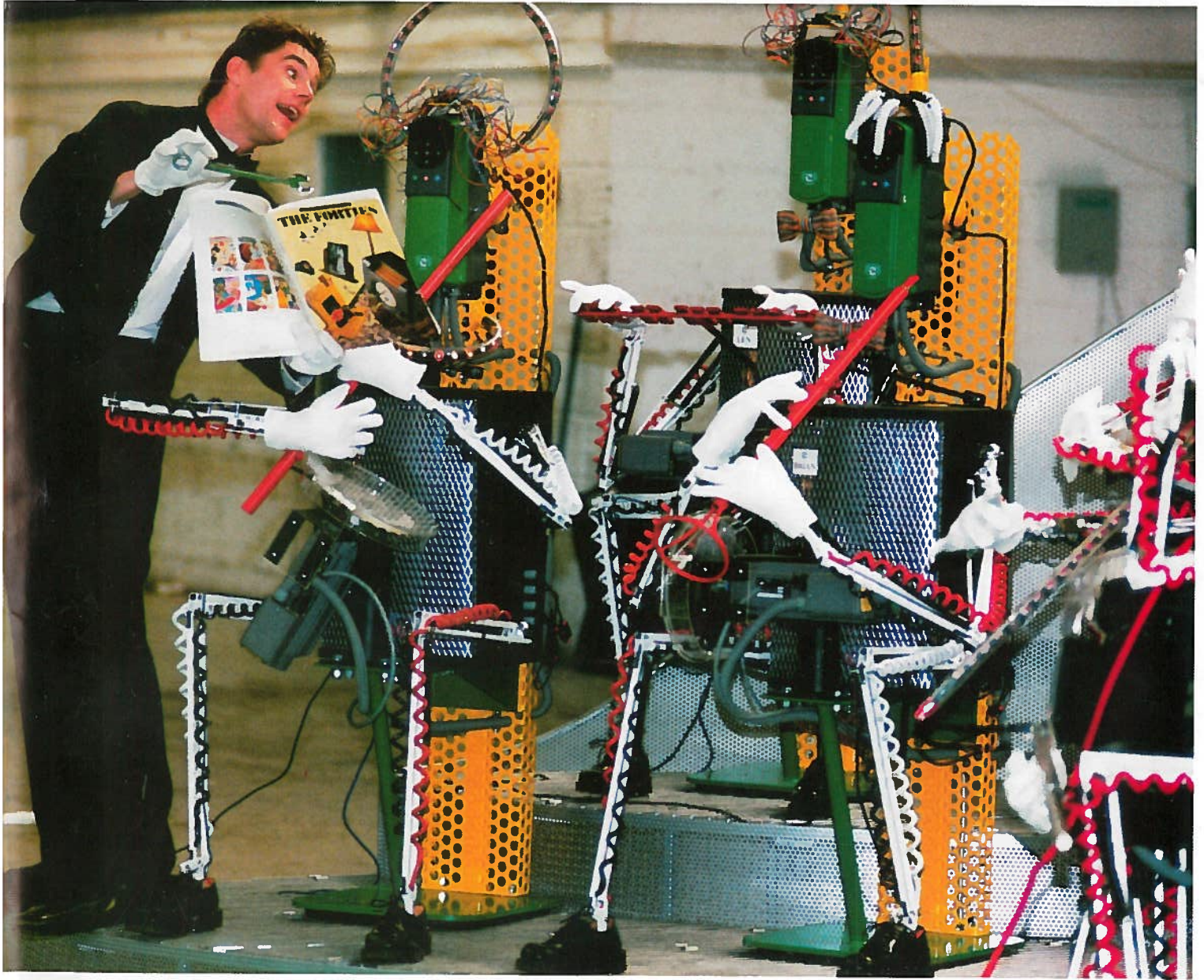


LIGHTING+SOUND

International



DINGLE FINGLE REHEARSES THE ELECTRONIC ORCHESTRA

- Tony Gottelier gets taken for a ride at the Port Aventura Theme Park in Barcelona
- Company profiles: DeSisti Lighting, Harkness Hall and Sennheiser
- Military manoeuvres for Burning Blue in London's West End
- Del Amitri's Twisted World
- A symphony of sound with the electronic orchestra
- VJ Day - a final salute

PLASA

SEPTEMBER 1995

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Well, why not just call by and get to know us? transtechnik on the PLASA, stand A 200.

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One which is modular to secure your investment for the future?
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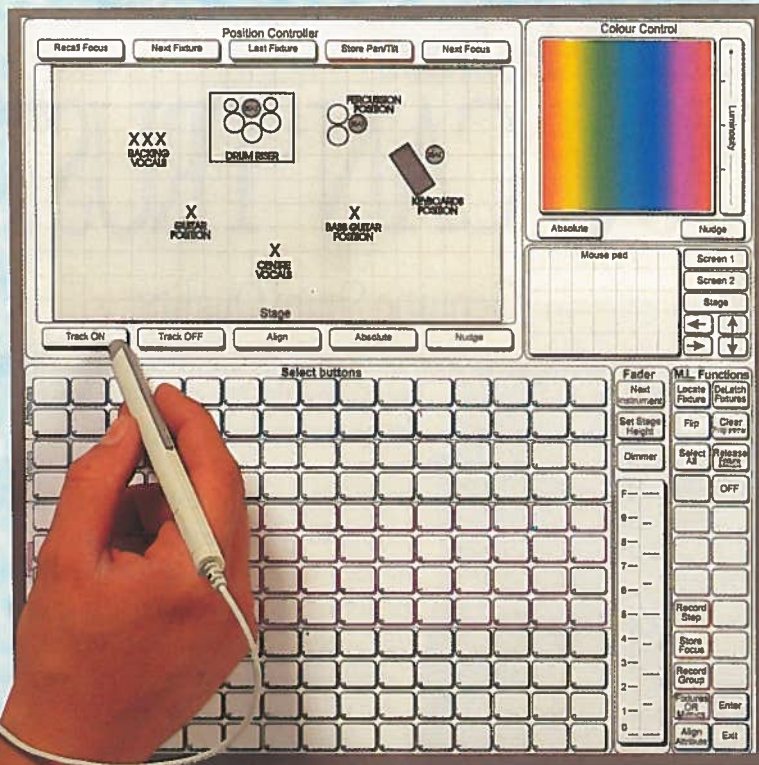
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AVOLITES 4D TRACK



- ⌚ ENABLES YOU TO MOVE ANY NUMBER OF LIGHTS AS ONE.
- ⌚ FULLY SCALED STAGE LAYOUT WITH ABSOLUTE POSITIONING.
- ⌚ LIGHTS CAN BE USED TO FOLLOW-SPOT FROM THE CONSOLE.
- ⌚ MEMORIES CAN BE QUICKLY ADJUSTED 'LIVE' WHEN PERFORMERS MOVE OFF THEIR TARGET POSITION.
- ⌚ PRECISE COLOUR MIXING CAN BE ACHIEVED IN SECONDS.
- ⌚ A COMPREHENSIVE COLOUR PALETTE CAN BE COMPILED IN MINUTES.
- ⌚ MAKES COLOUR MIXING OF INTELLIGENT FIXTURES AT LEAST 30 TIMES FASTER.
- ⌚ SAVES HOURS OF PROGRAMMING TIME.
- ⌚ ALLEVIATES FRUSTRATIONS OF BUTTON PUSHING AND KNOB TWIDDLING!

The truly revolutionary Avolites 4D Track introduces the fourth dimension - time - into the realisation process of the show. 4D Track provides a unique and unrivalled interface for controlling moving lights, creating an interactive stage plan, alleviating the need for button presses and enabling the lighting designer to map out the stage and focus positions as desired, saving time in the process.

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Now, when a performer moves off the target position, you use the 4D Track in 'nudge' mode to move the beams and pull the moving light memory back into focus on the artist.

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LIGHTING+ SOUND International

SEPTEMBER 1995

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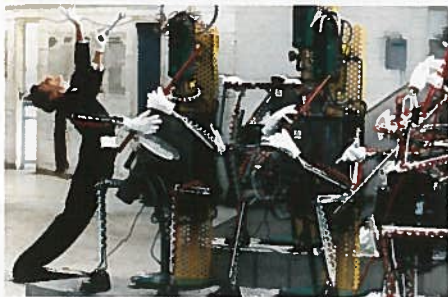
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The Internet: it doesn't need you anymore - you need it!

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

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LIGHTING+ SOUND International

published monthly by the Professional Lighting and Sound Association
© Copyright Professional Lighting and Sound Association ISSN 0268-7429

Editor: John Offord
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Telephone: (01323) 642639 **Fax:** (01323) 646905 **Internet:** <http://www.plasa.org.uk/plasa/> **E-mail:** info@plasa.org.uk

No part of this magazine may be reproduced without the permission of the Editor

The magazine is available on annual subscription

UK £45.00 Europe and rest of world £60.00 Airmail £85.00. Single copy price £3.50 plus postage

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

Lighting + Sound International is published monthly for \$90.00 per year by The Professional Lighting and Sound Association, 7 Highlight House, St Leonards Road, Eastbourne, East Sussex BN213UH. Second class postage paid at Rahway, N.J. Postmaster: Send USA address corrections to Lighting + Sound International, c/o Mercury Airfreight International Inc, 2323 Randolph



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Patented by U.S. Pat. Nos. 4,095,139; 4,392,187; 4,602,321; 4,688,161; 4,701,833; 4,709,311; 4,779,176; 4,800,474; 4,972,306; 4,980,886; 5,010,359; 5,031,078; 5,073,817; 5,186,536; 5,209,560; 5,278,742; 5,282,121; 5,307,295; 5,329,431; U.S. Design Patent No. D347,133
United Kingdom Design Reg. No. 2629499
2033108
German Utility Model Reg. No. G9312884.3
and G9314158.5
All other worldwide patents granted or pending.

Vari-Lite Files Suit against High End Systems

Dallas-based Vari-Lite Inc have initiated a patent infringement action against High End Systems of Austin, Texas. The suit has been filed in the Federal District Court in Dallas.

The Dallas company is seeking unspecified damages, as well as an injunction against the manufacture of High End's Status Cue system, including the Cyberlight and colour wash stage lighting fixtures. Vari-Lite maintains that these products violate numerous claims in multiple patents held by them.

Both companies manufacture automated computer-controlled lighting fixtures, but Vari-Lite assert that they pioneered the modern automated lighting market and have been manufacturing and leasing their products to theatrical, concert touring and corporate entertainment clients since 1981.

A press statement from High End Systems said that "Vari-Lite filed the suit without the usual courtesy of giving High End any notice." It went on to say that High End would not knowingly infringe a valid patent of any other party, and that its 'intellectual property' department is fully prepared to defend the company's position regarding any alleged infringement. "It is High End's position that both companies would benefit the lighting industry better by turning their resources and

energy towards advancing product development."

In a separate announcement, Vari-Lite stated that they have recently settled a patent action against Syncrolite Systems Inc of Dallas. In March this year, the United States District Court for the Northern District of Texas, Dallas Division, granted a Partial Summary Judgement for Vari-Lite Inc and against Syncrolite Systems Inc, found Vari-Lite's U.S. Patent No: 4,980,806 valid and found that Syncrolite had infringed that patent. Following the entry of that judgement, Vari-Lite and Syncrolite entered into a settlement agreement.

As part of this, Syncrolite has agreed to make certain changes in its Mini-Arc II automated light system. The remaining terms of the settlement are, by agreement, confidential.

Not Long to Go . . .

The PLASA '95 Light & Sound Show is providing the launch-pad for the world's best lighting, sound, theatrical, rigging, DJ-ing and leisure companies, products and activities. With less than a month to go before the Show opens, the situation couldn't be better. James Brooks-Ward, PLASA's show director, told L+SI: "This year PLASA is going to be bigger and better than ever before. The show size is up by 17% and we have international exhibitors signed up from every continent. The show covers a breadth of product areas and is highly applicable to anyone involved in the industry from club operators to live venue technicians, production companies and DJs."

We have highlighted just some of the many new products that will be launched at PLASA in our feature beginning on page 100. L+SI will also run a major review of the show in its October issue.

PLASA Light & Sound Show 95

For anything you need to know about the show, its exhibitors or last-minute registration, call organisers P&O Events in London, telephone 0171-370 8215.

We'll see you at the Show - Stand A254

Show Opening Times

Sunday 10th Sept: 10.00-18.00

Monday 11th Sept: 11.00-18.00

Tuesday 12th Sept: 11.00-18.00

Wednesday 13th Sept: 11.00-17.00

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Source Four changes the way you think about lighting. Delivering 1200 watt performance with a 575 watt lamp, Source Four offers phenomenal energy savings in a rugged, compact cast aluminium package.

Lighting Designers are insisting on Source Four because of its clean, white beam, its crisp pattern projection, precise shutter cuts and rotating barrel.

Source Four is available in six beam angles, with interchangeable lens tubes for fast, flexible set-ups.

Source Four's moulded glass dichroic reflector removes most of the heat from the beam, assuring longer life for shutters, gobos — and the people on stage. And *that's* cool.

- 50% less energy than 1200 watt lights
- 5°, 10°, 19°, 26°, 36°, 50° beam angles
- Interchangeable lens tubes
- Dichroic moulded glass reflector
- Cosine (flat) field beam
- Excellent imaging
- Crisp shutter cuts
- Barrel rotation for flexible focusing
- Lightweight and compact

HPL High Performance Compact Filament Lamp

Lamp Code	Volts	Initial Lumens	Color Temp. (°K)	Average Rated Life (Hours)
HPL 575/230V	230	14,800	3,250°	400
HPL 575/240V	240	14,800	3,250°	400
HPL 575/115V	115	16,520	3,250°	300
HPL 575/115X	115	12,360	3,050°	2,000
HPL 575/120V	120	16,460	3,250°	300



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Developed as a joint venture between ETC and Entertec, Inc

Shakespeare's Globe Returns to Southwark



The reconstruction of the Globe Theatre in London, close to the site of the original (which burned down in 1613), has been in the pipeline since the late Sam Wanamaker launched the Shakespeare Globe Trust in 1970. Now, 25 years later, the building is up and nearly ready to go.

The new Globe is as faithful to Shakespeare's original as possible, although the fact that there is very little known about it has been the cause of some controversy. Plans for the carpentry have been largely reconstructed from an old document pertaining to the Fortune Theatre, which was, at least, built by the same carpenter. The new Globe was first planned as a 24-sided structure, but when a portion of the original building's footings were unearthed, they revealed it had been 20-sided and the necessary design amendments were made.

Modern safety regulations have meant important differences to the original theatre: when the fire that destroyed the theatre in 1613 broke out during a performance, all 3,000 members of the audience were, fortunately, able to escape by two narrow doors. Today's Globe has four six feet wide exits. The timbers and thatch (it is the first thatched building to be constructed in the capital since the Great Fire of London in 1666) have been

specially treated with flame retardants, a drencher system has been installed, the lath-and-plaster walls have a fire resistant filling and the modern-day capacity has been restricted to half the number allowed in Shakespeare's day.

True to Elizabethan theatre, performances will take place in daylight, without scenery or stage lighting. Only curtains and drapes will be used. The stage, with its two marbled columns, thrusts half-way across the floor, bringing the action close to spectators. Those watching from the pit will be at eye-level with the performers' feet, while action in the balcony will be a whole storey's height above them. The timbers of the surrounding galleries will be painted to resemble stone and bright colours will adorn the interior.

It is intended that the Globe should operate as a working theatre with a varied output. While there has, wisely, been a deliberate reluctance to recreate the theatrical world of Shakespeare to the last detail, it is still hoped that the new Globe will satisfy both the average theatre-goer and the lover of Elizabethan drama alike. Hopefully, the lighting and sound industry won't mind in the least that it doesn't have a role to play in this particular theatre.

photo: Richard Kelina

M&M World Travels

M&M and Light Solutions, distributors for Rainbow, ETC and MA Lighting (amongst others) have had a hand in a number of worldwide projects all utilising equipment that the company represents. For the first time ever, M&M has supplied *white* Rainbow colour changers, through specifier Graham McLuskey of Treeble Lighting. The unusual order went to the Al Attas Hotel in Jeddah, along with a 48/8 way and a 24/6 way Lightcommander desk.

In Dublin's new production of *Riverdance*, a Scancammer, supplied by Neg Earth to control 16 Super Scan Zooms, is being triggered from the DMX In trigger of an Arri Imagine console. Scancammers were also used by Theatre Projects to control the SkyArts in the grounds of Buckingham Palace during the VJ Day celebrations (see news and feature, this issue).

Theatre Projects has purchased six 36° Source Fours for the new *Phantom of the Opera* tour. The ETC units, which are being used in conjunction with gobo rotators, were specified because of their cool running temperature which protected the gobo rotators from heat damage.

Meanwhile, Andy Phillips - the first LD to use Rainbow colour changers in the West End - has specified 15 Source Fours for use on PW Productions' version of Strinberg's *The Father*, which is touring Bromley, Richmond, Bath and Malvern, before starting at the West End's Comedy Theatre in mid-September. Four 50° Source Fours are also being used by David Hersey on *Burning Blue*, currently running at the Theatre Royal, Haymarket (see feature starting on page 72).

Company Moves

Leisuretec, distributors of both lighting and sound equipment, have moved to new headquarters in Leighton Buzzard, where they now have an extensive new warehouse facility and office complex. Contact them at Unit L3, Cherrycourt Way, Stanbridge Road, Leighton Buzzard, Bedfordshire LU7 8UH. Telephone (01525) 850085.

Also on the move this month are *Sound Electronics (Newcastle)*, suppliers and installers of sound and lighting, who have relocated to Coast Road, Newcastle NE6 5XB. Telephone 0191-265 2500.

Artistic Licence

Finally, an Elegant and Affordable Controller for all Colour Scrollers.

Programming is simplicity itself. Tell Scroll-Control the number of gels available, and if you wish, the name of each colour. Each Scroller can then be programmed by its frame number or colour name.

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Hand-held with rechargeable batteries
200 Colour Memories 10 Timed Sequences
Remote Go! Auto-Loop Patch Edit





SOURCE FOUR PAR



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...and Revolution

Another high performance energy efficient spotlight from ETC, the Source FourPAR does for wash lighting what Source Four did for hard-edged ellipsoidals.

Revolution.

No more bulky, expensive PAR lamps. Source FourPAR uses the same 575 watt HPL as Source Four with equal or better light output than 1000 watt PAR 64s. Want to change beam angle? Just snap in one of five low-cost lenses. They mount in a cool, rotatable ring – no more fumbling in the back of the can.

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And your mains requirement. And your feeder cables.

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Revolution.

Source FourPAR has a beautiful beam. White. Smooth.

Did you ever *look* at a PAR64 beam? Use Source

FourPAR at 230/240 volts, or in series pairs, with the

115 volt 300 hour or long life 2000 hour lamp.

ETC Source FourPar... revolutionary! Better order soon.



HPL High Performance Compact Filament Lamp

Lamp Code	Volts	Initial Lumens	Color Temp. (°K)	Average Rated Life (Hours)
HPL 575/230V	230	14,800	3,250°	400
HPL 575/240V	240	14,800	3,250°	400
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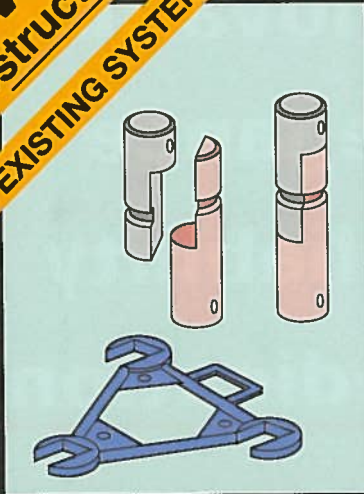
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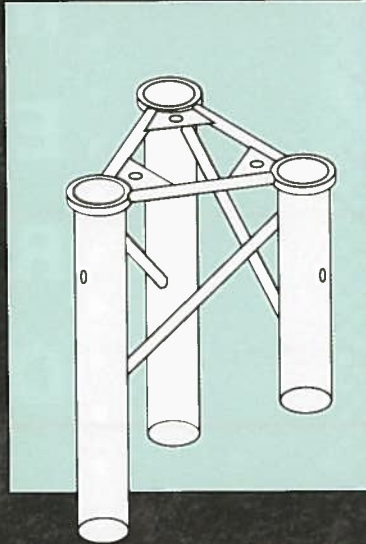


Developed as a joint venture between ETC and Entertec, Inc.

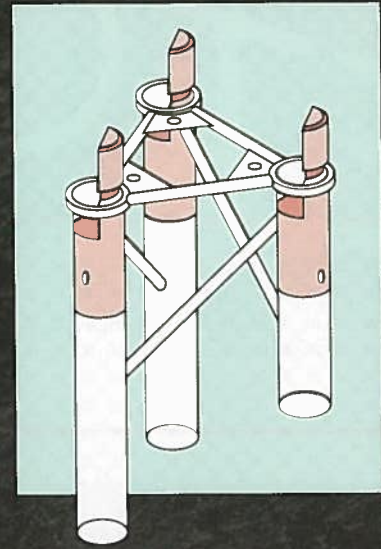
NEW
from *litestructures*
FITS ALL EXISTING SYSTEMS



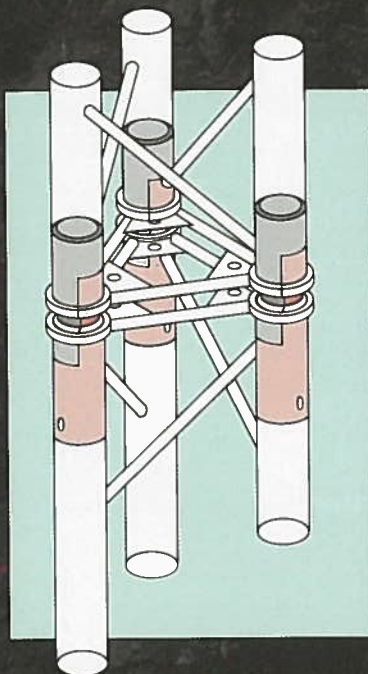
1) This all new patented system gives the fastest, strongest and most secure joint possible. It has no male or female components as both connector bosses are the same.



