumbled, but thankfully this only spoils a couple of numbers and, in fact, despite dire warnings from many crew members that slurring and forgotten lines were the norm, the songs were delivered with clarity and precision. The opening number *Don't Marry Her, Fuck Me*, from the dulcet voice of Jacqueline Abbot set the tone - in essence a collection of bright, poppy songs and earthy lyrics, up and down tempo ballads that generally never sounded less than sweet. In answer to the question, can they deliver? the response is a qualified 'maybe'. The music is too mellow to get really excited about; they've been accused of producing the perfect in-car cassette, something they hotly deny. But the sound was first class and the lighting only limited by its short-sighted design. How they pull it off in arenas is another matter. In the T&C, I was pleasantly surprised and came away rating the group more highly than previously.

Doncaster Dome

LD: Andy Watson

SD: Rob Isherwood

Judging by the huge stream of traffic into Doncaster Dome this triple header (Cast, supported by the Long Pigs and Mundy) was a popular package - either that or they were giving away deep fried Mars bars at the Superstore opposite. Both Cast and the 'Pigs have had strong chart success this year and Mundy are starting to warrant press attention. All the bands are in the Indie Britpop deluge and whatever their history, are relative new boys on the block of national prominence. This was clearly evidenced by an evenly mixed-sex and markedly youthful audience. Boys with soft downy sideboards and law-breaking lagers in their hands, girls uniformly clad in jeans, tank-tops and trainer bras. With the venue's demountable seating system safely stowed away, and the recent addition of four extra fire exits, this was an increased capacity Dome - 3,200 tightly-packed pheromone generators.

LIGHTING

Andy Watson, who's been out with Radiohead for what seems an eternity, was both Cast LD and tour production manager for this short spree. Originally brought in just for the production role, he took over lighting when the band's regular designer plumped for Dodgy (a decision forced when he found his stable of two acts touring simultaneously). Watson is first and foremost an LD and by his own admission this is the work he prefers, so the last-minute change was not a cheap compromise by the band's management.

His design is remarkably lavish for a six-date tour. A four-truss system from LSD comprising three of lights whilst the fourth supports a set of two backdrops on tab-tracks, plus a Kabuki. The three lighting trusses are a simple forced perspective arrangement; 40ft wide with cranked down ends, 15 degrees for the front, 30 mid, and 45 at the rear. The trusses are all black bordered and then overlaid with some purpose-made drapes from Dave Perry.

On the trusses, white filled cloth teasers, just two-thirds the depth of the black borders beneath them, exaggerate the truss shape and perspective effect. Legs are only dressed in for Cast; again they are filled cloth on an Austrian-style mechanism. With no rehearsals and just a production day at the first venue, this has been one of those tours where Watson has been programming every day right up to doors.

Using an Avo Diamond II, he's running 18 Cyberlights, 26 VL5s plus Molemags, Par 36 ACLs, a scattering of ellipsoidals and there's even the odd Par 64 in there. The look of the show is quite distinctive - the Molemags are bulbed with ACLs, there's a sheet of eighth diffusion between lamp and Molemag making for a tight but fuzzy block beam. The P36 ACL is a favourite of Watson's: "It's just a very different beam from what people are used to seeing," he notes. "It's tighter and more delicate." The four lamp strings of these on stage make sharp contrast with chunky beams from the Cyberlights. The addition of the white Austrian legs creates a very distinct difference between Cast's show and the other two bands. Watson



Cast: a bright young band, but even Metallica aren't this loud.

uses the legs as both mini vertical cycs to frame the stage, and as gobo screens.

The more striking difference between his show and those of the two other LDs is in the measured working of the music beat - there's an immediate impact from him not bumping a change on every single beat. One effect worth noting was a very slow timed sweep out into the audience by the Cybers, the incremental creep lasted the duration of the song *Four Walls* (several minutes) and was very controlled and smooth, underlining the finesse possible from both the desk and lamp.