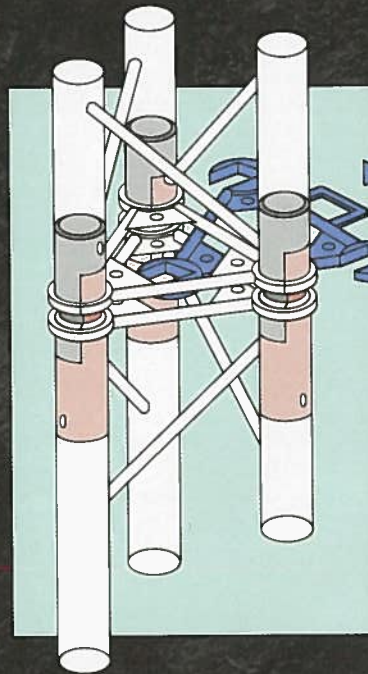
2) The system is fully retro-fit using existing bolt holes.



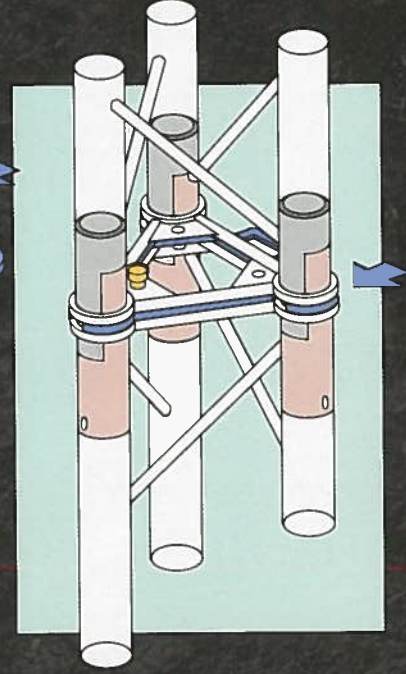
3) The universal connector bosses are fitted into the ends of the truss sections or corners.



4) The two truss sections are then easily connected.



5) The key is then engaged to remove any deflection.



6) For added security a safety pin is engaged in the hole in the casting.

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Industry People on the Move

Eastern Acoustic Works has appointed **Andrew Rutkin** to the position of applications engineer. He will be contributing to EAW's research and development efforts in the areas of active electronics, system hardware and loudspeaker systems for the next generation of motion picture technology. Before joining EAW, Rutkin was director of R&D and chief engineer of the touring division of Maryland Sound Industries.

Clay Paky's new commercial director is **Enrico Caironi**, who has considerable marketing experience having worked for many years for Siemens and Asea Brown Boveri. Enrico replaces **Pio Nahum**, who has moved on from Clay Paky.

Yamaha-Kemble Music (UK) Ltd has appointed **Richard Hodgson** as general manager of their professional music division. Hodgson takes over from **John Booth**, who has moved to Karman UK. As sales manager during Booth's five year stewardship of the division, Hodgson played a major role in the strengthening of the sales and marketing operation and its increasing profile in the various sectors of the audio industry.

With record sales figures and continued expansion, Batmink Ltd have appointed **Paul Lancaster**, formerly with Thorn EMI Electronics, to their sales team. Director David Churches told L+SI: "With a huge increase of business in the last six months, Paul will be helping to further develop our trade sales and provide customer support within the UK."

John Gorse has returned to Osram Ltd as the manager for OEM and Specification markets after spending four years in the light fittings division of parent company, Siemens.

The Playlight Group has appointed **Tony Dilley** as its northern area sales manager. Dilley will be responsible for sales of all group services including lighting, sound, installation and draperies, in addition to developing Playlight Audio's new contracting service. He joins the group after 11 years in sales with Strand Lighting, latterly as studio projects sales manager for Strand European Trading.

NJD have appointed **Barry Chamberlain** to the position of UK sales executive. With many years experience as a professional disc jockey and radio presenter, he joined NJD two years ago as a salesman at their Nottingham Light & Sound Centre branch.

As a result of achieving the highest test results at the NJD three day course on 'Lighting & Audio Technology & Product Applications' in January 1995, Chamberlain has been promoted to the position of UK sales executive with direct responsibility for all UK accounts. Also at NJD, **Andrew Dominic** has been appointed invoice and export documentation senior administrator. He has been with NJD since 1991, and will be a main customer contact for enquiries regarding order progress, export documentation and shipping details.

Roger Needham, known and respected as an independent designer and production manager, has joined The Creative Studio as a senior project manager. Needham, who brings extensive lighting and audio system design and staging experience to the current creative studio team, has previously worked with many leading conference and event production houses, and also has wide experience in the entertainment industry.

Sally Milne has been appointed marketing/PR executive at Martin Audio. She comes to the company with experience of the audio industry having worked in Denon's marketing department for several years, mainly on consumer products.

Milne will be taking over from **Sara Kendrick** who is leaving to start married life in the USA.

Zero 88 have announced the appointment of **Mark Powell** as their new service technician. He replaces **Keith James Harrison** who has resumed his freelance career. Powell has been with Zero 88 for six years, previously as a test technician, and so is well acquainted with the servicing requirements and techniques of their control equipment.

Franz-Josef Wewer has been appointed as authorised signatory with Lightpower Showtechnik. Apart from his involvement with financial and staff matters, Wewer has gained a strong reputation for his entrepreneurial talent in decision-making. Following the recent promotion, he now joins general managers **Jurgen Proppe** and **Ralph-Jorg Wezorke**.

RCF (UK) have appointed **Andy Austin-Brown** as sales manager for their Pro Audio division. He has an extensive background in the pro-audio industry. In 1994 he joined Martin Professional UK, developing new sales opportunities, as well as servicing existing clients.

Tim Pollard has been appointed European sales manager at Celestion International. Pollard, who worked previously with Yamaha UK and Carlsbro Retail, takes responsibility for sales throughout Europe and the UK.

Turbosound's R&D department has recruited **Dave Coles** to the Sussex-based team. Coles joins from Blue Box PA, one of Turbosound's regular customers.

Dynaudio Acoustics has appointed **Derek West** as sales and marketing manager with responsibility for all aspects of the company's UK and overseas sales and marketing. West joins the company from Tannoy, where he was employed as professional products manager.

David Holt, previously London area sales manager, has now taken over control of the Sound and Communications division of Willow Vale Electronics. He succeeds **Keith Barnard**, who spearheaded the launch of the division.

David Karlin, formerly a consultant to Harman, has joined BSS Audio as the company's new managing director. He has a strong background in digital technology and will be leading BSS's thrust into the domains of DSP and controlled audio processing.

Soundtracs has appointed **Chris West** as international sales manager to help broaden distribution and continue to increase sales of both new and existing product lines. West has worked for both Harman and Malcolm Toft Associates.

Albert Shaw, former president, honorary treasurer and one of The Lighting Association's longest serving members of council, died suddenly at his home in Little Aston on Tuesday, July 4. Founder of the family business, Quality Lighting Design, Shaw was one of the driving forces behind The Lighting Association.

Showco Creative Services Inc and all the Vari-Lite Companies have announced the premature death of **Kirby Wyatt** from the complications of AIDS-related illnesses.

He passed away at his home in Dallas on August 5. Wyatt was a pioneer in the early pop and rock concert touring business. At the time of his death, he had been with Showco for 23 years and was vice president of Showco Creative Services. He was 51 years old.



The international ETC family is growing all the time. Please contact any of the distributors shown below for information, sales and service on ETC products.

Australia	Jands Electronics Tel (+61) 2 516 3622 Fax (+61) 2 517 1993
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- Up to 498 memories

FEATURES

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- Set-up options

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AC Lighting Ltd

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Tel: 01494 446000 Fax: 01494 461024

First Wholehog II Heads for Entec

The London-based lighting and sound rental company, Entec, are particularly pleased with the news that the latest Flying Pig Systems lighting console, the Wholehog II (Son of Hog) has finally flown the nest.

Entec's Paul Weber placed his initial order for the first Wholehog II in June last year, and has been anxiously awaiting its delivery ever since. Throughout the 18-month wait, in which Flying Pig Systems concentrated on improving on the original Wholehog desk, Weber never lost faith. He told L+SI: "The rental demand for the Wholehog was phenomenal, and with the additional features aimed at the TV and theatrical markets, the Wholehog II is likely to appeal to an even wider audience."

Entec were the first company to commit to the Wholehog II for their rental stock, and it seems that their prompt action is paying off. They have already completed their first successful rental and are looking forward to a busy few months. You can see the Wholehog II on the stand of AC Lighting at the forthcoming PLASA Lighting & Sound Show at Earls Court 2 in London.



AC Lighting's Mike Falconer (left) presents Paul Weber of Entec with the new Wholehog II.



In-ear monitoring. Everyone's talking about it. But what do you really need to know?

Garwood earned its reputation with the Radio Station, the only in-ear monitoring system with a proven track record on the international touring circuit. Garwood's unique design team of sound engineers working with RF specialists has now produced the Garwood PRS II. The system, delivering each performer's monitor mix in stereo via a powerful UHF transmitter and receiver, shatters all previous price points for in-ear monitoring.

How much? Less than the cost of a monitor speaker system. Safer to use, better sound quality, easier to transport and set up. Above all, the Garwood systems allow the artists to control the volume of the mix.



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VJ Day - London

When producer Michael Parker decided to reverse the usual seating arrangement at Horse Guards Parade, it became clear that image projection on the Horse Guards building would provide an atmospheric backdrop to the staging of the final VJ ceremony attended by the Queen.

To facilitate this idea, Jonathan Park created an elegant and transparent roofed stage to present comfortably a choir of 300 and orchestra of 70 on TV and to an audience of 15,000.

The construction was ingeniously engineered by ESS, under the experienced eye of Olly Watts, using their component girder and tower system. An 18m square roof, with curved side extension and a bow-fronted fanfare balcony fascia, was supported on four open lattice towers, eight metres above a terraced stage, 24 metres wide.

With the Flashlight speakers, supplied by Britannia Row, hard up to the underside and Robert Ormbo's lighting trimmed up inside the girders, the slimline roof and lighting presented a profile of only 1.5 metres deep. In the event of rain the roof inflated into a pillow-shaped envelope.

The roof HT was arranged, via CAD perspectives, to blend into the architecture of the Horse Guard's building and everything was painted dull white to complete the illusion. The Royal Box, seating 300, with its open simplicity and the Queen's viewing balcony echoing the roof fascia, completed the minimalist picture.

The projection system was a complex affair.



Trial projection of stained glass windows without rear stage infill slides and with shadows.

Four cross-fading pairs of 7kW projectors, with a throw of 130 metres from the rear of the audience seating, provided the four quarters of the 125m x 15m HT image field. Two additional projectors, hidden behind the choir terracing, with a throw of only 18m, provided the infill projection to overlay the long-throw projection and burn out the shadows of the roof, towers and stage.

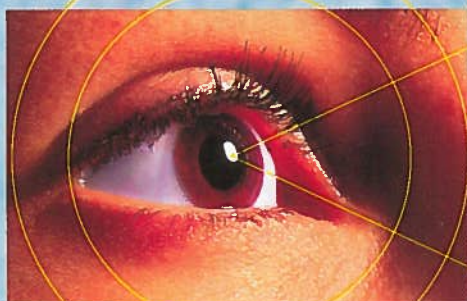
The off-axis positioning and closeness of the infill projectors required complex geometrical distortion and re-sizing of the projection images to accurately match them to the centre section of the long-throw images. This required three nights of trials, followed by an heroic 36 hours as 4i redimensioned and painted 36 pairs of image transparencies and ETC assembled the two new projector scrolls. The images lined up so well,

despite the crenellated facade of the building, that no soft-edge masking was required - a tribute to geometry and hard work. The nett result was a seamless projection image that wrapped magically round the back of the stage and down to the ground.

Art directed by Cheryll Park, the images used a multiplicity of photographic and pictorial sources; they were collaged and reprocessed in photoshop by Alex Quero at 4i, output as lith film transparencies and hand-tinted by Kate Hepburn. Thierry Noyer assembled these into the 10 scrolls that ran in the PIGI scrollers of the 7kW ETC projectors with Pani lenses. Ross Ashton of ETC UK directed the operation of the show programming using ETC's own software.

See also our VJ Day feature, on pages 122-124.

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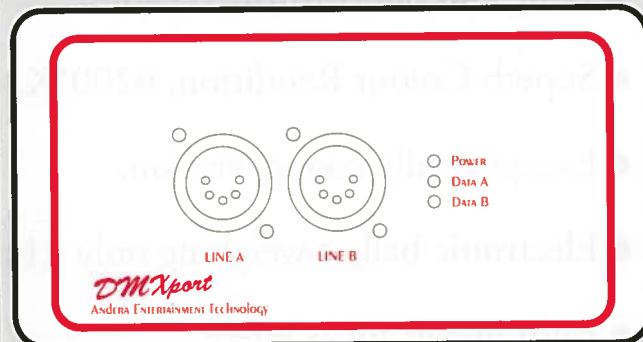
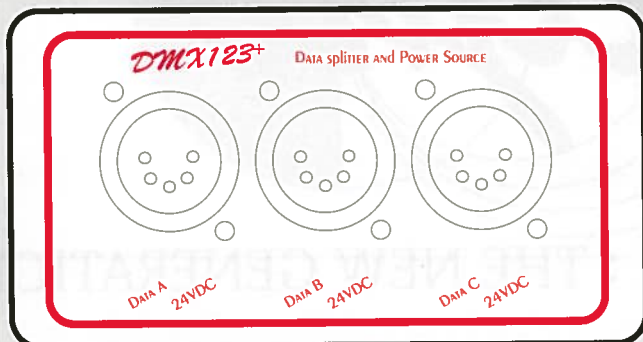
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ON SHOW AT PLASA '95 STAND A10

DMX PROBLEMS ? THE SOLUTIONS ...



Designed to alleviate data distribution problems ... a new range of RS485 buffer products specifically intended for use in entertainment lighting installations requiring multiple outlets of DMX512 or similar data.

By providing an isolated and buffered signal at each outlet point in the venue, installation designers can ensure that the connection of portable or rental equipment does not interfere with permanently installed equipment.

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Dual line buffered DMX distribution module for permanent installations. Data activity LED provided for each output.

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STAND A176

Cardiff's Big Weekend



Cardiff residents have been enjoying a new formula of summer music festivals. Now in its third year, the Cardiff Festival is a music, drama, comedy, fun fair, market in the park, radio station road show and fireworks experience rolled into one. The castle grounds, the city centre park and three roads in the centre of the city are dedicated to daytime and evening entertainment and there's even a designated festival-appointed night club for those that have the energy (and the capacity) to cope with a traditional Welsh pub lock-in!

The music festival is free - no barriers to contain the music lovers - allowing visitors to drift between the festival grounds, the fun fair and the city centre.

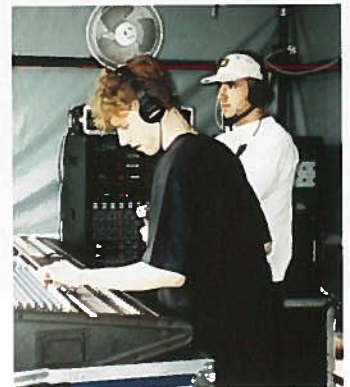
The task of putting the event together fell to Ceri James of Cardiff City Council Amenities Department. Neg Earth supplied the lights, Thistle Techniques the staging and rigging and AB Acoustics the PA and mixing desks. For the duration of the festival, Mark Thompson, better known as the European sales executive at Electronic Theatre Controls, reverted back to his one-time role as a lighting designer to undertake the lighting desk operation for the many performances.

Ian Hill of Illusion and Claude Taylor of Sensible Music provided the equipment and acts for the Red Tent cabaret enclosure. Drama, musical and comedy performances from the Ukraine, Catalonia and Wales entertained the audience, who received unbelievable value at £1 a head. Victims of their own success, the organisers' only problem appeared to be keeping the numbers down. All in all, Cardiff has developed for itself an enviable event - fun for the whole family and virtually trouble-free.

Anna Pillow



Mark Thompson at the controls of an Avolites Rolacue Sapphire.



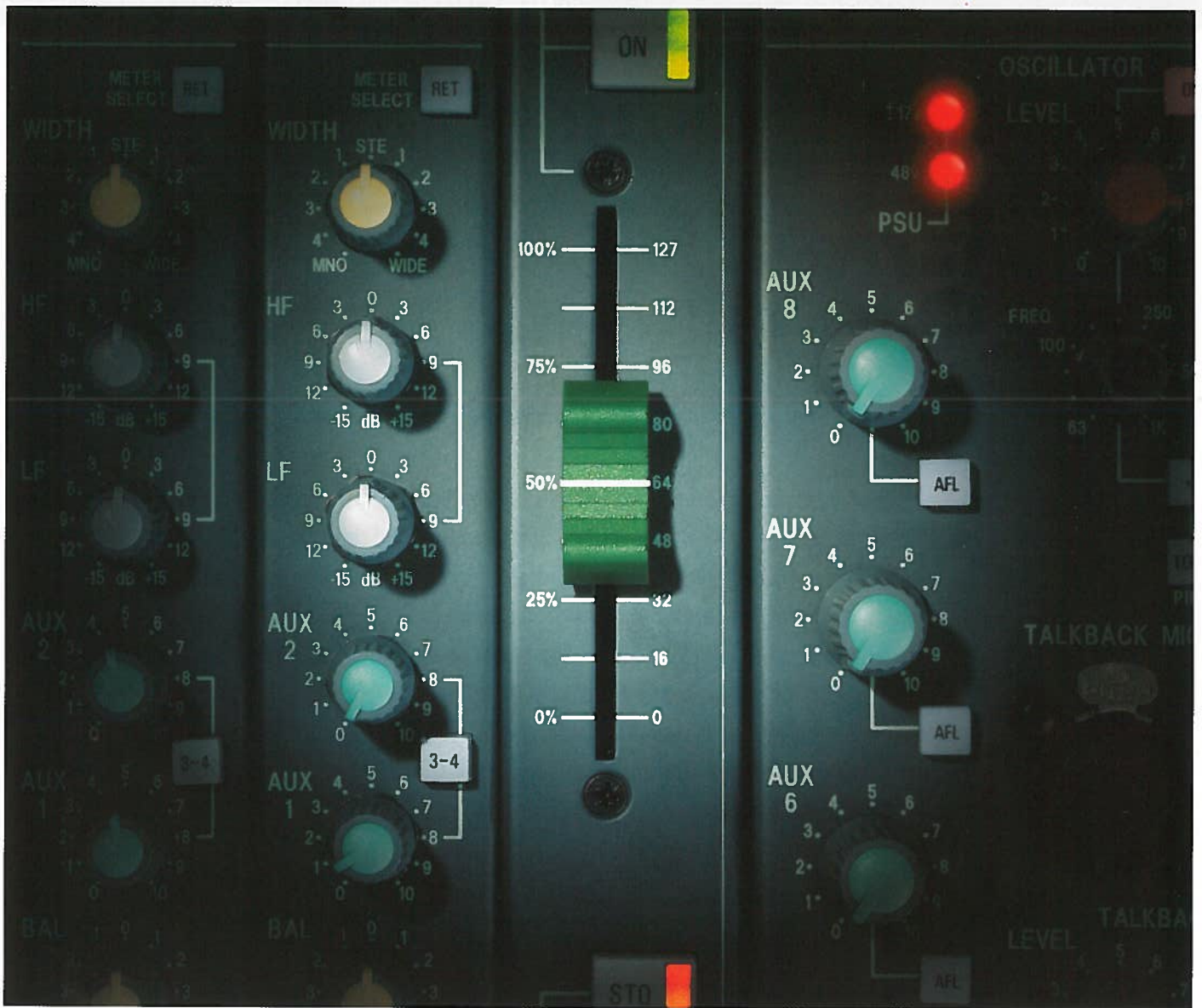
Ian Humphries, sound technician for Hugh Cornwall.

Theatre Vision

Theatre Vision, the new Welsh lighting and sound company, officially opened the doors of its new 4,700sq.ft unit in Cardiff on the 21st August. The company aims to provide a 'one-stop-shop', covering not only hire and sales, but complete technical and production services for theatres, schools, conferences and outdoor events.

To coincide with the opening, Theatre Vision have been appointed the main dealer for Strand Lighting in Wales and have got off to a good start by selling a Strand 430 control system to the Torch Theatre at Milford Haven. The desk was officially handed over on August 29th.

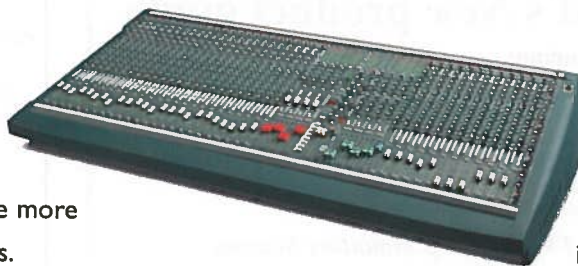
The company have also sold a Galaxy Nova to New Theatre, Cardiff, for use on the Welsh National Opera's forthcoming autumn season.



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Every component in a Soundcraft console is special. Some however, are more special than others.



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Reverb depth for instance or even lighting functions. Of course there's a lot more to K3 and K3 Theatre than ingenious MIDI implementation.

Like 8-bus routing, advanced solo facilities plus optional 12X4 matrix modules to ensure maximum flexibility. And the audio performance, naturally, is flawless. To find out more about the new Soundcraft K3 and K3 Theatre, call +44 (0)1707 668143 today.



Super Session

STAGE LIGHTING DESIGN:
NEW DIRECTIONS? AN EXPERIMENT!

with Richard Pilbrow

With the co-operation of leading suppliers utilising a specially designed rig, Richard Pilbrow of Theatre Projects Consultants will introduce and chair a distinguished panel to consider new instrument quality - the silence and reliability of colour scroller and moving lights represents a new phase in stage lighting. Presently, all accept that programming of moving lights is actually slower and less playable than hitherto. Fixed lighting control took 100 years from 'gasboard' to 'lightboard' (with sons) - computers, groups, wheels and digits. Moving lights require new types of control: off-line preparation and editing (WYSIWYG) touch screen or graphic pad manipulation (Expression) and either instant prefocus (Co-pilot) or 'online action focus' (Autopilot) or both!!
All indications point towards a Lightboard 2000!

PANEL:

Robert Bell - Cast Lighting, Brian Croft - Vari-Lite Europe, Fred Foster - ETC
Philip Nye - DHA, Steve Terry - Production Arts, Keny Whitright - Wybron

In the Brompton Suite, Earls Court Exhibition Centre - Monday 11th September at 2.15pm
Note: No admission charge, but attendees MUST have registered for PLASA 95

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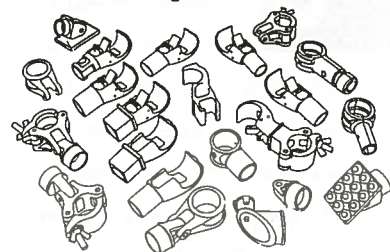


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The *Royal National Theatre* in London recently picked a winner from a field of international favourites all competing to be included in their major sound installation project. The new *Tannoy SuperDual S300*.

Designed for a wide range of leisure applications where sound quality and space requirements are critical, the *S300* is at the heart of a versatile new range of *Tannoy* sound reinforcement products, which are natural sounding, compact, rugged and easy to install.

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- Colour wheel with 8 standard colours through selected dichroic filters plus 16 colour combinations thanks to 2 colour correction filters (3200°K and 6000°K)
- 24 fixed positions
- 24 two colour projections available
- The colour wheel can rotate continuously at variable speed till rainbow effect
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- 4 Rotating Gobos
- 4 Indexable rotating gobos plus open position
- Memorizable indexed position on 540 degrees
- Easy interchangeable gobos
- Variable patterns rotation speed both in forward and reverse rotation
- 6 Standard Gobos
- 3 fixed plus 3 easy interchangeable position
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- All gobos of both wheels can be superimposed obtaining up to 30 static or rotating combinations

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- Totally noiseless high quality Iris for the wished projection diameter
- Totally independent from other parameters can be used also to reduce the gobo projection at will
- Linear control from close to open plus variable speed "pulse effect" to reduce considerably programming of Iris effects

VARIABLE FOCUS

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

FROST

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

PRISM

- Built-in prism for multiplier projections

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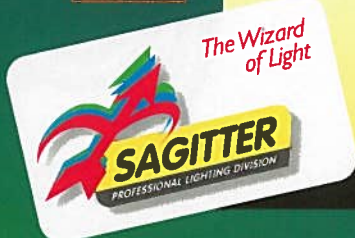
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Arup to Engineer ROH Development

Following their recent involvement with the new Glyndebourne Opera House, Ove Arup & Partners have been appointed by Royal Opera House Developments Ltd to provide integrated, multi-disciplinary engineering design services for the £213m redevelopment of the Opera House facilities, due to commence in July 1996.

Arup's commission covers structural, mechanical and electrical engineering, as well as fire safety and lighting design consultancy. The company have been appointed to advise on improving the acoustic of the main auditorium, developing the acoustic design of the extensive new side and rear stage areas, and on a second auditorium for small-scale performances and chamber music.

The Grade 1 listed auditorium and Floral Hall will both be refurbished, and new stage areas, a second auditorium, rehearsal rooms, ballet studios and full facilities for the Royal Opera House will be improved by the installation of modern equipment in a modern building. £55m was awarded by the Arts Council Lottery Board (with a further £23.5m once a number of conditions have been satisfied). The major portion of the remainder will be financed through private resources.

PKE Relocate

PKE Lighting have recently moved. They can now be reached at Unit B4 (5), Moss Industrial Estate, St. Helens Road, Leigh, Lancashire WN7 3PT, telephone 01942 678424.

First UK Events Conference

The first UK Events Conference is to be held at the Royal Moat House Hotel, Nottingham from 21-22 November. Those attending include a variety of industry figures and celebrity speakers, and the organisers, the UK Events Partnership, hope that it will attract representations from all sectors of the industry. It is also hoped that the conference will become a forum in which the industry's specialist bodies can come together and voice their concerns to the government covering legislation and training standards within UK events.

Further details on the conference are available from the organisers, telephone (01491) 874222.

Sarner Animatronics

London-based Sarner International Limited is making audio animatronic figures available in Europe. Unlike the simple motorised figures that are widespread throughout the UK, these incorporate sophisticated computer programming enabling them to virtually come alive.

Animatronics first made an impression in the UK when London's Rock Circus used them to represent and characterise some of the world's rock legends. Walt Disney has recently announced plans for a new large development of a 500 acre complex, which will feature a range of audio animatronics.

Lightfactor to Handle Parsafe

Lightfactor Sales have become the exclusive UK distributors for Parsafe, the cable connection that uses high-tech design to create maximum safety. Recent research by Dutch health and safety inspectors with current legislation has found that none of the contemporary Par fittings in use are safe. This has resulted in them being declared unfit for use, leaving theatres and hire companies to face the choice of investing in new fittings or building Parsafe into existing equipment.

Par lights have traditionally been adjusted by hand-holding the ceramic at the rear of the 'hot' light, running the risk of the coming into contact with the live internal cabling. This practice is now forbidden. Parsafe, which fits all Par 64 fittings, solves the problem by placing the foot of the light and the cabling in heat-resistant housing. Its double insulation prevents it from becoming hot and makes it impossible to make contact with the live elements ensuring that the lantern complies with all the necessary safety requirements, including EN 60835-1 and EN 60598.

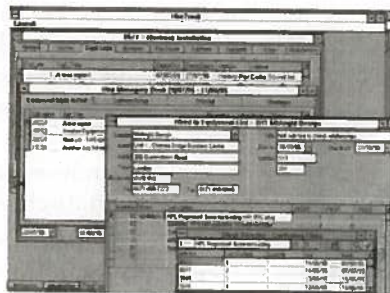
Islex 95

Islex 95, the second Irish Sound, Lighting & Special Effects Exhibition - will be held on 5th and 6th December at the Doyle Green Isle Hotel in Dublin. Exhibitors will include companies involved in the hire, installation, manufacture and distribution of equipment for sound, lighting, video and associated industries.

For further information contact organisers, KMS in Hailsham, telephone (01323) 442747.

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email: navigator.co.uk

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ACT ONE

SCENE 1

Paris, 1926.

As the lights come up, George is boasting to his friends about his new motor car. Sporting a monocle in his good eye, and flourishing his bone handled walking cane, he makes great play of unfolding his road map. A waiter enters stage left carrying a tray of drinks. Cognac. George, with typical generosity, tips him playfully over the balcony.

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- Automatic color fading for architecture
 - MSR1200 discharge model (45x22x48 cm 24.5 Kg) 26000 LUX @ 6m-2.7 m beam size
 - Narrow/wide fresnel or PC optics
 - Silent cooling system, with thermal switch

FLY

EuroParque £1.2M Contract for Glantre

One of the most recent contracts to be completed by Glantre Engineering covered the stage rigging and lighting for the new 1,500 seat auditorium in Portugal's newly opened EuroParque. As with other recent Portuguese projects, Glantre operated as sub-contractor to Philips Portuguesa, who handled the general project management, audio, communications and projection systems, whilst Efacec oversaw the electrical and mechanical installation.



The EuroParque complex is set in Oporto in the north of the country and although the auditorium is designed for more general use, such as conferences, fashion shows and sporting activities, it is adaptable enough to stage large scale productions such as opera, musicals and 70mm cine projection. The main stage area within the fly tower is equipped with a rigging system manufactured by Secoa of Minneapolis and features a safety curtain, house curtain, cinema screen hoist and 28 counterweight sets. The rear stage area is somewhat reduced in height and is equipped with six lineshaft hoist sets, four traveller tracks and five manual winch sets, while the forestage grid has 20 point hoists.

The acoustic concert shell consists of three reflectors, one rear wall and two 7.2m high towers, the tops of which hinge downwards so that they can be moved off-stage. The main stage floor has 20 de-mountable modular panels, each 2 x 1m, into which any of the three Delstar hydraulic lifts can be inserted.

As in the Coliseu at Lisbon, Glantre selected Spirallifts for the three orchestra pit lifts. These operate on a spiral spring mechanism which, in a lowered position, need a pit depth of only 400mm. Having supplied the manufacturer with the structural plans and confirmed the details with site measurements, Glantre installed the lifts themselves with an engineer from Paco in Montreal attending for final commissioning.

The stage lighting included a 300-channel Arri Imagine 3 control desk with Reflexion back-up and Smartrack digital dimmers. The 200 plus luminaires were supplied mainly by Strand and were augmented by cyc lights and Parcans from James Thomas, two Teatro 1.2k MSR Talento followspots and 24 Rainbow colour changers from M&M.

For Glantre the project was led by David Lee (project manager), Brian Dennis (senior project engineer) and Andy Quinn (site manager), while for Philips, Vitor Torres was project manager with Miguel Fernandes as site manager.

Lighting up the World Wide Web

Lighting industry professionals looking for useful information on a variety of products, services and applications can now tap into Production Arts Lighting's services through the World Wide Web.

The company has made a home for itself on the Web at <http://www.prodart.com/>. The home page menu provides Web users with a choice of product information, industry information such as codes and standards, company news and electronic mail. Lighting designers and technicians can search through product information, read about recent applications, or stop in FAQs (Frequently Asked Questions) for a variety of useful facts.

ETC Workshop '95

ETC welcomed 106 attendees from around the world to the company's largest-ever training event in Madison recently. Opening the meeting, sales and marketing VP Bill Gallingshouse contrasted the scale of this event with that of previous ones - an illustration of ETC's growth in recent years.

After outlining the new ETC operations in Hong Kong and London, marketing director Tim Burnham then welcomed visitors from nine countries who had travelled long distances to attend Workshop '95. Countries represented included Canada, Mexico, Australia (a mere 24 hours flying time away), Japan, Italy, Norway, Sweden, Denmark and the UK.

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ACT TWO

SCENE 1

The bar at Club Palm Bleu.

Louise and George are sitting back to back at the bar. They have drunk too much and there has been an argument. The cheroot which dangles from her painted lips sends dizzy spirals of smoke into the air. The barman whistles as he cleans a glass. Two nuns enter stage right, each carrying a large fish. Sensing the atmosphere, they leave immediately.

George throws a handful of francs over the bar, and totters unsteadily towards the door, muttering under his breath.

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'90 Years of Dance'

Imagination Entertainments produced the royal gala performance '90 Years of Dance' at the Royal College of Music in July. This celebration of dance, in aid of the charity Friends of the Elderly, was performed in front of HM The Queen and HRH The Princess Margaret, Countess of Snowdon.

The programme, inspired and directed by Wayne Sleep, featured Darcey Bussell, The Royal Ballet, English National Ballet, American Ballet Theatre, The Wayne Sleep Company, Kit & The Widow, The Roly Polys and the Irish Riverdance. Interweaving classical and modern styles, the production took the audience through a broad sweep of 90 years of dance history.

Imagination Entertainments provided a team of designers, as well as stage and production management. Led by Stephen Higgins and Anna Hoggard, this team included theatrical designer Sally Crabb, sound designer John Del'Nero and lighting designer Mike Sobotnicki.

ETC to the Rescue

Cleaning staff at the Lyric Theatre, Hammersmith, arrived at work one morning recently to discover that there had been a break-in during the night. Later, technical staff were amazed to discover that the intruders had found their way into the Studio control room and stolen a recently-installed Arri Mirage console, a Revox B77 tape deck (along with the current show tape) and a cassette deck. A pair of Clear-Com headsets from the main theatre prompt desk had also gone missing, and this was on the day of 606 Theatre's press night for their production of The Grand Ceremonial.

ETC were contacted via White Light, and a replacement MicroVision console was rushed by taxi to the theatre from the company's base in Heston. The cab driver, aware of the importance of his cargo, and stuck in a traffic jam in Hammersmith on what was a very hot day, parked up and ran with the board to the theatre! The lighting for the show was loaded into the new desk, and with replacement sound material, the



Paul Highfield, head of lighting at the Lyric with the replacement desk.

show started only half an hour late.

Staff at the Lyric are keen to trace the stolen items. The serial number of the Arri Mirage is 6885, and the Revox, 038856.

Contact Paul Highfield at the Lyric Theatre on 0181-741 0824 if you have any information about this equipment.

PSL Move

Presentation Services Ltd will be moving to new offices and warehousing in early September. The company, which specialises in the supply of equipment to tours and concerts worldwide, can now be reached at Unit 2, 41 Humber Road, Staples Corner, London NW2 6EN. Telephone 0181-208 7100.

Holmes Vision

Holmes Marketing and Distribution Ltd will have their largest-ever stand at Vision '95, which will take place at Olympia, London, from 17-19 October, in order to accommodate the nine manufacturers they now represent. Companies represented include Miller, Lowel, Century Precision Optics, Chimera Lightbanks, Innovision Optics and Rip-Tie.

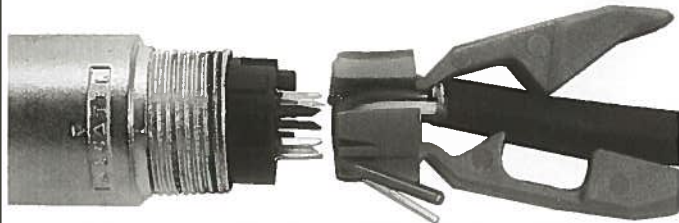
Nightwave 96

Nightwave 96, the first international exhibition dedicated exclusively to the discotheque industry, will be held in Rimini, Italy, from 11-14 May 1996.

Over 130 exhibitors are expected to take part, belonging to four main trade sectors: discotheques, music, clothes and foodstuffs.

For further details on exhibiting, contact the

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ACT THREE

SCENE 4

Eglise St George, Auxerre.

George is dead. His car is wrecked, the brake failure a mystery. Louise sits alone in the candlelit church, contemplating what might have been. She weeps gently into a silk handkerchief. In her lap there is a monocle, a roadmap, and a spanner. From the shadows Inspector Jambon and Sgt Fromage of la surete emerge. Louise gasps as a hand is placed firmly on her shoulder.

... 'Allo, 'allo, 'allo!'

Finis.

GOBOS



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Miss Saigon at Capitol Theatre

Miss Saigon is the latest musical to open in Australia with a Cadac J-Type mixing console. For its run at the Capitol Theatre in Sydney, Autograph Sound Recording's Andrew Bruce specified the massive, three-frame Cadac console, whilst System Sound PTY provided the 86-input J-Type, together with engineering support.

The Cameron Mackintosh musical has already broken Australian box office records, after tickets first went on sale in March. The theatre, which has a seating capacity of 2,000, has just undergone a major refurbishment programme (see L+SI, Feb '95), and has new stage management facilities, newly cabled audio and video systems and the latest communications links. System Sound is also supplying the show's sound operators - Bruce Cook and Alix Campbell - who were previously mixing Phantom of the Opera.

Other local news includes the appointment of System Sales, the daughter company to System Sound, as Cadac's sole distributor for Australia.

PJ Lighting

L+SI would like to apologise for the fact that due to an error the P.J. Lighting (Products) logo and original artwork was inadvertently used in an advertisement for Light UK in previous issues of the magazine. We wish to make it clear that P.J. Lighting (Products) has no connection with that company.

AT Kipper Test

Audio Technica AT 4033 microphones have just passed what must be one of their most unusual tests ever. The evaluations were organised by London-based Peter Kiely Productions who purchased two of the microphones earlier this year to test during the production of a radio play 'Ten Pounds and a Box of Kippers' for Big Arts.

During the recording, the microphones were left in the rain, dropped 10 feet on to gravel and tested wearing condoms. Peter Kiely Productions has subsequently tested the microphones for other applications such as club recordings and classical work. As a result, the microphones are now exclusively used throughout the firm's studios.

Zero 88's Class Commitment

Zero 88's recent series of service training days have been a sell-out, with both the Cwmbran and St Alban's sites over-subscribed.

As a result of an expanding product range 'Desk Days' and 'Dimmer Days' were held to ensure each product group received adequate coverage. The series was designed to give service technicians a better understanding of the requirements and techniques for Zero 88 systems and has proved an overwhelming success.

A further series is being planned. For details contact Fiona Francis, telephone (01727) 833271.

Par Opti Gold

Par Opti fibre optics have been used throughout The Museum of National Antiquities (Historiska Museet) in Stockholm for lighting the national collection of Viking Gold.

The room housing this exhibit is an underground vault of 700sq.m newly dug into the earth and bed-rock below the courtyard. The room consists of two circles, the inner containing over 3,000 objects and the outer enclosing exhibition cases and even a small theatre.

The company's fibre optics were chosen for conservation reasons and because of the delicate lighting requirements of such sensitive pieces. The show-cases are sealed with the air exchanged, dust-free and with the humidity and temperature controlled. Lamp changes are made to light sources outside the show-cases, eliminating the need to access sensitive and valuable artefacts.

New Central Courses

The Central Saint Martins College of Art and Design has expanded its range of short courses. The Film and Video department will now be offering courses, from introductory to advanced levels. These will cover 16mm film production, video and film animation, video production and also feature an in-depth three day course on the Lightworks edit system.

The crossover between film, video and multi-media is explored in a series of courses which combine the skills of film and video with graphics to look at sound and vision in multi-media. For full details contact Central Saint Martins in London, telephone 0171-753 0388.

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EPILOGUE

The applause has ended and the audience has gone home. The cast is being very "luvvie" backstage and the house is dark. The lighting designer reflects on how useful the Lee Filters gobos have been in creating the atmosphere he needed. Thank heavens he has a copy of the Lee Filters Gobo Pattern Selector. It has more than 200 gobo ideas in an easy to use format. There's a comprehensive pocket guide, too. He picks up his bone-handled cane, screws in his monocle, and strides off into the night.....

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particles partially reflect the light, enabling the audience to see the projected beams without the distracting fogging effect of conventional systems. The mist is harmless and due to the size of the particles requires far less fluid than conventional 'Smoke Machines'. Best of all, the Vision Light Enhancer is priced with the budget-conscious in mind.

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Autograph Gold

Theatre sound specialist Autograph Sound Recording has just taken delivery of a SoundStation Gold from Digital Audio Research (DAR), upgrading its 6-year old SoundStation II.

The new Gold is already at work in Autograph's dedicated sound effects production studio, which provides sophisticated effects for many international musicals and West End dramas.

Return of SOL

After an absence from the industry show calendar last year, Entex have announced the return of the popular Autumn one-day trade event 'SOL - MIDLANDS'. The exhibition, formerly the largest of the one-day style shows, will be held in Birmingham on Tuesday 7th November at a club venue near to the city centre. The show will open at 2pm and close at 10.00pm.

Leading manufacturers of sound, lighting, special effects and associated service will participate in the exhibition.

For further details contact organisers Entex in Acocks Green, telephone (01973) 122484.

Zero 88 Swedish Distributor

Bellalite Ljusdesign AB have been appointed to distribute the full range of Zero 88 stage and effects lighting control products throughout Sweden.

"Bellalite are a strong distribution company committed to customer service and very much like ourselves," Zero 88 sales director David Catterall told L+S: "Their stockholding and service policies should ensure prompt delivery and swift technical backup."

Pyropak Dealers

Luna Tech Euro has appointed new Pyropak dealers in Sweden and England.

In Sweden, the new distributor is Norabel Hansson AB: Hansson Fireworks, Box 93, 42723 Billdal, Sweden, tel: (46) 3191 1020, while in England, the Pyropak range will be distributed by Pyro Vision Ltd: 22 Tilgate Common, Bletchingley, Surrey RH1 4NP, tel (01883) 743335.

Luna Tech Euro has received BAM approval numbers on two new stage pyrotechnic effects: Pyropak Silver Waterfall and Pyropak Short Circuit Simulator.

In the Firing Line

Riad Mehio, the managing director of Penn Fabrication (Hastings) Ltd, was an unsuspecting volunteer at the recent emergency services display in Eastbourne. The East Sussex Fire Brigade were demonstrating how to put out a chip fire and because Penn Fabrications had helped support the event, it was only right that Mehio should get something in return. He was kitted out in full fire-fighting kit, complete with helmet. The chip pan fire was ignited and Riad was given a fire blanket to put it out.