SOUND

This tour is the first time SSE's new Nexo Alpha system has been heard on an indoor jaunt around the UK. Although a relatively small enclosure, certainly compared to an ElectroVoice MT system - SSE's stalwart of the last few years - there's a lot of it on this tour. For the Dome there were 12 subs per side, six on the floor and six on the wings, with 18 cabinets (an even mix of hi-mid and mid-low) stacked and flown above. Pete Russell, who does front-of-house for Thunder, was babysitting the three bands' engineers and took sole responsibility for rigging and setting up the PA.

Since the system purchase back in early summer, a number of adjustments have been made subsequent to a series of live show trials. Most noticeable is the addition of the mid-low box "to fill a very specific hole around 60-200Hz," said Russell, and also the substitution of Nexo's own control for a BSS Omnidrive was necessitated by the additional box. Conditions were far from ideal to assess the PA's performance - the Dome has a low ceiling and the balcony was closed. However, the new box seemed to be working and there was certainly no lack of warmth to the low end mids. The room is also very wide relative to depth, but if vertical dispersion is as even as the horizontal, then this is yet another highly directional system that can deliver if properly arrayed. One element that left no doubt was the delivery of power. By the time Rob Isherwood, Cast's sound engineer, reached for the faders of the XL4, we had already received the unrestrained mixing of two loud pop groups, but he was even louder.

He has worked with Cast for two years since the release of the band's first single, while monitor

man Nick Davis has been with them for three. Isherwood mixes them in a very naturalistic way: "I just like to take the sound right from source," he said. "I only use a single delay and a couple of reverbs. I rely on the band keeping things controlled on stage, using gates and compressors as little as possible."

He had used the Nexo system before, but only in festival situations over the summer. With guidance from Mick Hughes then, and from Pete Russell now, he was very appreciative of the committed support he's received from SSE. "They were chosen for this tour because they could handle the growth we expect for the band, as well as handling the festivals in the summer. Their engineers have been great, completely down to earth."

Isherwood uses a small quad system, two stacks of SSE's own BetaMax cabinets (more usually deployed for monitors and fill work), in a modest and understated way that worked well on the first number. However, once he got the bit between his teeth it was impossible to tell if he used it at all. This show rapidly became monumentally loud - far louder even than Metallica, who I visited just three days before, sustaining 120dB for lengthy periods. The volume was unrelenting and ultimately self-defeating, as the lyrical content became submerged beneath the screaming guitars. I left after 45 minutes, pondering whether this is how it should be for a 'just breaking' band? The answer is probably yes: this is their moment for raw excitement. There's plenty of time for them to join the CD set later.

A better exposition of the Nexo system's efficacy was given by Mundy. The eponymous vocalist has the voice of an angel and the nicely ensemble mix left no doubts that they could all play and that the PA could deliver the stage sound with force, clarity and definition. So polished and self assured was Mundy's performance that were I a promoter I'd put money on Mundy out-lasting Cast.

All things considered, a good night out. I only saw one teenager asleep in a pool of vom', everyone else was too busy lapping up an excellent bit of billing. With the Dome's increased capacity and the addition of proper dressing room facilities backstage earlier this year, this venue will be visited by an increasing number of tours.

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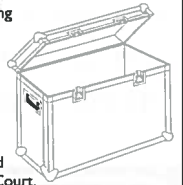
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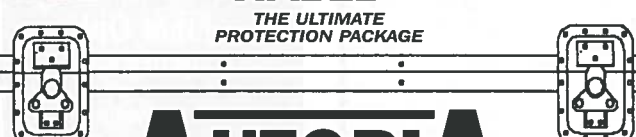
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John Offord talks to Jim Ryan, Strand Lighting's new managing director

On 28th September it was announced that Schroder Ventures, one of the largest private equity fund managers outside the USA, had purchased Strand Lighting from the Rank Organisation. Just under two months later, at the LDI convention in Orlando, Florida, I cornered Jim Ryan during his two-day reconnaissance mission.