LIW Double-Act

Maltbury, the Steeldeck staging specialists, and tracking experts Triple E are joining forces at Leisure Industry Week (Sept 26-28, Birmingham) to offer an integrated one-stop staging service. The Steeldeck staging system is known throughout the world and is used in major venues from the National Indoor Arena to Paramount Studios. Maltbury are the largest stockholders in the UK and offer a complete range of services.

The companies can be located on stand 553.

LeisureASIA 96

The first LeisureASIA exhibition will take place at the Singapore International Convention and Exhibition Centre from Thursday 21st to Saturday 23rd March 1996. The exhibition is aimed at manufacturers, suppliers and service providers of leisure equipment, systems and sub-systems.

This area of the entertainment industry is growing rapidly in Asia, and the exhibition will provide an ideal business forum for companies involved with areas such as recreation and sporting facilities, games and rides, theatre equipment and supplies, sets and scenery, admission systems and devices, computer systems, communications systems and security systems.

The exhibition is being jointly organised by Andrich International Ltd (UK), Amsterdam RAI (the Netherlands) and MP Conventions Pte Ltd (Singapore), as well as receiving support from the Singapore government.

For details contact Leisure Asia Pte Ltd in Singapore, tel (65) 290 5810.

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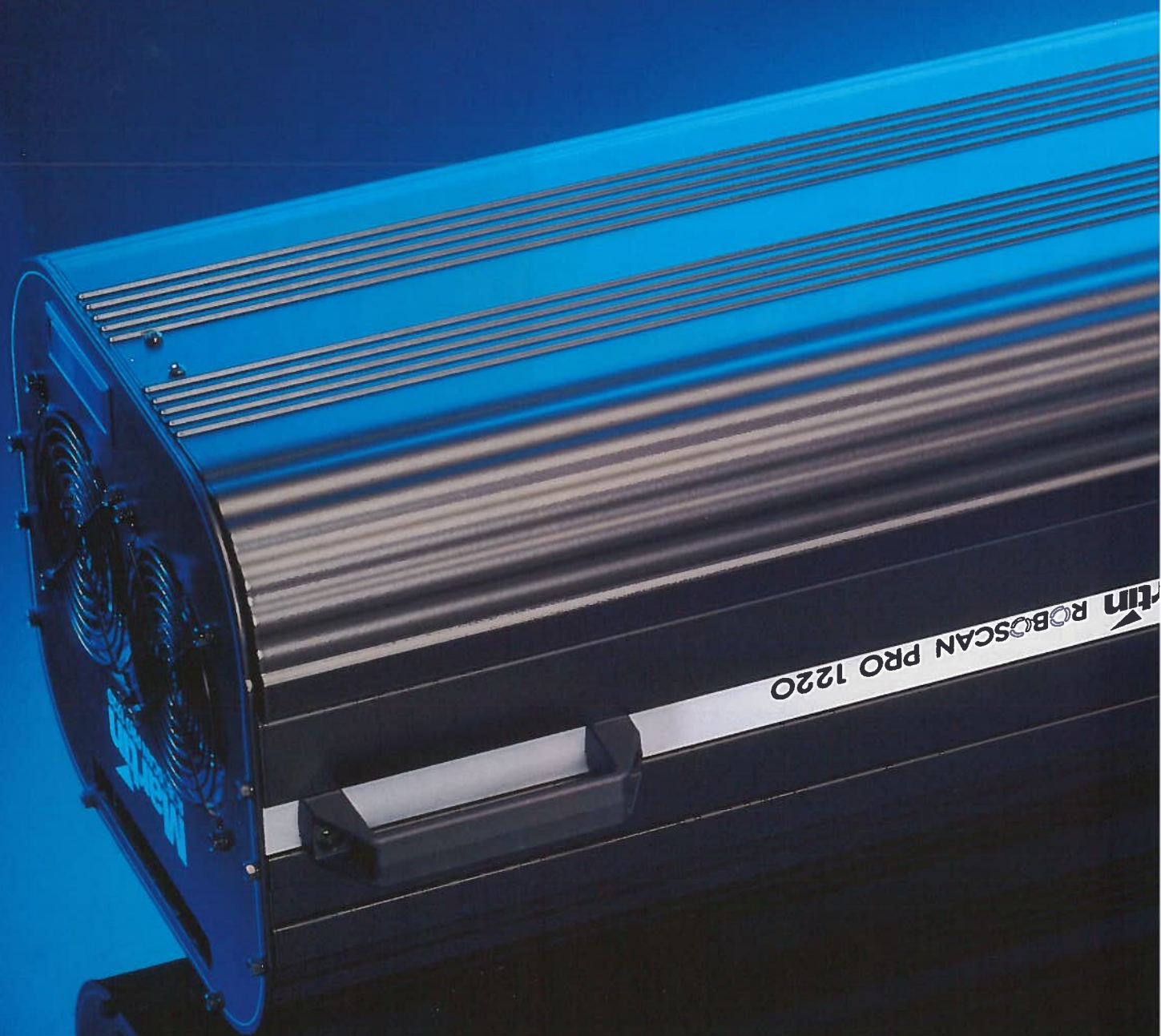
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Projects for Hz

Hz International have secured a couple of important outings for their range of loudspeaker and amplification equipment. The band Show of Hands, regarded by many as the number one folk group in the UK, will take their particular brand of music to the Royal Albert Hall next year for a major concert. The group, more accustomed to playing to audiences of 600 with just a pair of Hz HE300 cabs, powered by a single DPX600 amplifier for support, will upgrade their inventory of Hz equipment to a complete sound system for the performance.

Hz equipment is also being put to good use on the Battle of the Bands contest. This has now become the highest cash prize competition for emerging bands and is often a doorway to the studios and a possible recording contract. The 12-week long competition opens on September 2nd at the Belle Vue Hotel in Lee-on-Solent. Organised by Venue magazine, in conjunction with major sponsors Whitbread, Smirnoff UK and Bob Ross Studios, the competition will also benefit from Hz sound equipment donated by the company for the entire 12 weeks. The rig comprises eight HE300 mid/tops with titanium HF drivers, (four front-of-house, four stage monitors) six SB600 sub bass bins and four DPX1100 amplifiers.

Entec Join XI200 Club

One of the UK's longest-established PA hire companies, Entec Sound and Light, have taken delivery of a new Midas XL200 console, supplied by LMC Audio Systems.

The new console will join an impressive array of Entec hire stock, which also includes Midas XL3s and Soundcraft SM series monitor consoles. Dick Hayes of Entec told L+SI: "We have a constant demand for consoles that provide quality performance in the middle market. Having given long service, our 800 series consoles were getting on a bit and our XL3s are over-specified for certain clients. The XL200 offers a wide range of engineer facilities, combined with great end results."

WWG New Office

Wynne Willson Gottelier, specialists in the design of installed performance systems, as well as the creation and development of original equipment on an OEM basis, have opened new offices in Tunbridge Wells. The company can now be reached at 1A Langton Road, Tunbridge Wells, Kent TN4 8XA. Telephone (01892) 522626.

MusicCity

A new multi-purpose complex, located in the Quartier Nord area of Brussels, is set to take shape over the next two years. Once complete, MusicCity will be the first international venue created for the music industry, by the music industry.

The concept was developed by design company Language of Forms and architects Schuuiten. The complex will house a 12,000 capacity amphitheatre and a large precinct with hotels, clubs, restaurants and conference venues. Once completed, the amphitheatre will be one of the few world-class concert facilities in the heart of Europe.

Under the direction of Ogden Entertainment Services, the largest facility management group in the world, the venue has been designed for optimum comfort and is the direct result of research by the conceptual team. It will be the first part of the scheme to be completed and is scheduled to open in autumn next year. The theatre will be equipped with state-of-the-art audio-visual systems in a bid to become the blueprint for indoor amphitheatres of the future. The rest of the complex will house music-related functions. Amongst the many facilities will be a nightclub catering for up to 2,500 people and featuring multi-level dancefloors, four bars, a VIP club, a restaurant and top quality sound and vision systems.

Also on the site will be a hotel, offices, restaurants, shops, conference rooms and fully-equipped recording studios. The permanent recording set-up in the amphitheatre for 'live' events will make the studio somewhat unique.

CP Sound Install at Waxy O'Connors

Sunbury-on-Thames company CP Sound, are currently working on the sound and video installation for the new Glendola Leisure Irish Theme Pub, Waxy O'Connors, located in Rupert Street, London W1 which will open in early September. D.A.S. M18, Factor 8 and Factor 5 speakers are being used, powered by RSE PF 500CC and CC1500 amplifiers.

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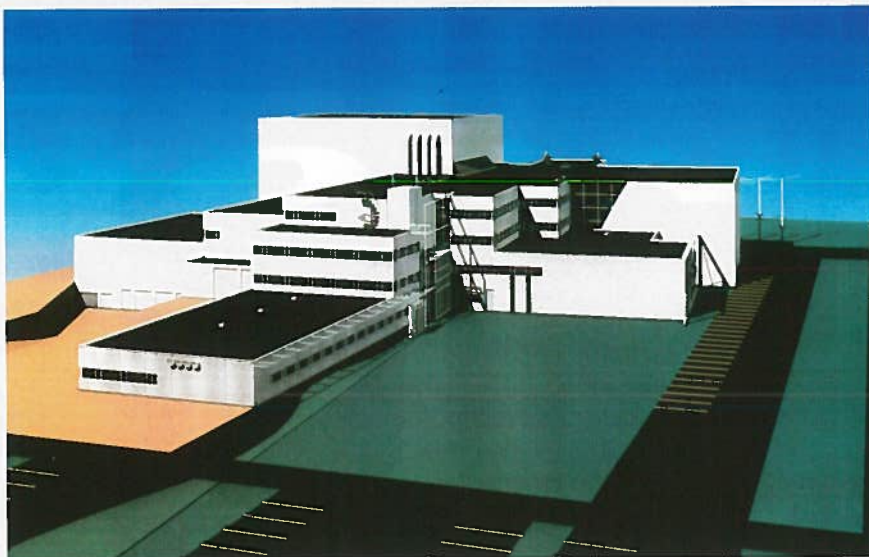
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Cirque du Soleil Studios

L+SI have just received the design drawings for the new Cirque du Soleil studios to be built outside Montreal's Centre de tri et d'élimination des déchets (CTED). The Studio will be a focus for creative activities, production and services and part of a major urban and community development project that will extend beyond the year 2000. Canadian company Scéno Plus will act as theatre consultant and oversee the construction management work for the project which, once completed, will cost in excess of \$30 million.

The first phase, which should be completed by the autumn of 1996, will include creative studios, workshops and administrative offices for more than 350 people. Once the immediate needs of the Cirque have been taken care of, other facilities will be added for community activities and artistic development. At the north end of the site, in collaboration with the City, the Cirque plans to set aside a public area where a Big Top could be set up or events could be staged. The 'Village', located at the south end of the site, will be a meeting place for the Cirque's artists and artisans.



Donmar with Genius

Donmar has just equipped the Greenwich Theatre in London with a Strand Lighting 430 console with 150 channels of Genius software. The installation includes two VGA 14" monitors and a hand-held remote. The company have also installed a 75-channel Genius, together with a Strand LBX (to replace an elderly JP60 manual desk) at the Gulbenkian Theatre in Canterbury. Other Strand Lighting equipment installed recently includes four LD90 racks with 92 x 2.5kW and 4 x 5kW modules installed at The Place Theatre in London and an MX24 to the Beaverwood School in Kent.

Live Entertainment Lines Up at LIW

The live entertainment line-up at this year's International Leisure Industry Week has been announced. Amongst those appearing at LIW '95 (26-28 September - NEC, Birmingham) are the cast of 'West End Showstoppers' and 'That'll Be the Day'. The Institute of Entertainment & Arts Management (IEAM) will be lending their specialist expertise by stage-managing the event on behalf of LIW. The live performances at this year's show are part of a programme of activities within 'The Pleasuredome' - a working leisure facility constructed within the show. This is a first for LIW, as it features not only the working live stage area, but also a nightclub and family entertainment centre. There are eight separately-themed sections at the show, covering areas such as catering, coin-operated amusements and facilities management, and there is also a dedicated entertainments section. For free tickets to the event, call the LIW ticket hotline on 0181-773 1313.

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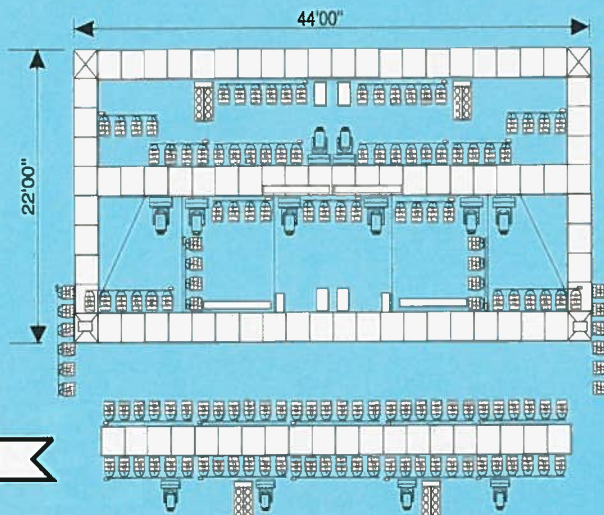
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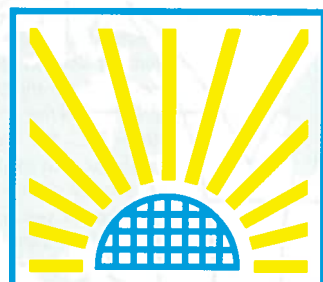
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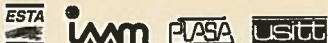
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Graduating in Style



Actress Imelda Staunton, well known for her TV work and film roles in *Peter's Friends* and *Much Ado About Nothing*, and actor Jim Carter, known for his recent appearance in *The Madness of George III*, visited Mountview Theatre School recently to present diplomas to students from the three-year Acting and Musical Course, the two-year Stage Management, Technical Theatre and Design Course and one-year Directors Course.

A number of graduates from the Stage Management and Technical Theatre Course have already found their first professional jobs. Clare Tustain, from Essex, is working as assistant floor manager for the cable television channel QVC, Paul Yule, from Suffolk, will be taking up a position as followspot operator on *Oliver!* at the London Palladium and Andrew Mahaffey, from Hertfordshire, will be assistant technical manager on a series of outdoor rock concerts for Sergeant Pepper's Concert Party.

Above, third year acting and musical course students show how it's done.

Bernard Happé Lecture

The BKSTS have invited Robert Simpson, chairman of Electrosonic Ltd, to present the Bernard Happé Memorial Lecture, which will take place on Wednesday October 11th in the MOMI Workshops in London.

Simpson has chosen as his theme 'The Great Multi-Screen Bazaar'. He will review the applications of multi-screen presentation in entertainment, publicity, training, commerce and industry. The use of gas-powered multiple magic lanterns in the nineteenth century will be contrasted with the latest all-electronic techniques. A range of new technologies will be considered including multi-screen film projection using interlocked 35 and 70mm film projectors, video presentation using from two to 850 video screens, high resolution graphics displays, water screens and mixed media displays. The lecture will be illustrated by examples covering the range of projects undertaken by Electrosonic.

ALD Reshuffle

The Association of Lighting Designers have recently appointed a new president and a new chairman. Michael Northen, stepping down after four years as chairman, has been elected to the post of president of the association and Rick Fisher will step into the role of chairman.

Fisher, who last year won Olivier, Tony and Drama Desk awards for 'Best Lighting', has most recently lit *Under Milk Wood* at the Royal National Theatre. Northen, who retired from active lighting design some years ago (although his lighting for *The Mousetrap* can still be seen at the St. Martins Theatre) told L+S: "I am honoured to be asked to be president of the association - presidents of societies are usually relegated to a cupboard in the boardroom and every so often are brought out, dusted down and asked to look happy and vastly knowledgeable. I certainly can do the former, but I am very doubtful about the latter!"

Two new positions have been added to the executive committee, to improve the representation of both student and associate members. Dominic Main will act as student representative, whilst the position of associate representative remains to be filled. A new member of the committee is Ron Balmforth, who will be responsible for publicity. He will take his place alongside other members of the executive committee: Chris Watts (secretary), Peter Hunter (treasurer), John Chapman (membership secretary), Nick Hunt (editor of the association's magazine Focus), Jackie Staines (regional representative) and Steve Hawkins.

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Trade Show Round-up

Photokina 1996 will take place in Cologne, Germany, from Wednesday 18th to Monday 23rd September 1996.

Alongside the photo/video sector, the show will feature multi-media applications including electronic imaging systems, pre-press technology and new forms of multi-media presentation.

In parallel with Photokina, a number of specialist events are planned, including the presentation of the German Camera Prize Cologne, the 1996 SMPTE European Conference On Imaging Media, and scientific symposiums on electronic photography and photo-finishing.

For details on Photokina, contact the organisers KölnMesse, in Cologne, telephone +49 221 821-2494.

InfoComm International, one of the United States' leading exhibitions of communication services and products, has branched into Asia. The new show, **InfoComm Asia**, will be held in Singapore from 23-25 November 1995, and will include product demonstrations, head-to-head comparisons and specialised seminars and classes.

High on the agenda will be video production and distribution, video-conferencing, audio tools and techniques, interactive video, multi-media applications, large-screen projectors and virtual reality.

For further details, contact Tour East Pte Ltd, telephone (65) 220 2200 in Asia, or J Spargo and Associates in the USA, telephone (703) 631 6200.

According to exhibitors and attendees alike, the recent **Lightfair International** show in Chicago was a great success. Over 11,000 lighting professionals registered for the show, which was held at McCormick Place East Convention Center in Chicago.

Most manufacturers seized on the opportunity to introduce new products, with many participating in the New Product Showcase, sponsored by Architectural Lighting magazine. The 'Best New Product of the Year' award went to Philips Lighting for their Master Color Metal Halide Lamps.

Summer Madness

Theatre Projects have had a busy and successful summer: VE Day in Hyde Park, along with the lighting on the Telecom tower for the finale to London's three days of celebrations, Croydon's Light After Dark, the Royal Tournament, the illumination of the Michael Jackson effigy on the Thames and the launch of Space Mountain at Euro Disney, Paris, are just some of the high points in the company's 1995 summer season. Attention has now switched to the productions of Phantom of the Opera in Basel, Switzerland and Sunset Boulevard in Wiesbaden, Germany.

The company's concert touring division, Concert Production Lighting, has also been keeping its name in lights with concert tours for top names such as The Cure, Status Quo, Take That and the Rolling Stones. Also on CPL's agenda is 'T' in the Park - Scotland's largest music festival - and a Jazz Festival in London's Kew Gardens.

MM Line Up

MM Productions of Colchester have recently supplied the Royal National Theatre with eight Fujitsu 230Mb M/O disk drives to be used as a storage system for their Akai Samplers. The company have also supplied English National Opera with an Akai S3200 sampler with full memory. Back in Colchester, they have added a new item to their hire stock - a Soundcraft K3 Theatre mixing desk with 31 inputs and eight channels of matrix. From September, the MM Productions Stop Box will also be available to accompany the DR4.

Emmy Nomination for A-T User

Sound recordist Mike Savage, one of Audio Technica's leading microphone users, has been nominated for an Emmy award thanks to the recent release in America by ABC Kane productions of 'Chasing India's Monsoon'.

Savage, a former BBC sound recordist, made the documentary over five weeks on location in India and was rained on in Trivandrum, Bombay and Calcutta and drenched in Cherrapunji - the wettest place in the world. He has a large selection of Audio Technica microphones and candidly confesses that he often uses them in situations that the microphones were never designed for. The Emmy presentations will take place on September 12th 1995 in New York.

ETC Dealer for Far East

Singapore-based Pacom Asia Pte Ltd has become Electronic Theatre Controls (Inc) exclusive distributor for Singapore, Malaysia and Brunei. The agreement between the two companies was finalised by ETC Asia sales director Jimmy Cheung following the PALA show in Singapore.

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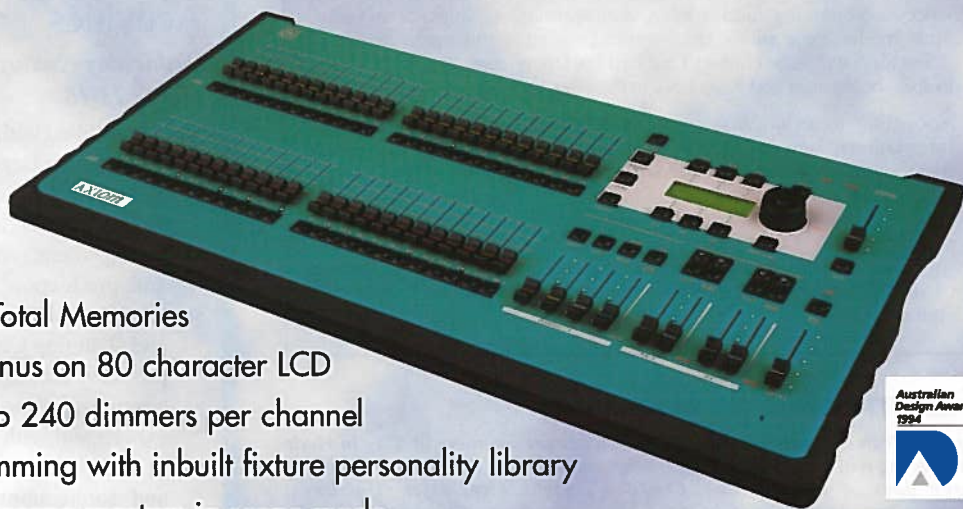


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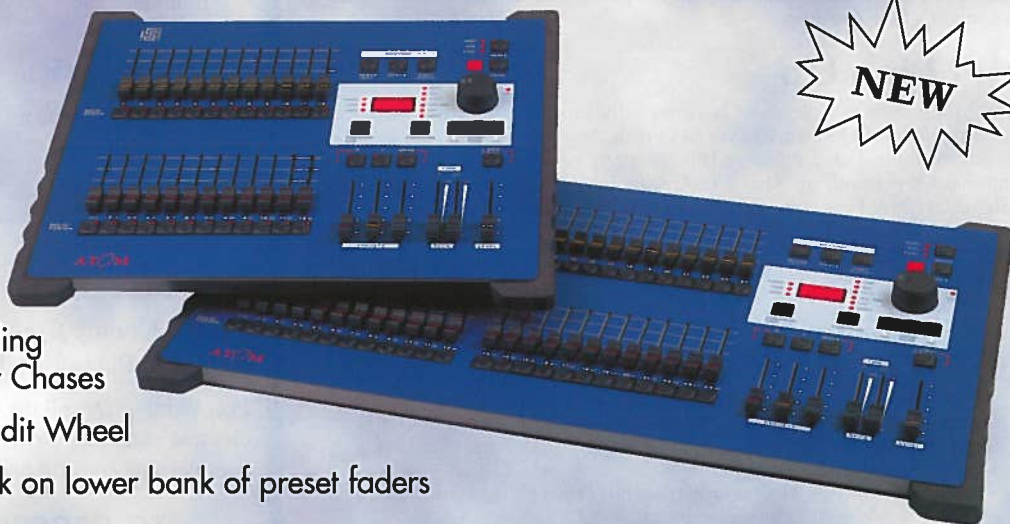
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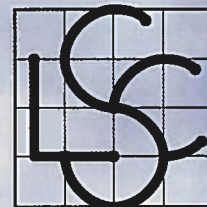


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Voodoo Lights



The main lighting contractor for the Rolling Stones Voodoo Lounge tour was Concert Production Lighting (CPL). In-house client production manager, Carol Croft, worked closely with lighting designer Patrick Woodroffe on the show which came to Wembley last month, following a successful world tour.

In the past, Croft has also handled the lighting for Paul McCartney and Pink Floyd. Along with the co-ordination of Woodroffe's ambitious lighting plan, CPL was also responsible for overall budgetary control, hiring sub-contractors, employing crew, legal contracts and payment schedules. Drawing on past experience as a wardrobe mistress, Croft was also involved, along with Wayne Boehning of CPL in Dallas, in devising the custom designed 'anoraks' used to protect the highly expensive intelligent lights from the elements.

The lighting equipment for the Voodoo Lounge tour included Vari*Lite and Telescans with their own consoles, plus conventional lighting and Xescans (used to simulate the eyes in the Cobra's head) - controlled by Wholehog boards (see L+SI, Sept 1994).

photo: Mark Fisher

Indian Market

Prakash '95, the second in a series of Exhibitions on Lighting Technology, will be held in India, from Oct 29 to Nov 3, 1995.

The fair, the single largest event of its kind in Southern Asia, will take place at the Pragati Maidan exhibition complex in New Delhi. The show will highlight the advances made by the Indian Lighting industry over the years and over 150 exhibitors from the country, together with a number of leading overseas companies, will display a wide range of state-of-the-art lighting products, systems, services and machinery.

Of special interest will be the increasing use of electronics and consequent miniaturisation in lighting systems, as well as lighting applications using non-conventional energy sources and lasers. The show will also play host to the 23rd session of the CIE (Commission Internationale de l'Eclairage) which will open on November 1st and run until November 8th.

For details on Prakash 95, contact the India Trade Promotion Organisation in New Delhi, telephone +91 11 331 5213.

Edge Hill Technology Course

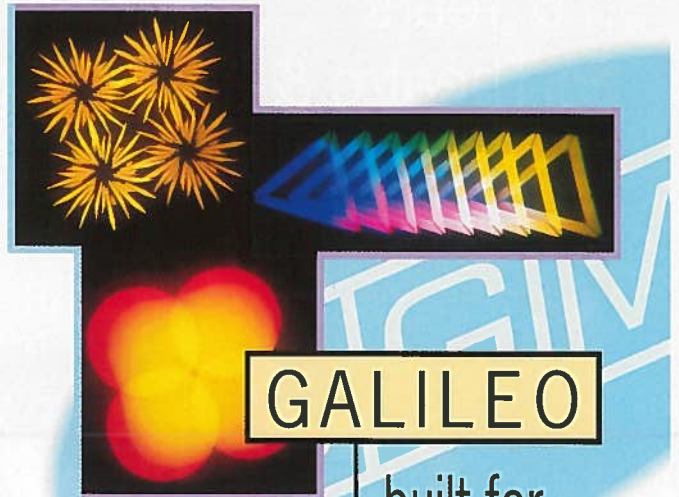
Having recently secured European funding, Edge Hill College are launching an Entertainment and Performance Technology course, developing lighting, sound and stage management techniques on Merseyside.

The new course will allow participants access to state-of-the-art technology in lighting and sound production, which will enable them to professionally present anything from a work of art in a local gallery to a full-blown theatre production. Course content, which is practical rather than theoretical, includes visits to some of the top production facilities in the country, presentations by leading professionals, project work, which will include converting an empty warehouse into a temporary live entertainment venue, examination of a variety of computer applications and a four-week work experience placement.

The course is aimed at anyone living within the Merseyside Objective 1 area who is unemployed. Admission is not subject to prior qualifications, and has already attracted interest from a wide number of individuals. Successful participants will receive a College Certificate of Higher Education.

For further details, telephone Edge Hill Enterprises on (01695) 584327.

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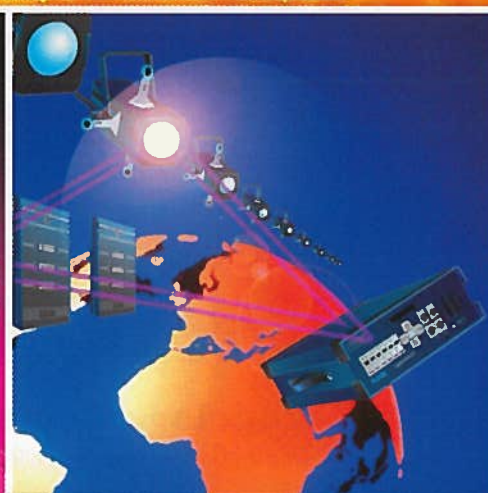
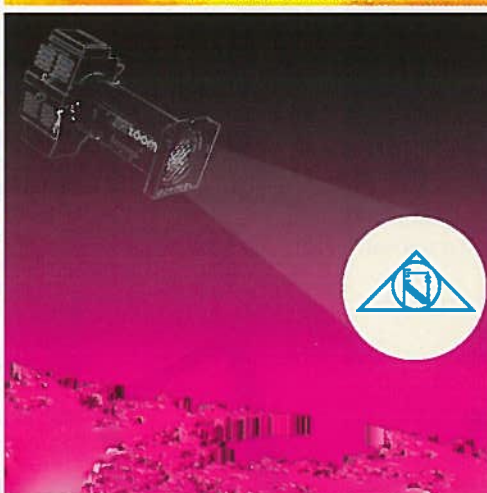
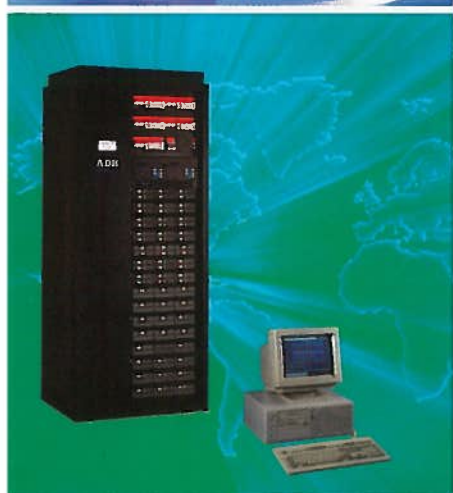
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NOEA Clinics

The National Outdoor Events Association (NOEA) is to run a series of regional clinics, taking place around the UK over the coming year.

The clinics are intended to be forums for the exchange of views and experiences, and the organisers hope to attract all sectors of the industry, from civic authorities, through show organisers, to suppliers of equipment and services. The programme will include seminars, business training sessions, and will be supported by a display of technology.

The autumn programme commences on November 7th, with a clinic at the Chalon Court Hotel, St Helens, Merseyside. The following day, a regional clinic will be held at the Seaburn Leisure Centre in Sunderland and delegates will have the opportunity to visit the new £4.5m library and arts centre in the city.

With the UK Events Conference taking place in Nottingham on November 21 and 22, and the Outdoor Events and Live Music Show at Wembley on January 16-18th, 1996, the first event for the New Year, details of which are to be confirmed, will take place in Midlands during February.

A Northern Ireland forum is scheduled for March 12th, 1996, at Belfast Castle and the Scottish forum will be at the Royal Highland Centre, Ingliston, Edinburgh in September, 1996.

For further details, contact organisers NOEA in Wallington, telephone 0181-669 8121.

Owl Challenge



Owl Video Systems recently helped launch the Challenge Anneka/New Blood Donor Day for the National Blood Transfusion, lending a 5x4 monitor videowall for the press launch. The videowall provided the backdrop to the launch which is to be televised in the new autumn series of 'Challenge Anneka'.

Owl swooped into action for the press launch and arranged for the delivery and installation of the videowall to the Queen Elizabeth Hall on the South Bank in London. Kaleidovision Ltd, a distributor of Owl's video systems, supplied the videographics for the launch.

AB Appoint Lamba

Lamba have been officially appointed as the sole UK distributor for AB. The Californian-based company have specialised in the design and manufacture of top quality amplifiers, for many years.

AB amplifiers are manufactured to reduce 'transient intermodulation distortion' commonly known as TIM, which can cause sonic harshness, often occurring due to the excessive use of negative feedback.

A 'Linear Design' philosophy lies behind AB's amplifiers. They claim this enables them to produce a genuinely true sound, whilst retaining very respectable static conditions. The full range of AB amps will be on display on Lamba's stand (C49) at the forthcoming PLASA Light & Sound Show at Earls Court 2 in London.

The Empire Strikes Back

Concerts come and concerts go, but lately they seem to come more often than not to the newly renovated Empire Theatre in the heart of London. The Go-Gos, Nick Lowe, Belly, Counting Crows, Elvis Costello, The Proclaimers, The Kinks, The Cranberries and Johnny Cash are just a few of the names who have appeared at the Empire since its opening.

The theatre is housed in a former BBC live broadcast centre which underwent a significant architectural restoration. A new sound system was installed by Mick Williams Associates with assistance from Cane Green. It includes left and right main clusters of 15 KF850 Virtual Array full range loudspeakers from US manufacturer Eastern Acoustic Works, along with eight EAW SB850 subwoofers. Four EAW JF260 compact high definition systems are used as upper balcony delays, and three of EAW's low profile UB42's fill in the ground floor area beneath the balcony. The entire system (mains and monitors) is powered by Crest amplifiers, whilst Yamaha PM3000 and PM4000 consoles provide ample inputs for the front-of-house and monitor mixes.

Since opening, The Empire has enjoyed rave reviews from audiences, performers and critics and has been nominated as International Venue of the Year by Pollstar magazine and was awarded the 'Best new Live Performance Venue' by Live! magazine.

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RCF Host Italian Visit



RCF Electronics (UK) Ltd recently organised a visit to the Intel '95 show in Milan for a number of their UK distributors. Delegates were able to see, first-hand, the company's full range of products.

From Milan, the group went on to visit RCF's headquarters at Reggio. The manufacturing plant is situated on two sites, and includes the main administration buildings and also houses the R&D area, and some of the component manufacturing. Whilst at Reggio, the group was looked after by RCF's Fausto Davoli, head of sales and marketing and Corado Davoli, technical director.

During the visit, the distributors were able to see the development of RCF's latest professional loudspeakers, including the Event 6000, latest addition to the Event series, due to have its world launch at this year's PLASA Show.

Those attending were Richard Dudley-Smith (Raper & Wayman), Jim Thomas (Enlightened Audio), Adrian Rowe (Direct Communications), John Burkitt (R. W. Salt), John Monks (West London Electric), Paul Trask (Envo-Tech), John Mulrane (Borsomy Communications) and Dave Chapman (Blaydon Communications).

Peavey Expansion

Peavey Electronics has acquired new premises in Corby. The acquisition forms part of major plans to develop pan-European distribution of its products. Situated in the Oakley Hay industrial area, the new property comprises an existing high specification 58,000sq.ft industrial unit set in a 8.6 acre plot.

Work is starting immediately to construct additional facilities and prepare the building for occupation later in the year. The current operation in Corby will be relocated, including the manufacturing operation which produces loudspeaker systems and microphones for the European market. The company established a UK distribution base and manufacturing unit at Corby in 1986, since when the workforce has increased from four to 67, with further new jobs being created by the move.

ILE in Toronto

The International Lighting Exposition will take place from September 27-29, 1995, at the Metro Toronto Convention Centre. This year's show will feature almost 200 exhibitors displaying a range of lighting products and services to lighting specifiers, installers and end-users, including architects, consulting engineers, interior designers and lighting designers.

In conjunction with the ILE, the Illuminating Engineering Society (IES) Toronto Section is holding their Canadian Regional Conference, which will feature 14 seminars and the 'Watt's New' showcase.

A new feature of ILE is the 'Canadian Bright Lights Gallery' which will pay tribute to Canada's leading talents in the field of lighting design.

For further details contact the show organisers in Canada, telephone +1 (905) 890 1846.

BBC Studio Theatre £1.5m Refurbishment

The BBC's Broadcasting House Concert Hall has recently re-opened following a major £1.5million refurbishment programme. To be known as the BBC Radio Theatre, it will be the main venue for light entertainment productions and radio audience shows.

The ceiling has been rebuilt to resemble the original, whilst incorporating anti-reverberant acoustic treatment. New furnishings and seating for 300 have been installed, as has a Bose sound system. In the

**Former
BBC
Concert
Hall gets
audio
face-lift**

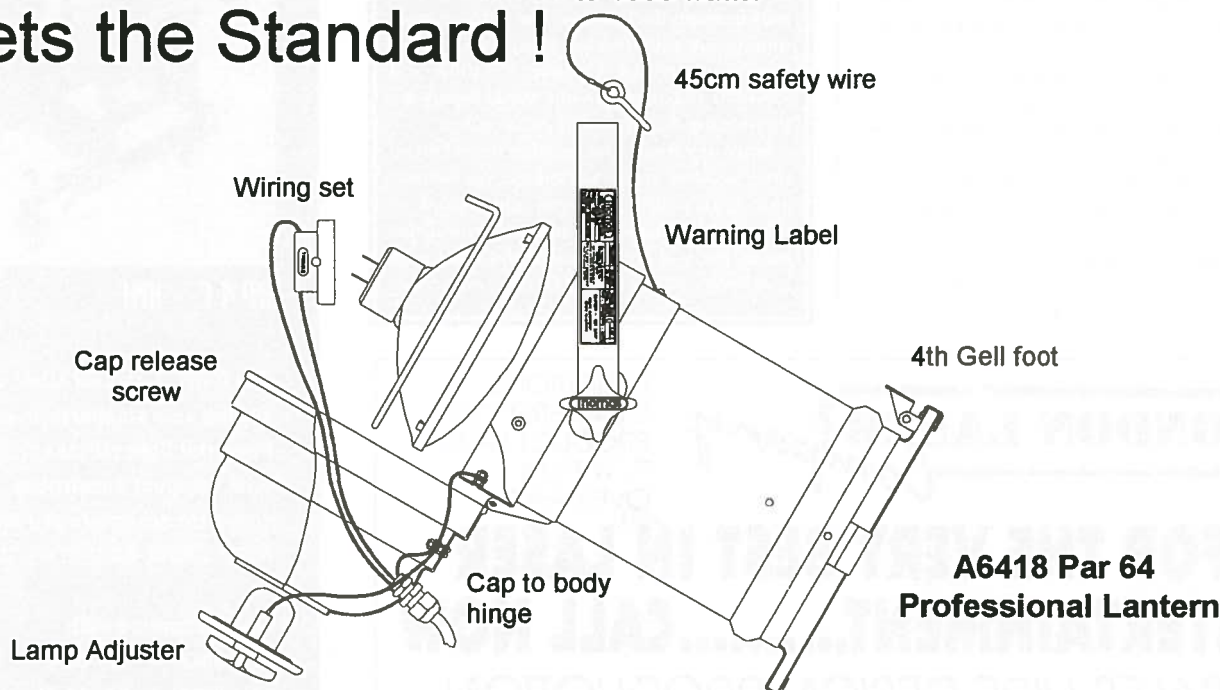
control room, Canford Audio have installed a customised console, which houses Akai samplers, CD players and a submixer for sound effects handling. A producer's console was also supplied housing reverb and processing equipment and free-standing record trolley for DAT and hard disk recorders. Each console has a recessed rackstrip with built-in concealed lighting.

The Radio Theatre is available for hire. Contact the BBC on 0171-765 3209.

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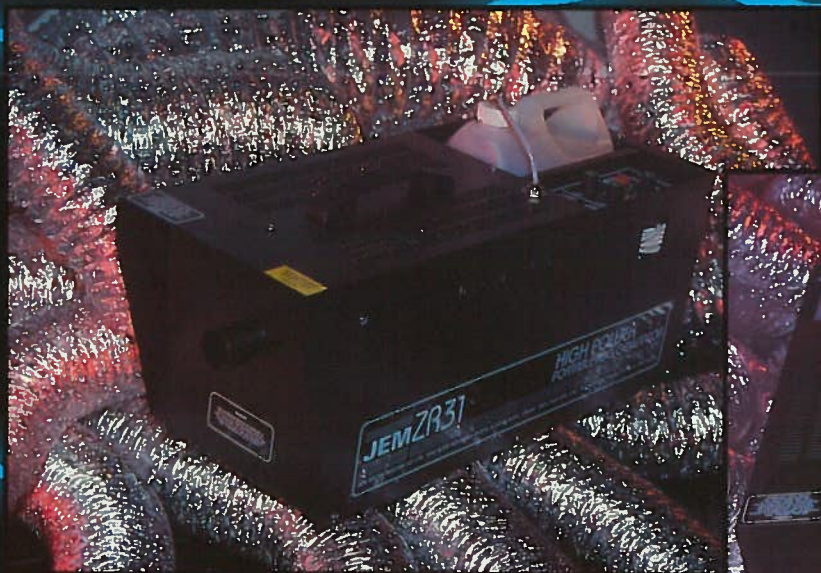


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4:1 Studio Reopens in Cologne, Germany

When, on September 1st, the doors of the 4:1 studio officially open, there will be a new and powerful tool for development and presentation of events and productions at the hands of designers. The studio offers the equipment and the necessary infra-structure for real-time simulation of stage situations, show and marketing events, but in a scale of 1:4.

The founder of the studio, lighting designer Patrick Woodroffe, who has worked with the Rolling Stones, Simply Red and Tina Turner, told L+S: "Many stage and lighting designers encounter the problem of presenting their idea. When I discovered the small Par 16 luminaires, the initial idea for the realisation of 4:1 was born. The studio was successfully run in London for three years, but became too demanding and neither I, nor partner Steve Nolan, had the time or energy to dedicate to the project."

As a result, the studio was put up for sale and it wasn't long before interest in the venture was expressed by a German company and the studio was relocated to Hürth, near Cologne, inside the studio complex of the Magic Media Company. The studio is run by a company of the same name, headed by Wilfried Schiefer, a founder of Showtec GmbH. The company bought all the 4:1 studio equipment, as well as all the rights to the concept. Schiefer hopes that as well as continuing to attract established users from the rock and roll business, the studio should also appeal to designers from



different fields, including theatre and architecture. There are also plans for it to be put to educational use, with practical seminars being staged.

The new 4:1 is equipped with a complete lighting system, including trusses, followspots, effects units, colour scrollers, floods and ellipsoidals. There is also a complete 4:1 band, with props and costumes. For control of the lighting system there are consoles from MA, Avolites, Strand and AVAB, and a video system allows the designer to check camera angles. The location of the studio was deliberately sited within the grounds of a large TV complex, where there is ready access to a number of related services including scenery builders and set designers.

Further information on the hire of the studio is available on +49 2233 595 680.

DJ Competition

The PLASA Light & Sound Show at Earls Court 2 in London, will see the launch of the Vestax Europe/DJ Magazine DJ competition which will provide an opportunity for visitors to demonstrate their DJ-ing skills. Big-name dance music DJs, whose names will remain secret until the day, will also be present to judge the entrants and to entertain between the heats.

The contest will take place on Sunday 10th September, starting at 11.00am. Places are strictly limited and are issued on a 'first come, first served' basis. All prizes are being donated by Vestax and the winner will receive two PDT 5000 turntables. The second prize is a DJ CD player and the third is a Street Master 5005 scratch mixer and a KMX 2 stickphone. Everyone who enters will receive a Vestax goody bag.

Heats will consist of ten minutes DJ-ing time and five minutes preparation for the next entrant. Four people per heat will participate, with one person from each of the three heats going forward to the final. The overall winner qualifies for the national and international competitions.