Slim, fast, and sharp, Jim Ryan strikes you as a man who measures the use of his time very carefully; a man who is up at the bell and running. For 10 years or so he's been working with Schroder Ventures, in the main acquiring manufacturing companies and turning them round - successfully. And comes as a threesome, with Adrian Evans as manufacturing expert and now production director of Strand Lighting and Andrew Ricketts as the money man and Strand's finance director.

So how will Ryan and his team deal with Strand Lighting, that endearing industry institution that some love to hate, but most, I would venture to suggest, love to love, if at times in a somewhat secretive and obtuse way? So much that is good for the industry has come out of Strand across the years that I'm sure, if they are honest, most folk want to see it succeed and stay as a fit operation that is part of the competitive fabric essential to health and continued growth of the entertainment technology sector.

I asked Jim Ryan what drew him to Strand. "First of all we look for companies with a strong brand name, and Strand certainly has that. Then we look for companies with a significant market share, and Strand has that. We are number one in a lot of countries, and when we are not we are a pretty solid number two. Statistically, we are the world's number one, with over 25 per cent of the world market. We also look for the quality of the people, and we have been very impressed with the quality of people we've met at Strand so far.

"We also look carefully at the negative aspects of a business, because the things I've just mentioned we can't fix. We can't give a company a 30, 40 or 50-year history, and we can't flood the company with good people. So, when a company scores high on these elements, we then look for the problems.

"And Strand has some problems underneath, but without wishing to appear arrogant, we think we can fix these. If we can improve market penetration and customer service and back this up with considerable investment in new products,

coupling this to the basic strength of Strand will provide for a very strong, viable and profitable company."

Steering the conversation to the subject of an industry that perceives itself as 'different', and with a personality embossed with a hefty dose of individualism, how would the perceived Schroder/Ryan corporate approach be preparing for the challenge?

"I'm not a corporate man," continued Jim Ryan. "I tried that, and it drove me crazy! I like working in the private sector, and we are all very hands-on. It is true we don't know the industry, but we will get to know it. What we can do is bring our knowledge of other industries to Strand, and work with Strand people to fix a problem.

"I've spend the last eight weeks just talking to customers; my two partners have spent the same period talking to people in the business and in the factories, to try and understand what the issues are. There is no simple fix-it. In industry today it is very competitive, and not just in the entertainment business. To remain competitive we have got to make the right decisions and you can't do that without proper research. What we are in at the moment is research mode. Before acquiring the company we spent three months understanding Strand and its position in the market place and after the first seven weeks I can honestly say we've had no surprises."

How much time had Jim Ryan allowed himself to produce a Strand success story? He is 50 this year, and told me he had always planned to retire at 55. "So I have certainly got five years!" he responded. "I think it depends what we do, however. The time will come when we need to look at acquisitions. If we can put into place the right acquisitions and create something really significant I would probably stay on beyond that, but at the moment we are working on a five-year time frame.

"We have obviously surveyed the market place and we have talked to about 60 customers worldwide about Strand's product offering and its relationship to its market. In terms of product



Jim Ryan pictured with Strand's 520 lighting control system at LDI.

there are gaps in the range, and there's no point denying it. The customers obviously know as well as we do what those gaps are, and we intend, and we have already announced the fact, to significantly increase expenditure on R&D, each year on-going for the next five years, to address those product gaps and by doing this to reposition ourselves in the various market areas. There are two ways of filling the gaps in the range: one is by acquisition, the other R&D. And both options are open to us."

There will be some changes to the Strand structure worldwide, as Jim Ryan explained: "We want to make the various businesses focused in each of their markets. For the past few years Strand has been going down what I would call a centralised management road. I'm not a centralist, and fundamentally disagree with centralisation. What we will be doing is decentralising and making each of the independent trading companies financially independent and responsible for their own sales, marketing and customer support. What the team at the centre will do is just provide strategic direction and cash for good ideas.

"This will see the creation of regional autonomous trading companies - very much in the way Asia has run so successfully and the way Phil O'Donnell has started to run the American operation. We have to simplify the organisation to enable Strand to respond to local needs. It is the only way to address customer service on a global basis."