Prospective entrants will need to register at the same time as they complete their DJ Magazine competition forms and should bring with them their own records/CDs. They will then be allocated a heat and number and should make their way to the DJ competition stand by Gate M.

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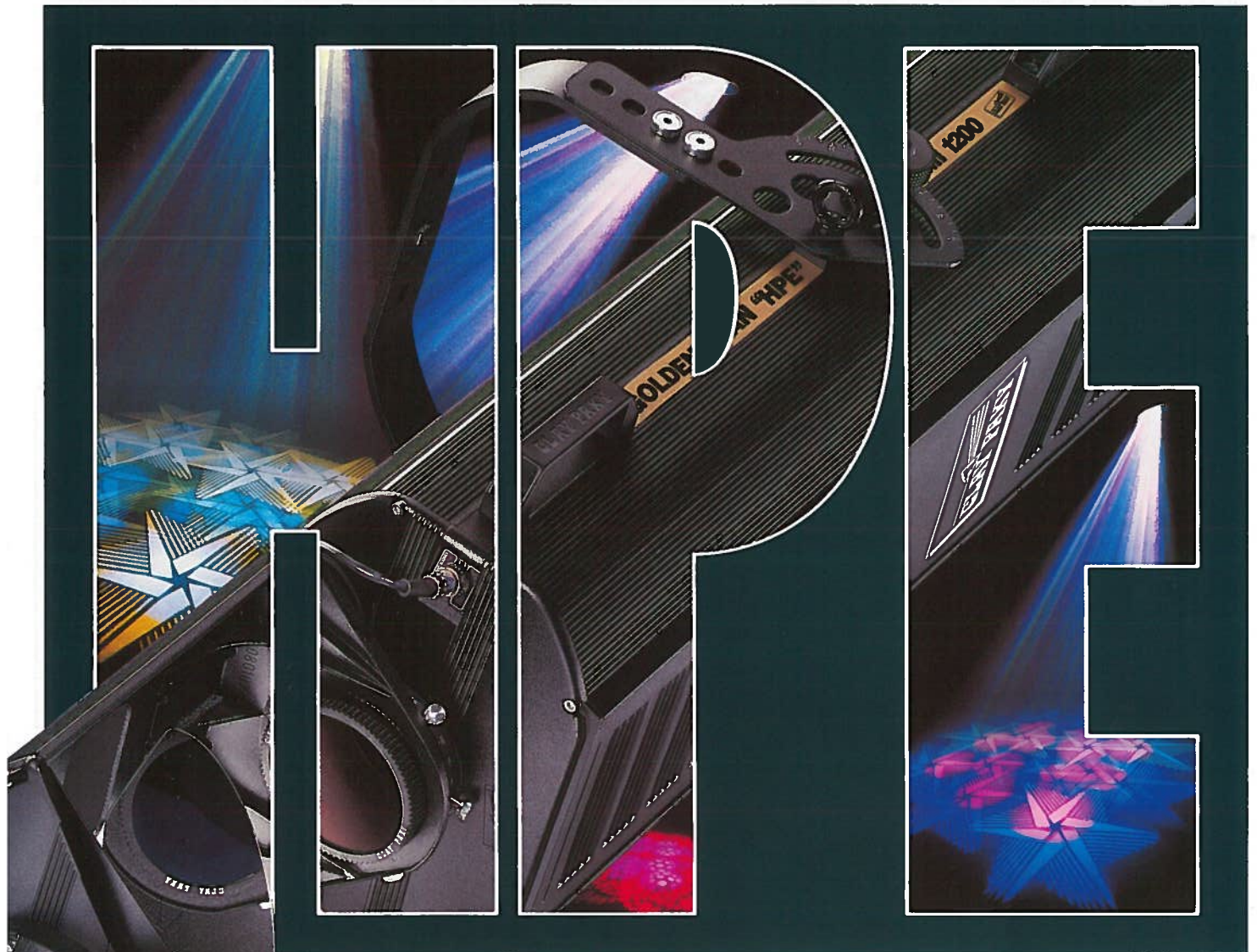
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LRI Installations

Leisure Resources International have been involved in three notable projects recently. At Harper's nightclub in Guildford, the existing JBL sound system in the main club area was upgraded with the addition of a £40,000 Turbosound Flashlight rig. The downstairs club and stage area was enhanced and time-aligned, using the existing JBL cabinets, but with extra bass bins. In addition to the sound system, Leisure Resources also supplied and installed 16 Martin Professional Robocolor II systems.

The world famous Jongleurs Comedy Club in London chose Leisure Resources to enhance its lighting and sound systems. Despite stiff competition, the contract to refurbish the house and stage lighting control, as well as the rationalisation of the sound system into a more user-friendly format, was awarded to LRI. The work was undertaken over a period of two weeks, while the club was still operating fully.

The popular Cardiff student venue, Terminal 396, has also undergone a lighting refurbishment by LRI, in time for the start of the academic year. The scheme includes concentric Bi-Lite rings and projection surfaces up to seven metres in diameter, filling a six metre high void. The rig is loaded with 10 new TAS Mini Ultrascan IIs, a TAS Syncro, eight Optikinetics Solar 250 projectors and a host of other generic effects. The whole scheme, of almost 200 channels, is driven by a ShowCAD system, integrated with a Jands Event desk for live work, via MIDI.

The company also carried out the total refurbishment of the electrical installation to meet current regulations and provide the additional 300 amps required.

Cloud One

The Cloud One Group recently completed a major sound installation and reinforcement project at Butlins Somerset World in Minehead, Somerset.

Butlins Ltd, the largest employer of live entertainment in the country, specified a system in the main 2,500 capacity venue suitable for any visiting performer, but asked that it should have the ability to integrate touring equipment as required, with the minimum of disruption. To meet these specifications within a tight budget, the company chose equipment from JBL, EAW, C-Audio and Klark Teknik, amongst others, and complemented these with cabling and monitoring systems designed and built in their Birmingham factory.

Problems arose as a number of pieces of specified equipment were unavailable within the time-scale. However, the season started on schedule, using SAT Systems, provided at no extra charge by Stratford Acoustics, the rental arm of the Cloud One Group, until the specified equipment became available and the installation could be completed. In total, three separate systems were installed by Cloud One. The loudspeakers installation consisted of EAW KF Series, JBL 1350P, 350P and 4726 enclosures and G731 wedge monitors and SAT 218 enclosures.

Amplification was predominantly C-Audio, while Soundcraft, SAT and Allen & Heath control desks were employed.

Busy time for Fisher

Fisher Lighting & Productions recently spent a very busy fortnight, carrying out two major productions in Paris - at the Ritz and the Palace of Versailles, in addition to eight other projects in London and three in Scotland.

The Ritz project involved taking a crew of 45 to the Ritz to create a reception area, install a conference set with full AV facilities (including two live relay rooms) and a complex lighting and sound system, whilst at Versailles, the company providing staging equipment and also supplied the lighting for two bands, as well as overseeing catering and general logistics.

In London, Fisher's projects included the wedding in Kensington of Pink Floyd's Rick Wright, the Krug Champagne Party at the Serpentine and a VIP reception at Sotheby's, while in Scotland, they were involved with the Jackie Stewart Celebrity Golf Challenge at Gleneagles.

Zero 88

The PLASA Yearbook 'The Best of Entertainment Technology 1995/96', contains an error in the entry for Zero 88 Lighting Ltd.

The entry implies that the company's products are aimed solely at the architectural market, whereas it should have read "... the Zero 88 range has been developed to serve the education, amateur/professional theatre, rental and architectural markets."

Our apologies to Zero 88 for this error.



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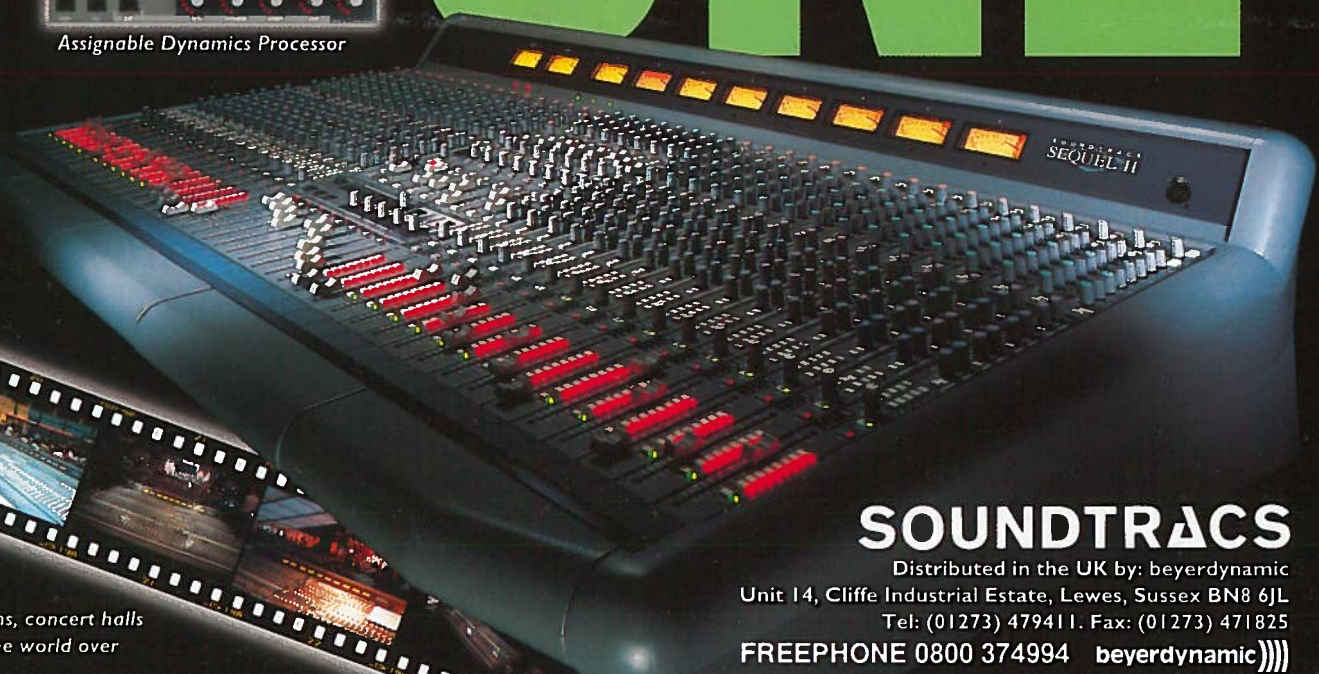
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'the
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Jeux Sans Frontiers, Malta

For the second consecutive time, ITC - Light Sound Vision, were contracted to carry out the lighting for the Jeux Sans Frontiers games which were held in Malta during July. Seven countries participated in this year's games - Italy, Czechoslovakia, Portugal, Hungary, Greece, Switzerland and Malta. The event took place at Fort Manoel Island, situated in the eastern part of Malta. This fortification provides excellent views of Valletta, and this natural scenery inspired Italian lighting director Enzo Ghinazzi, assisted by ITC's Chris Caleja, to enhance the beautiful architecture of the fort with a massive lighting rig, set up on four 20m towers.

ITC, Arri's sole representatives in Malta, joined forces with Bell Lighting, Arri Rental UK and Arriflex, Germany to make the event a very successful one. The lighting rig included 12 9kW Maxi Brutes, 10 Arri 5kW Tungsten lamps, 42 Arri Daylight (4kW and 2.5kW), 36 Mini Cycs, 50 ArriLite 800s and 50 ArriLite 600W clip-ons, all of which was controlled through an Arri Impulse lighting control desk.

Jumbotron Kicks Off

Tottenham Hotspur FC began the soccer season in August with a new addition to their famous ground - a 68 sq.m Sony JTS-35 Jumbotron video screen, which has been installed at White Hart Lane's new South Stand.

The screen is enhanced by additional dot matrix display boards showing time and score, revolving advertising boards and Spur's logo to complete a 25m wide scoreboard. The system features automatic brightness adjustment and built-in self diagnostics. With a significant increase in resolution, it is the first installation of its kind in Europe to use this improved technology.

Video material to be featured on the screens will include a mixture of live close-ups, interviews and pre-match video magazine programmes showing highlights from previous games. The screen is also capable of showing computer generated graphics and textual information.

Boxer Seminars

Boxer Systems, the digital broadcast and post-production specialist, has got its series of summer seminars off to a flying start. The first seminar examined the issues behind data storage technology and looked at the convergence of data and video storage techniques.

The session was presented in conjunction with Ampex, whose products are being distributed by Boxer and was led by Chris Fitton of Ampex. Held in mid August, the second seminar featured a presentation from NVision chief designer Chuck Meyer who covered the AES/EBU standard, looking at ways of getting digital video and audio working together harmoniously.

Rod Allen of Baydel will present the third seminar and will speak about the advantages that RAID has to offer in reducing the risk of hard disk failure and the subsequent loss of material. The seminar will also look at open architecture systems. The date and location will be announced shortly. Other topics for future seminars will include databases, image data management and hierarchical storage management systems.

For further details contact Wendy Stafford at Boxer Systems in St. Albans, telephone (01923) 894141.

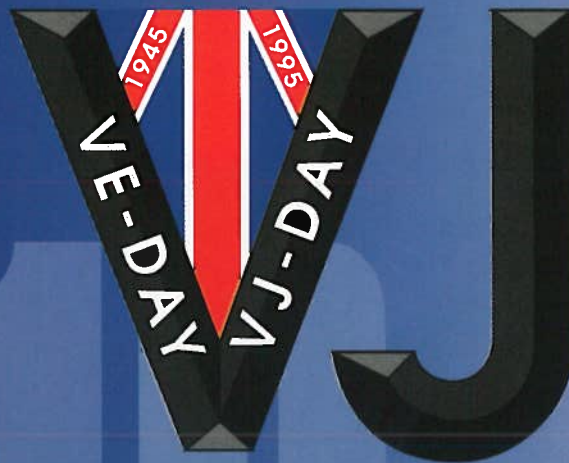
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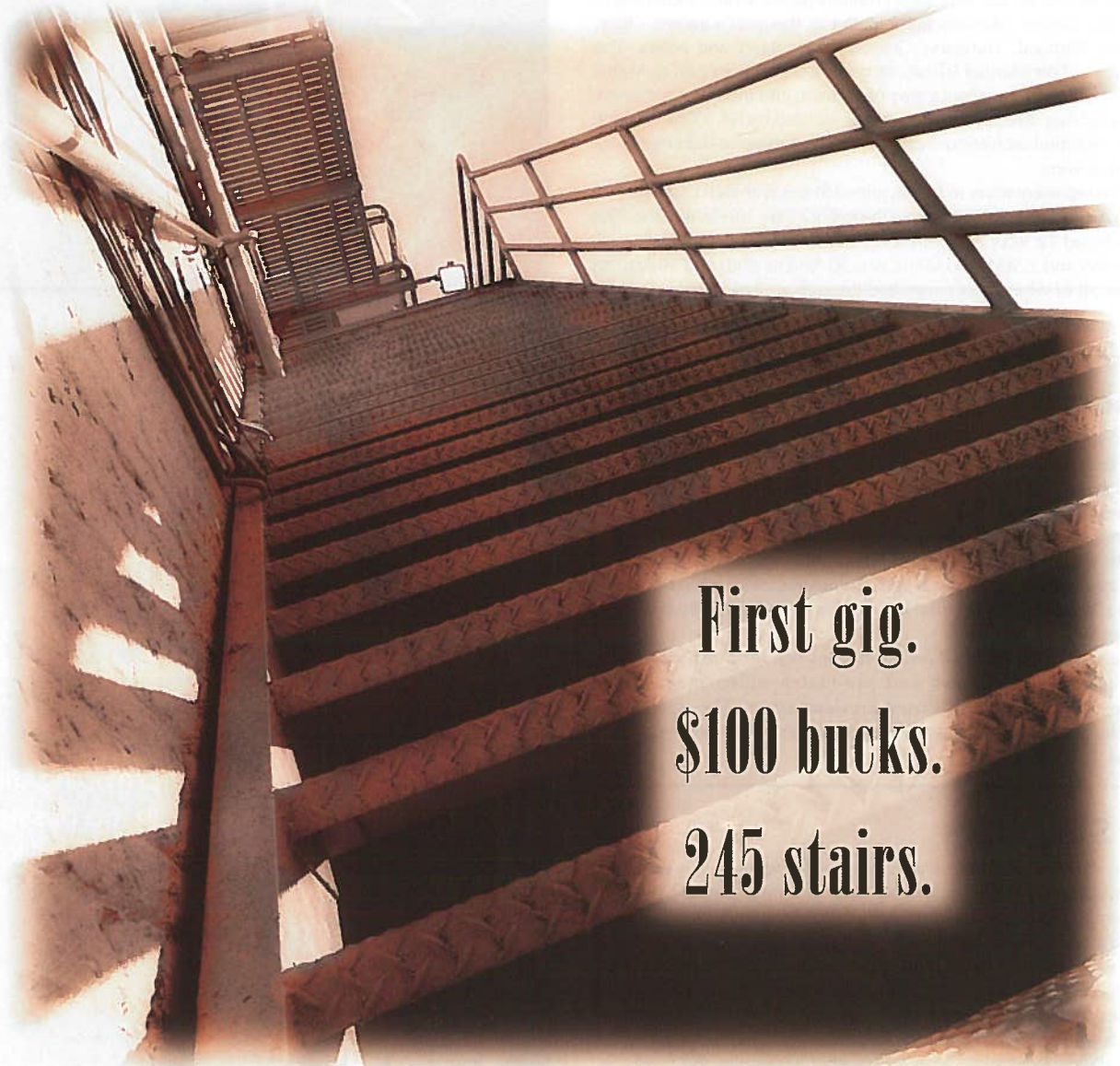
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BSS Honour Distributors

At the recent annual convention of BSS distributors, three companies were given awards for sustained market growth, while one received an award for outstanding product sales. At the convention, held jointly with sister company Turbosound, BSS presented Edge Technology of France with the outstanding product sales award for sales of the Varicurve system.

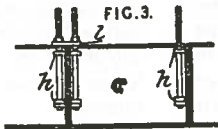
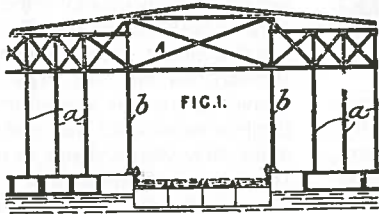
Awards also went to Sound Control of Greece, ATT Audio Controls of Australia and Audio Sales of Austria, for best sustained market growth. BSS sales manager David Haydon told L+S-I: "We usually only make one award, but this year all three companies did so well, we felt that we had to recognise the achievements of all of them."

ONE HUNDRED YEARS AGO THIS MONTH

BRITISH THEATRICAL PATENTS 1801-1900

Intro' to Patent Abridgement 17,653 September 21st, 1895
Carl Georg Rodeck: River dwellings &c

17,652. Rodeck, C. G. Sept. 21.



River dwellings &c.—A number of pontoons, of box like or other form, are connected together by straps *l* to form a floating base, on which a superstructure *A* is built of any convenient shape and supported on columns *a*, *b*, which latter are carried by suitably formed thimbles *h*. Some of the pontoons may be placed below the level of the water to form a reservoir or basin, which may be used as a swimming bath or washing trough, or upon this floating base a building, for use as a theatre, circus, ball-room, or the like, may be erected.

With a subject title such as river dwellings, one is not immediately drawn to this patent expecting to find a great amount of theatrical content. Nevertheless, within its pages are contained a specification for a floating theatre, circus or ballroom. The whole structure is, in fact, a floating pontoon, within which may be created an aquatic arena, which was of course all the rage in 1895. Contemporary theatrical reviews related how elephants descended down water chutes at the London Hippodrome and, believe it or not, there is actually a patent for making elephants turn somersaults! But that will have to wait for another time!

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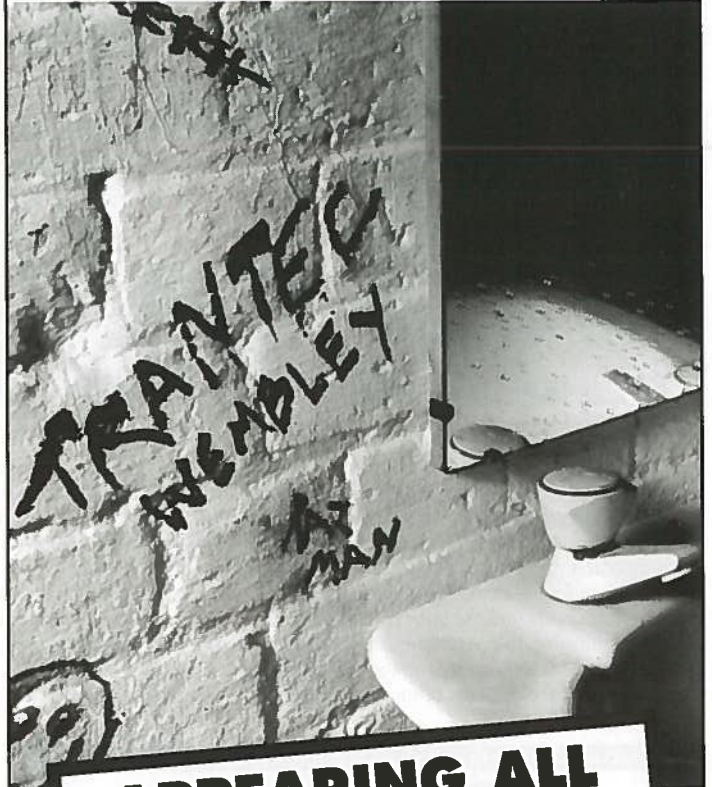
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PLASA's World Wide Web Update . . .



The PLASA Home Page: you can locate the Association at <http://www.plasa.org.uk/plasa/>

The steady growth of PLASA's World Wide Web pages over the last four months has brought with it an increasing degree of response from members and non-members alike, both in the UK and abroad.

The information you can now find on PLASA's Web site includes the complete indices of product names, manufacturers, suppliers and service providers among the Association's growing membership. There's also information about the Association and the benefits of joining, details of

PLASA publications, including subscription forms that can be filled out on screen and sent to the PLASA office immediately via E-mail and information on the forthcoming Light & Sound show, including travel, hotel and ticket information. If you wish to know which member of the PLASA team has responsibility for what, there's 'who's who' page, together with one of the Executive Committee also. One of the main features is the comprehensive listing of both UK

and international members, including contact names and numbers and a brief description of each company's activities. Aside from PLASA itself, there is a list of associated industry Web sites, including the Entertainment Services and Technology Association (ESTA) in New York, Music Maker Publishing's Musician's Net site, the United States Institute of Theatre Technology (USITT) and the VPLT in Germany.

With these sites also providing reciprocal links back to the Association's pages, more and more people around the world are finding their way through to PLASA. Some of these are just 'surfing', yet an increasing amount are working within the industry and are interested in learning more about the Association, or even about joining it - something that can only be to the advantage of all PLASA members.

Besides the business of the entertainment technology industry, there are plenty of other sites - thousands, in fact - that might well interest you. For example, you could quite quickly find your way through to the United States and have a look at the CIA's Web site, which includes an extensive fact-file on every country in the world (not a bad start), or NASA's Web site, where, no doubt, you can find almost as much information as on our, similarly-named, site. You could find out everything you ever wanted to know about the deaths of famous rock stars or aliens crash landing in the New Mexico desert, or perhaps the latest fashions in body piercing. If your tastes do not extend to this, then maybe you could read up on wine tasting, or catch up on the latest sports news from around the world. There is, without doubt, something for everybody on the Internet: the longer you stay away from it, the more you are missing.

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BOOK REVIEWS

EFFECTS FOR THE THEATRE

edited by Graham Walne

A&C Black

ISBN 0-7136-3985-7 - £14.99

Contents (chapter headings): Introduction by Joe Aveline, Scenic and Mechanical Effects by Joe Aveline, Sound Effects by John Leonard, Lighting Effects by Graham Walne, Special Effects by Esquire Jauchem, Cueing by Joe Aveline, Safety by Graham Walne.

Effects for the Theatre is a thoughtful and comprehensive guide for anyone interested in, or involved with, backstage theatre work. Graham Walne has assembled an experienced and authoritative group of professionals to deliver their collected wisdom on each of the above areas. Joe Aveline's introduction gives a picturesque account of the history of theatre effects, highlighting the point that much of what was learned in Shakespeare's time is relevant today.

His chapter on Scenic and Mechanical Effects gives a thorough coverage of equipment and techniques involved with various common effects. He explains, with the aid of photographs and diagrams, methods such as tripping and tumbling for flown or suspended objects, types of gauze and possible effects, techniques for moving, painting, texturing and distressing scenery, as well as effects such as rain, thunder runs and vamps.

The more technologically complex world of sound effects is dealt with by John Leonard. Areas covered here include sound design, recording and playback, DAT, cart and MiniDisc equipment, relay equipment, location and studio recording. In dealing with studio techniques, he looks at looping, speed variation, echo and reverberation, compression and equalisation. Also covered are the Vision software package and Richmond Stage Design's Stage Manager package.

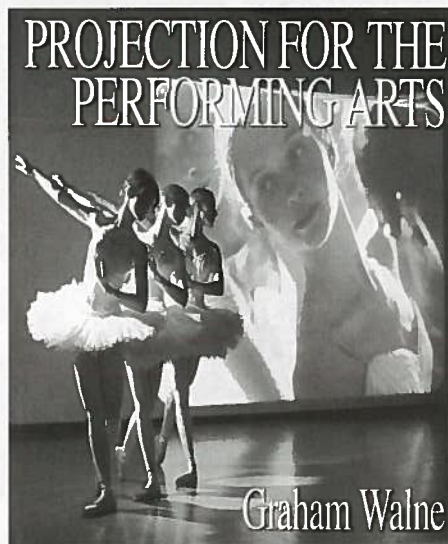
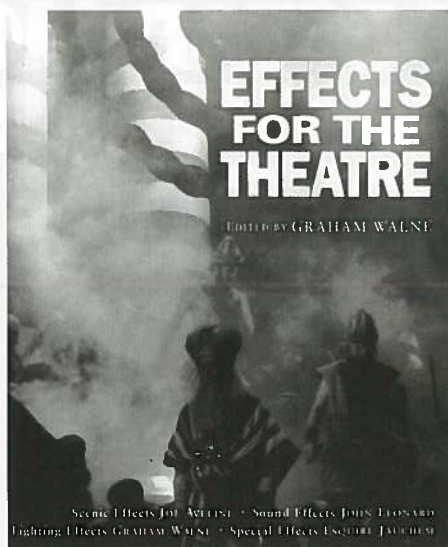
Graham Walne's own study of lighting effects gives a good background knowledge of the skills and techniques involved, including backlight, slide projection, smoke, holograms, fireworks, strobes, practicals, ultra-violet, water effects and lasers. Further reading into more complex areas is suggested where appropriate, as with the other chapters, while diagrams and both monochrome and colour photography is used to illustrate the effects and equipment involved.

Esquire Jauchem, well known for his work with special effects in the States, gives a highly informative look into the more daunting and potentially dangerous of theatre effects, such as torches, bonfires, firestorms, lightning bolts, electric sparks and shooting stars. Safety is a foremost consideration, and the closing chapter of the work underlines this theme, with a good, common-sense guide to ensuring standards are kept at a safe level in all areas of theatre effects.

This book will serve as a very useful guide or reference work, and will undoubtedly stimulate further reading in many areas.

LB

The Corporate Event Services directory has recently been published, offering a reference source for all services related to the events industry. Amongst its 364 pages, it provides comprehensive listings of companies who supply audio-visual equipment, drapes, flooring, set design and build services, staging, lasers, lighting, smoke, pyrotechnics and videowalls. For a copy, contact Showcase Publications in London, telephone 0181-348 2332.



THE AUDIO & HI-FI HANDBOOK

Edited by Ian Sinclair

Butterworth-Heinemann

ISBN 0 7506 24892 - £25.00

Sensibly, the first chapter of this book provides the reader with an overview of acoustics as they apply to the sound industry, setting the scene for techniques and technologies which follow in later chapters. Microphones, loudspeakers, loudspeaker enclosures and headphones all receive detailed treatment in individual chapters. Similarly, the areas of pre-amplification, voltage amplification (including filtering) and power output stages receive plenty of attention.

I was pleased to see a chapter on 'PA and Sound Reinforcement', an area where hi-fi practitioners sometimes come unstuck due to the differing requirements of PA and hi-fi systems. This is a book that will appeal to anyone who is a newcomer to the audio industry, it doesn't set out to be a definitive reference book, but it does stimulate the 'little grey cells'.

Doug Edworthy

PROJECTION FOR THE PERFORMING ARTS

Graham Walne

Focal Press

ISBN 0-240-51390-8 - £25.00

Contents (chapter headings): The Developments in Scenic Projection, The Equipment, Planning, Scenic Projection, Moving Projections, plus bibliography, glossary, technical data and useful addresses.

Graham Walne states in the introduction to this book that in recent times "the phrase 'We're going to do it with projection' has been enough to strike simultaneous excitement and terror into the hearts of theatre people. Excitement, because projected scenery has a unique quality . . . and terror, because few people really understand how it works."

If this strikes a chord with you, then this book could be the cure for those pangs of fear, whether you are working with live theatre, ballet, television or outdoor events. Here, Graham Walne conducts a thoroughly informative and readable tour through the world of projection, from the earliest formal projection system, dating from mid-seventeenth century Rome, through to intelligent lighting systems, TV and film projection and three-dimensional images. Landmark inventions in the development of projection are noted, such as the advent of the Magic Lantern, the double-condenser lens system at the end of the eighteenth century, the first use of limelight during the nineteenth century and the eventual appearance of companies such as Strand Electric and Ludwig Pani in the twentieth.

The author includes, in the chapter on Scenic Projection, references to productions that have been notable for their use of projection, including David Pomeranz's *Little Tramp*, *Tobermory* at the Royal Academy of Music (which the author was responsible for), Mike Batt's *The Hunting of the Snark* and Harvey Goldsmith's *The Planets*. Also discussed are notable practitioners of the art of projection - Robert Ornbo, Patrick Robertson, Leni Schwendinger and Andrea Arden Penn - along with examples of their work.

In the chapter on Moving Projection, the author begins by offering examples of the kinds of effects available, such as image scrollers, rotating disks and filmstrips, before going on to a detailed overview of the equipment and techniques concerned with film and television projection.

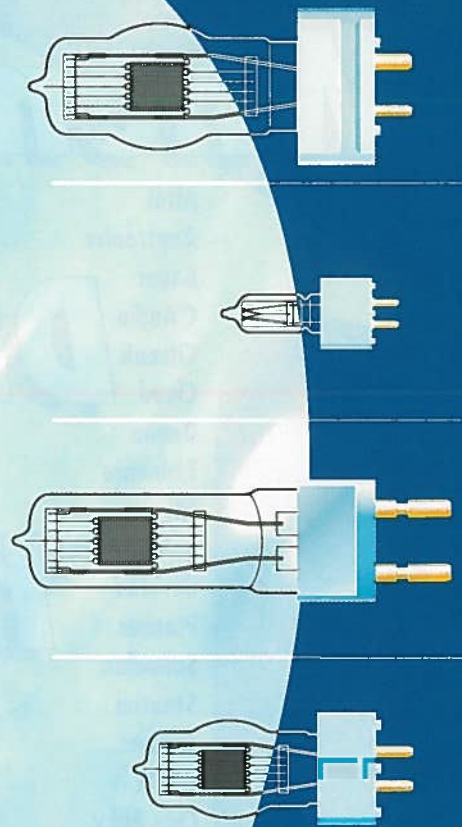
The technical aspects of the use of projection are thoroughly explained: various types of lamp are discussed, along with colour temperature and relevant dimming techniques; the physics behind Fresnel, compound, condenser and prism lenses is explained; photometry, beam angles, equations, spill control, slides and surtitles are all dealt with in a clear and informative style that makes this book a valuable work of reference for anyone working with projection, whether in an amateur or professional capacity. The book is well illustrated, with diagrams and photographs, and the glossary of terms and the appendix of technical data are a very useful complement to the title.

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BUILDING CASTLES IN SPAIN

Tony Gottelier visits Port Aventura,
Tussaud's new fantasy land near Barcelona

Once upon a time there was a magic kingdom called Lalaland in a far away country in the West in which animals were the superior race. In fact, the king of this country was a mouse, known as King Mickey and his chancellor was a certain Mr. D. Duck. One day the Chancellor and his king decided that they would create a series of enchanted forests in which his people could live in utopian surroundings while persuading human beings, who lived in the adjacent kingdoms, to come to the enchanted forests to play or be scared out of their wits if they so wished.

But the very artful part of the plan was that they believed that the humans would pay a great deal of money for the privilege of visiting the forest. However, not everybody agreed with this ambitious scheme. For example, the magician to the court, whose name was Merlin, was heard muttering in his long white beard at the time: "If they get away with that, I'll eat my hat!" But eat it he had to (and that was no joke, as it is well known that a wizard's hat is at least one metre in length), for the enchanted forests were so successful that it wasn't long before the mighty Mouse's ambitions knew no bounds.

"Let's export our enchanted forests to the far countries across the great oceans," said King Mickey. "And we will get even richer." Not only that, I'm sure we can get the governments of those countries to give us a shed load of money towards the cost of planting the forests," quacked his conniving Chancellor. Since, when the Mouse stamps his foot, everyone jumps, envoys were sent out immediately to all the countries across the great oceans to the East to see if any of them would pay the ransom demanded to have an enchanted forest of their own.

Before long, galleons, called junks, and flying elephants, called Jumbos, full of money and promissory notes (junk bonds?) started arriving in the magic kingdom from a far away land called The Land of the Rising Sun who said that they had a yen to have their own enchanted forest. And once again the magic kingdom prospered even more. Not only that, but the readiness with which their new subjects swallowed the culture of the Mouse astounded even the Rising Suns, who were normally very clever at taking other people's ideas, improving on them and then selling them back the improved version. Which was how they earned the money to pay the ransom in the first place.

And everybody said, "This puts a whole new slant on making a fast buck, or even a yen (for so was their currency called). Let's try it again somewhere else."

So once again, the messengers were sent out, and this time word came back from the Land of



The Polynesian review on the open-air arena.

Frogs, which is in the Northern hemisphere in a continent called Europa, where the people's sole idea of fun was building artificial mountains and lakes out of food and drink, because they grew so much they didn't know what else to do with it. "We've got a ton of land near our capital that's not doing much, other than contributing to those mountains of food, of which we are getting heartily sick," said the head Frog. "The only problem is, frankly it's a bit cold and wet up there and what's more, we

abhor your cultural imperialism. But if we give you an even bigger shed load of money, will you come and grow one of your enchanted forests here?" And they got their spinners of spells to weave a golden web which they wrapped up in fine tissue and placed inside a magnificent treasure chest which they despatched by DHL to Mouse headquarters.

When the Mouse and his Chancellor opened the treasure chest that accompanied the Frog's begging letter, they were so spellbound by the riches they found inside, that they quite lost the thread, and the trap was sprung.

And it so happened that the Land of Bulls, which is much further south and which is also known as the Land of Perpetual Sun, was also interested in having its own enchanted park. They also had a great deal of money which they made from a special trick which they had developed which turns people into grilled lobsters for short periods each year. Once again, it never ceases to amaze, what these human people endure in the attainment of what they call 'fun'. Millions of them queue up for hours at depots (which they call airports) each year, for the privilege of being herded together in a metal tube to be transported to the Land of Bulls for the annual grilling. But the Mouse said to the people from the Land of the Bulls: "Get lost, for I shall make a deal with the Frogs, whose food and booze is a great deal better than yours anyway!"

And so it came to pass that several years later the new enchanted park in the Land of the Frogs opened with a bang and a great deal of

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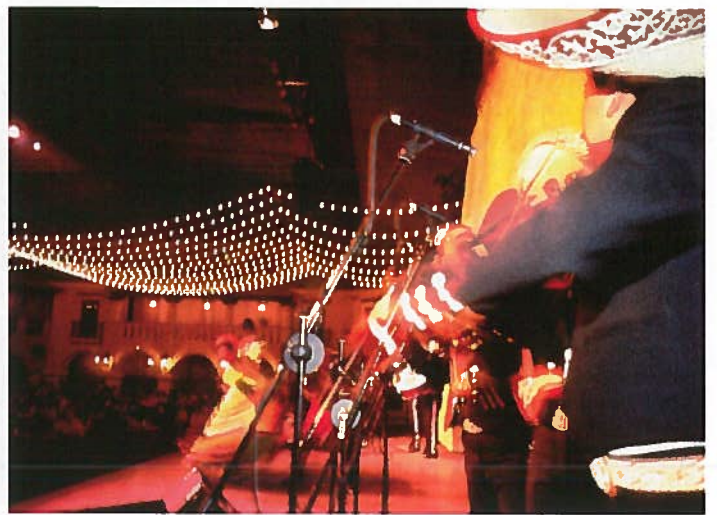
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The white light festoons in La Cantina.

ballyhoo. But surprise, surprise, on this occasion it was not the big success that everyone had predicted. The local people saying, "away with you, you cultural imperialist Mice". Just when the Mouse was about to lose his royal shirt, he remembered the golden web and, opening the box, spoke inside thus, "Oh genie of the web, save my bacon and find me a fine Arab Prince who will shower me once again with riches and get me off the proverbial hook with my stockholders." Through a cloud of theatrical fog came a voice which boomed, "Your wish is my command, oh Mighty Mouse!"

And lo, an Arab Prince appeared on a flying carpet and handed over countless millions of ducats enabling the Mouse to persuade the Bankers, who by now were clamouring at the gates of his castle, to back off. With the spare change, of several tens of millions, he planned to build a monumental dark-ride called Space Mountain, and cut the entry prices to the bone, thus ensuring a full house most days of the week. And so it came to pass. Mighty King Mickey went off on a new campaign which further endeared him to his stockholders and it is assumed that they will all live happily ever after.

Meanwhile, in the Land of the Bulls where the sun never ceases to shine, things were stirring. A wise lord whose castle was made entirely from wax, but who occupied territory in the North and who had already built

enchanted forests of his own there, said to himself: "I think King Mickey has made a mistake here. I know a place in the south where the temperature averages 17 degs C and it hardly ever rains, and better yet a place where 20 million lobsters go every year. If we could get just a percentage of those to off-load their dosh onto us, we could get very rich indeed. We just need a place to create our enchanted forest."

So, the wise Wax Lord called his emissaries and said to them: "Go to the land of the Bulls and find me a place where I may build my park somewhere adjacent to the city of the 20 million lobsters. But this will not be an invasion, try and find someone locally with whom we can make a strategic alliance."

In the town of Salou which is only 100 kilometres south of Barcelona, for so the city was called, on the coast called Costa Dorada, and an afternoon's drive from the Costa Brava (or as the lobsters jokingly called it themselves, the Costa Packetta), the wise Wax Lord found exactly what he was looking for. An enchanted forest already half completed, lacking only the money to get it finished. Furthermore, the Westerners who had come to the Land of the Bulls to make the park were only too happy to return whence they came, keeping only a slice of the action. "Perfect," said the King as he sat down on his favourite iron ride, called Nemesis, for an afternoon of death-defying thrills at one of his other parks called Alton

Towers. "Now maybe we can show that King Mickey a thing or two!"

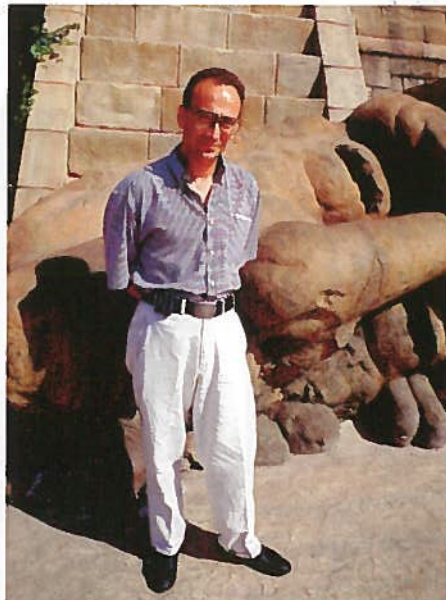
At this point we leave this fairy-tale fantasy world and return to normality. Or do we? Because here I am at Port Aventura, which is Madame Tussauds' new £250 million theme park which they have built with their American partners, Anheuser Busch, and which Tussauds now operate on behalf of the four financial partners of which they themselves are the 40% shareholders. And Port Aventura is, without doubt, another world, a fantastic adventure in five themed continents, as well as a journey in time, though I am quite sure that the financial expectations are no fantasy whatsoever. 2.5 million visitors are expected in the first year alone!

I must say my heart sank when I heard that here was another American-designed theme park based on world geography, which seems to me to be such a cop-out and a direct derivative of the startling fact that only 10% of Americans have passports. Which must mean that many of them do their world travelling in an afternoon at theme parks such as EPCOT or at Expos.

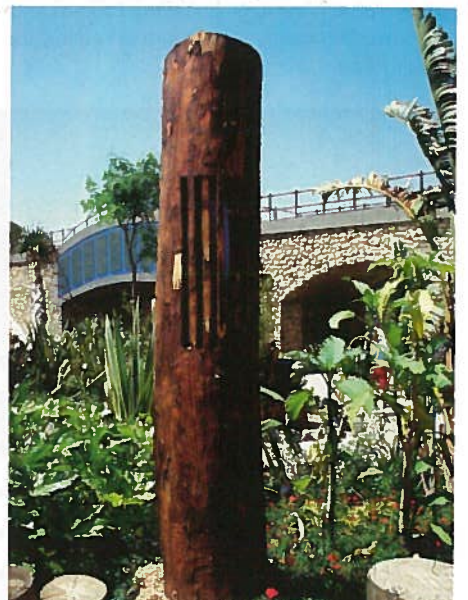
In fact, Port Aventura is nothing like the Expo national pavilion experience so recently provided in Seville. No, the allusions to parts of the globe are purely illusory, an ingenious combination of fantasy, fact and flavour and in some cases a snapshot of a past or legendary era - simply scenery for a giant set, on 115



A typical amp rack.



Carlos Arista, technical manager.



Phil Pike's upturned florry-in-a-log light.

hectares of land in which the visitors are the players. And in all that sunshine, it is totally infectious.

There are five exotic lands in the 'other world' of Port Aventura: China, Mediterranean, Mexico, Polynesia, and the Far West (or what we call the Wild West). Just as an example, China is symbolised by the park's trademark iron ride - called Dragon Khan, whose snaking metal limbs dominate the entire site. The pumped up son of Nemesis is a positive wimp by comparison to this 45 metre high, 1,285 metres long, roller coaster which corkscrews its riders up and around its eight loops at speeds of over 110 kilometres per hour.