With his direct and straightforward approach Jim Ryan exudes an early confidence in his team's ability to march Strand into more prosperous times. "Strand has been a sleeping giant, and it is my job to make it wake up," he concluded.

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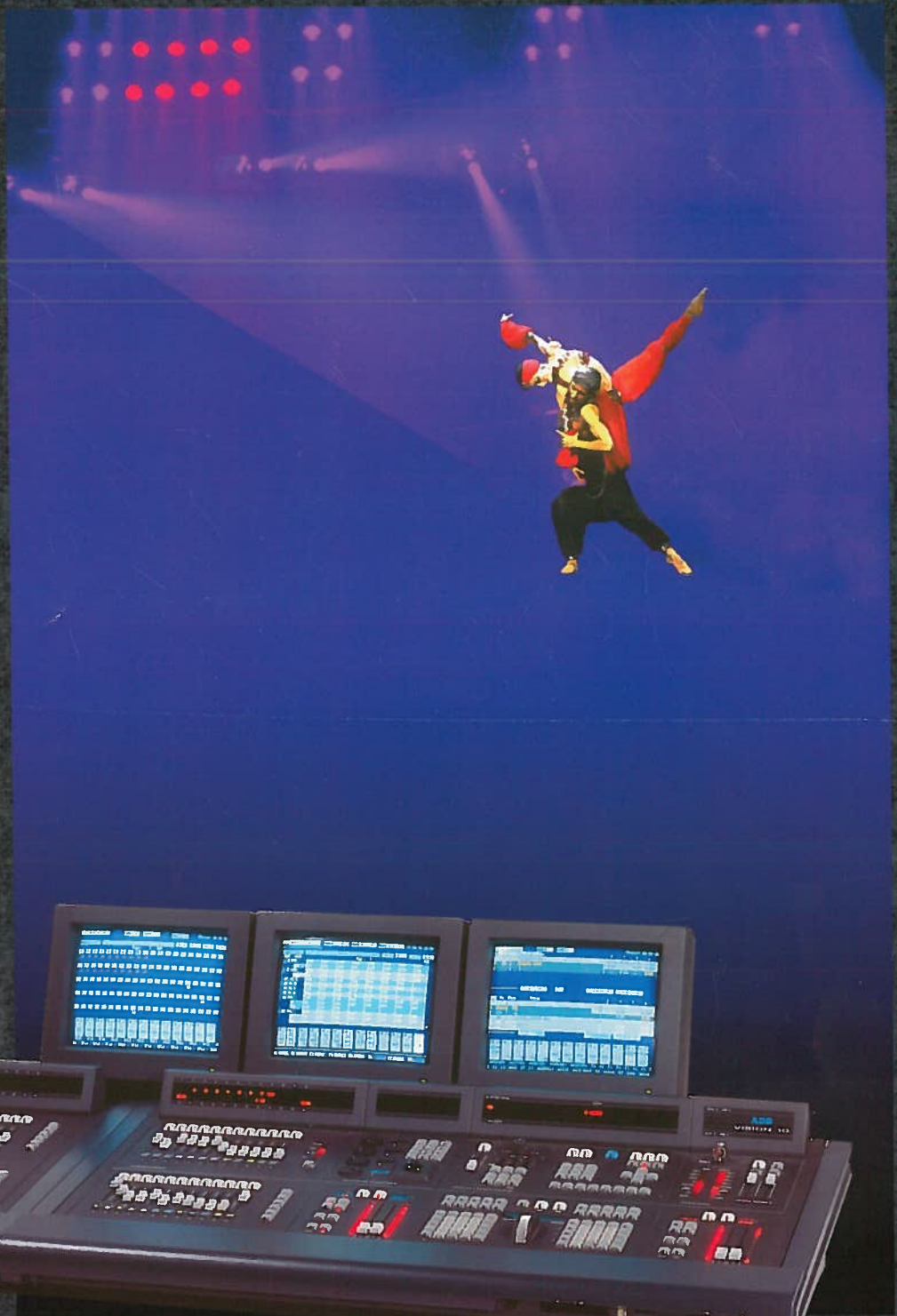
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