On the other end of the scale there is a ride based on spinning tea cups and six other rides in between. We are supposed to be in China in the year 1100 as we enter along the Great Wall re-treading the steps of Marco Polo.

Polynesia is set in the time of Captain Cook, Mexico with mixed references of Mayan and Spanish colonial, while in the West we are in the Western town of Penitence on the 4th of July 1876, on the eve of the first Centennial of the USA.

There are 30 rides across the park, excluding the panoramic steam train, and all of this is a great excuse for creating nine different shows, with nine different performance spaces. It would get tedious to cover them all, so we have selected just three. But before that let's just look at some of the park-wide facilities.

There are approximately 900 lights, most of these practicals disguised as other things. I especially liked the simple wheeze of burying a florry in an upturned log, for which my guide Phil Pike (head of AV at Tussauds) claims responsibility. The speakers are a mixture of Omnispeakers (planted in the ground), Rockustics (planted in stones), or JBL, flown in the air. All speaker lines are fibre optic, at a cost five times the conventional, but on an outdoor installation this size, whose counting? And it does increase the control possibilities. Otherwise, theatre technology is largely represented by ADB, who carried off the order for most of the lanterns and lighting control, James Thomas for rigging and the Parcans and, of course, JBL again, with Soundcraft getting the mixer prize.



Sound control for the Western Stunt Show.

Port Aventura have sensibly picked up on the success which the Expo showground in Seville had in creating a microclimate, and are using a Mee Fog mist system for the dual purpose also of an outdoor special effect. (Shouldn't it be called the MeeMister?) Of course, there are also numerous water rides, including the 'Grand Canyon Rapids' and 'Tutiku Splash', where nobody gives a toss if they get soaked from head to foot. The large expanses of water throughout add greatly to the general atmosphere. (In fact, Phil Pike has ambitious plans for a lake show next season, on the site of the 'Mediterranean' lake, which should enable the park to benefit greatly from additional late night revenues, and will form the only performance 'stage' in that zone.)

The live stuff starts at street level, where little vignettes and photo opportunities occur all over the place from mobile platforms, such as a covered wagon pulled by a randy horse which appears regularly in Penitence

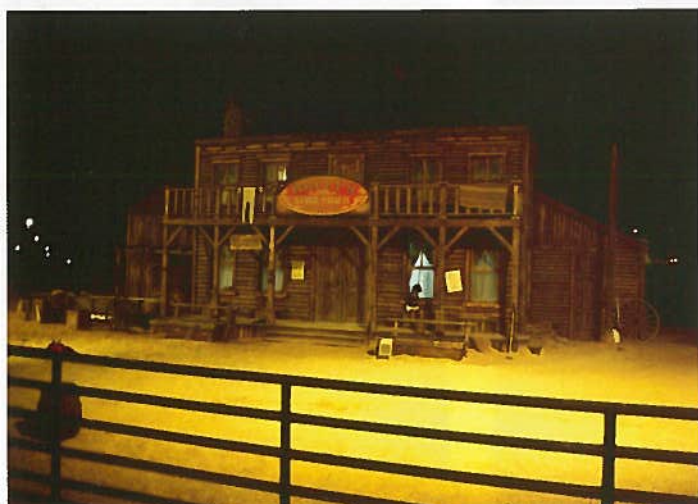
apparently, selling the latest inventions and household gadgets 'street-to-street'. In total 46 performers contribute to this sort of excitement on the streets.

While we are in the Wild West, there are three performance stages, one in the very popular saloon is a slightly jazzed up, but otherwise typical musical and dance performance of the period, then there's a live Country and Western band in the Barbecue restaurant, and the 1,100 capacity Western Stunt Show.

This takes place in a typical timber-constructed rodeo type arena and is a live stunt show similar to the one which we have previously covered at Universal in Orlando. In fact the producers are the same firm, Mitziger and Company Productions from Burbank, California. The lighting for the show is run through an ADB Tenor 240-channel memory desk through their Memopack digital dimmer packs to a series of lighting instruments from Pars, to 2k DS204 profiles, 1k DS104s, CH50 Fresnels and ACV. 1001 cyc lights. I counted 72 channels of dimming to 120 lighting circuits and instruments.

For sound the main mixer is a Soundcraft Delta SR 16/4/2, feeding two Tascam DA-60 DAT machines and a CD-401, as well as 122 MkIIIs also from Tascam, via Klark-Teknik DN-300 eqs and JBL MPA-1100 and 600 amps to nine JBL 4731A hung from the underside of the roof canopy directed at the audience below, which are the main show PA speakers. The delay is a Klark-Teknik DN-716. On the set, a Dynamax DCR 1020 digital sound store is fed to a mixture of JBL 4731s, 4730s and Control 1s, via White 4675 eqs for directional SFX. The radio mic system is all Sennheiser, the paging is Philips and coms are by Clear-Com. Apart from that it's all a matter of pyrotechnics.

In Polynesia, there is a live bird show, and a rigorous open-air display of dancing from the islands of the South Pacific, with live accompaniment - much like the All Blacks pre-match grunt and groan display - perhaps most notable from a lighting point of view for the two Teatro followspot towers which are used during the Samoan dances of fire which take place at night.



The stage post set for the Western Stunt Show.



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Total inversion: China is symbolised by the park's trademark iron ride. Called Dragon Khan, whose snaking metal limbs dominate the entire site, this pumped up son of Nemesis (a positive wimp by comparison), 45 metres high and 1,285 metres long, roller coaster corkscrews its riders up and around its eight loops at speeds of over 110 kilometres per hour.

The mysterious Orient is the location for two theatrical performances. The first, under the direction of American Mark Wilson in the 1,190 capacity Imperial Theatre, is performed by Chinese acrobats from the official government agency and lasts about 25 minutes. The other, in the Templo Magico which seats 450, is a spectacular black-light performance using the black magic of the UV and velvet combination both to hide and reveal, and to also bring brilliantly alive a range of luminescent coloured materials in the shapes of exotic birds, Oriental Carp (karapoi), Chinese fans, kites and New Year paper dragons. I thought that this was an excellent show, much enjoyed by the audience.

Designed by Alejandro Zucchi, the entire show is held together by a single actor, a Chinese wizard (not Merlin!), which means that there are a further nine velvet-clad individuals lurking in the shadows creating the animations. Surprisingly, this is pulled off using only 60 double 1.2m long 40W quick-start blacklight florries, some hung vertically in three tiers, and

no dimmable ballasts, not a Wildfire in sight! The conventional theatre instruments are over the stage on three pipes and two more FOH, the instruments themselves consist of 27 1k profiles in two beam configurations, 14 1k Fresnels, seven PCs and 22 1k asymmetric floods all from ADB. There are more 500W floods, which seem to be Coemar 500 ALs and UV battens concealed in the side walls of the auditorium. There are over 200 lighting circuits into 36 dimmer channels. The lighting board is another ADB Tenor and the dimmers are their Memopacks.

The sound system in Templo Magico (or Jing Chou Temple), by EAR Pro of Barcelona, is extremely well documented and consists of the main PA from a Soundcraft Delta through Klark-Teknik DN360 eq and two JBL ES52000 controllers to three JBL MPA 1100 amps and out to two JBL 4893 and two pairs of 4892s. Side-fills are two 1350Ps via MPA 750 and White 4675 eq. Monitors are SR4704As.

The paging system is Philips to JBL Control 1s and Clear-Com for headset coms.

A short walk from the Orient and, hey presto, you are in old Mexico where there is a cinema called the Maya Theatre, heavily disguised as a sort of Inca Temple, but despite all Phil Pike's best efforts, we never seemed to get beyond the cool lobby with its simulated braziers (courtesy of LT flicker candles) and central well, which was making a profit all on its own. I believe, however that it shows a 70mm movie.

There is no doubt that the most popular attraction in Mexico is the Cantina where 1000 people can sit down at refectory tables and eat Mexican food and drink Mexican beer while watching authentic Mariachis, a 10-piece Mexican band and six folk dancers who perform on a small stage, cabaret style.

They do five sittings daily and the show lasts about 20 minutes and is hugely successful with the visitors partly, I assume, because Mexico represents the New World to the average Spaniard,

rather more than the United States which displays a much more Anglo Saxon face.

One of the nicest features of this great eating hall are the festoons of white bulbs looped overhead throughout the space, giving it an indoor-outdoor feel, while also conveying something which seems architectural in the sense of place and period. The stage lighting is again controlled by ADB and largely consists of 34 C-101 PCs, 26 assorted profiles, 20 1k floods, all by ADB. There are 16 Neithammer HPZ 112 1k profiles with gobos, and two Coemar 1.2k followspots. The control point and the followspots are located in a convenient gallery which surrounds the room.

The sound, again by EAR Pro, is Soundcraft and JBL with both White 4675 and various Klark-Teknik eqs in between. The band's microphones are a mixture of AKG CK93s for the violins, Shure Beta 57 for trumpets, Beta 58s for voice and 87s for ambient, whilst the guitars have Sennheiser 421s. Clear-Com and Philips again round up the roster.

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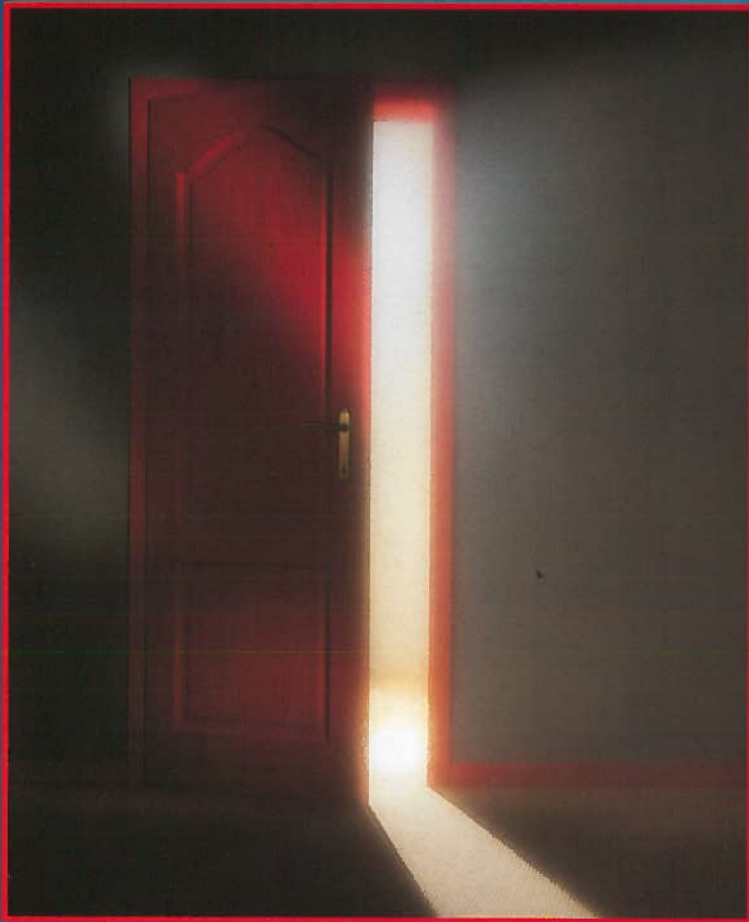


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the park, maintaining everything in good order and keeping the show producers happy is the task of technical manager Carlos Arista, who appears to be a remarkably calm and cheerful individual for one with such a strenuous job specification.

In fact, Port Aventura needs 780 employees to make it work and the forecasts for consumption of comestibles during a single season are absolutely staggering. All the staff wear uniform and this in itself created a little industry all on its own, with 15,000 costumes produced in 100 different styles to suit the purpose - added to which there are 4,500 hats and 500 pairs of shoes. The mind boggles! Designed by Gemma Sender in Barcelona they were produced under the direction of production director Teresa Escude who kept a close eye on practicality.

Interestingly, wardrobe director Lluisa Gascon revealed that: "These costumes take us into the world to which they belong, but without there being any feeling of dressing up or of looking ridiculous." On reflection, I thought this a very telling remark, because the whole thrust of Port Aventura is that it is a very grown-up theme park indeed. By that I don't mean that it won't appeal to kids, far from it, but rather that it is a real family experience in a much more European tradition, somehow. There are no cartoon characters to be found anywhere.

Instead, for example, there are craftsmen all over the place making things in front of the public gaze in the style and tradition appropriate to the area in question. This, and the little street performances, together with the excellent scenery, reinforces the various themes in a very personal way while creating an infectious festive atmosphere. If I had young family I would certainly go back. To hell with it - I'd go back anyway, even without the excuse.

There was only one small negative: the signage was somewhat obscure so it could be difficult on occasions to know what was going on, and it was certainly a challenge to find the times of the shows. But then, that was one of the things Phil Pike was there to survey prior to proposing a fix. And come on, if you're on holiday that sort of IQ-test could all be part of the fun



A practical at work in the stone lobby of Maya cinema. The flicker is courtesy of Lighting Technology.

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FLYING TO THE WEST END

Robert Halliday discovers how DMW Greer's new play, Burning Blue, has settled into the Theatre Royal Haymarket

London's fringe theatres are now probably the strongest breeding ground for new theatre in Britain. In any month, tens of new productions will appear: old plays, devised pieces, and new written work all usually featuring casts that you haven't (yet) heard of. Some of the work is lousy. Some of it is very good. And just occasionally, one catches the public's interest enough to let it make the jump into the bigger world of the West End.

Burning Blue is such a play. Written by American author D.M.W Greer, and directed by fellow countryman John Hickock, the play premiered at the Kings Head Theatre earlier in the year, and met with critical acclaim. This brought it to the attention of producer Robert Fox, who has a strong record for bringing new productions to the West End from shows such as *Anyone for Denis?* and *Another Country*, the play which introduced London audiences to Rupert Everett, Kenneth Branagh, Daniel Day-Lewis and Colin Firth.

The show had also excited one member of its Kings Head audience: John Napier, the designer responsible for most of the British 'mega musicals' from *Cats* onwards, but also an associate designer at the Royal Shakespeare Company. As Robert Fox started to piece together his West End production, now bound for the Theatre Royal Haymarket, Napier was appointed as the show's designer - and, after a long lunch, persuaded lighting designer David Hersey to come on board as well.

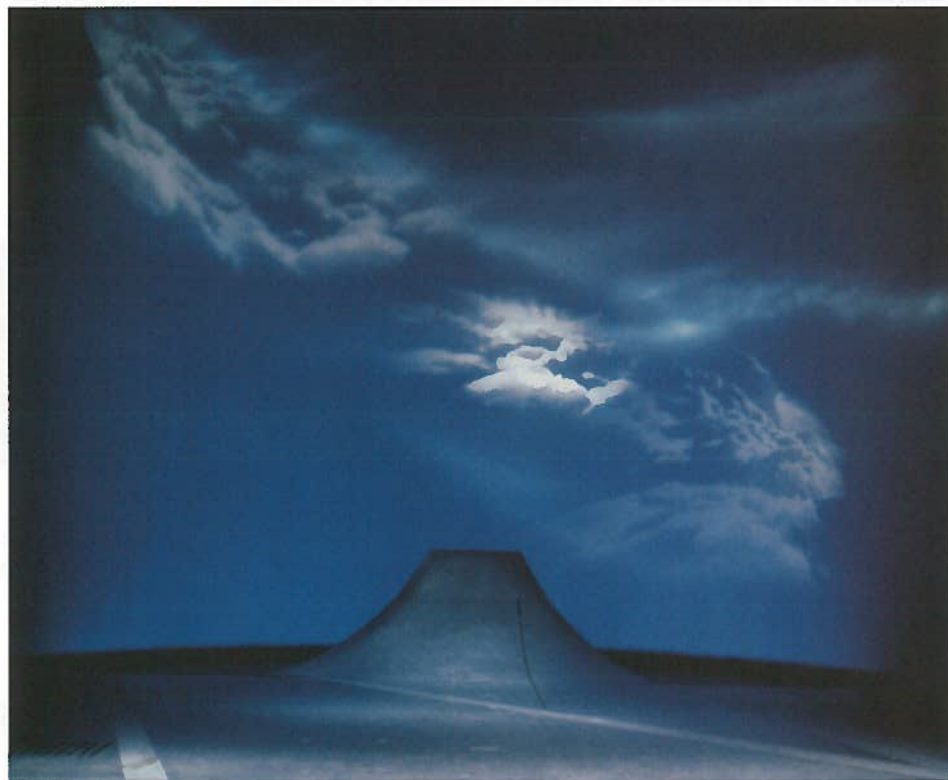
The challenge presented to the two men, and to sound designer Nick Gilpin, was a considerable one. A brief description of the show would be 'Top Gun on stage', though with a stronger storyline! The plot concerns the gay 'witch-hunts' taking place in the American military at the moment; it follows a group of four naval pilots, two of whom discover an attraction to each other. One subsequently dies in a mid-air collision, while the other is hounded out of the navy by the naval intelligence service, his relationship with his other colleagues irreversibly altered by the heavy-handed approach of the investigation. It is a semi-autobiographical story, David Greer himself having been a navy pilot.

From a design viewpoint, the show opens with one of the pilots parachuting onto the stage. It then proceeds through a dizzying range of locations from the crew room, navigation deck and launch-pad of the fictional aircraft carrier Harry S. Truman, to the houses of the pilots, a couple of hotel rooms, a naval intelligence service interview room and a military cemetery, with a quick flight in an FA-18 fighter aircraft thrown in for good measure. And all in a show that has to flow continuously, with no time for long pauses or clunky scene changes.

But, as his musical work shows, this is the kind of challenge that Napier relishes. The difference here, as production manager Roger Neate was careful to explain to every member of his team, was budget. This wasn't a 'mega musical', and something of a back to basics approach would be required from everyone involved. The challenge and limitations combined to lead to a largely standing set



DHA's custom VSFx cloud rotating glass gobos, back-projected from ETC Source Fours, on the set of *Burning Blue*. Tilting mirrors were used to vary the height of the projected clouds.



consisting of a raked stage which closed up upstage into an aircraft carrier runway surrounded by a huge wrap-around cyclorama. The downstage area could be closed off by two sliders painted to resemble the metallic walls of an aircraft carrier, and different settings could be introduced into this area by attaching them to two cross-stage tracks. This was one element of the set where the limited budget was most

obvious; the tracks are driven by manual winches and can't carry every element of a scene.

Where a track is used to bring a table on stage, for example, two members of the stage crew will follow it on to set the chairs around the table. Once set, the crew return to the tightly-packed wings to transfer the scenery for the next section into the appropriate track.

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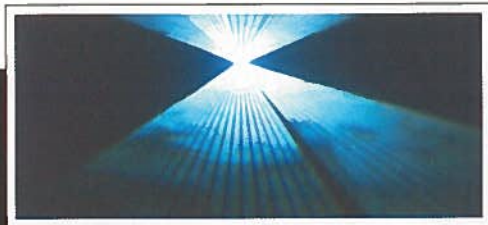
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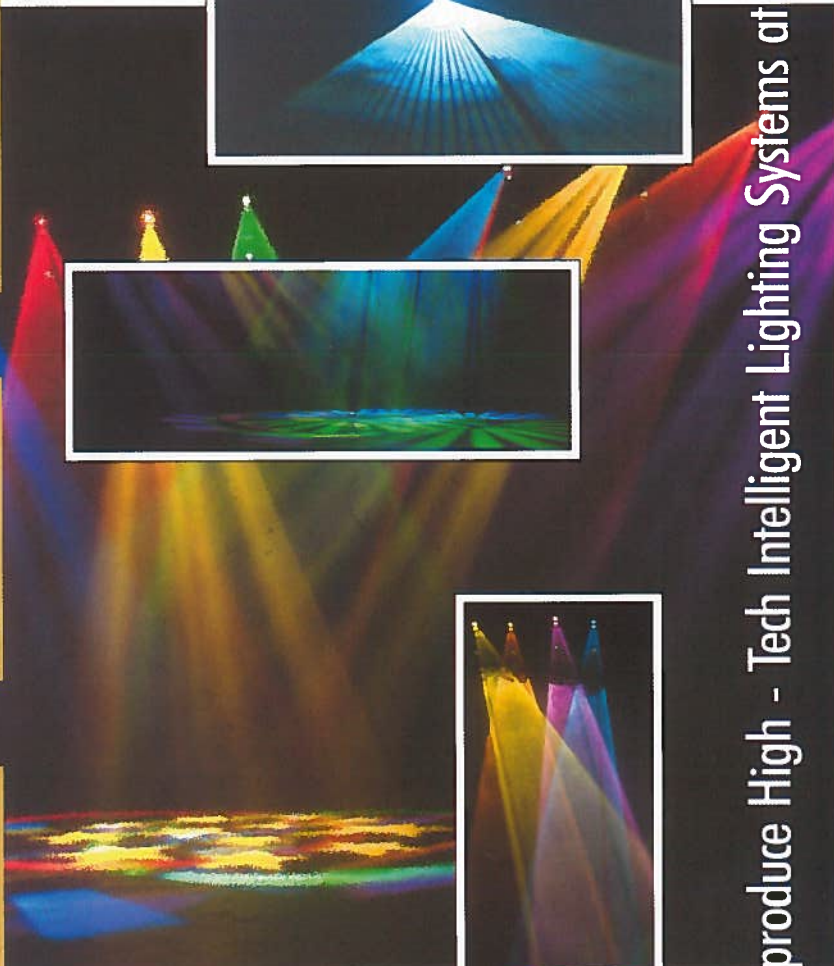
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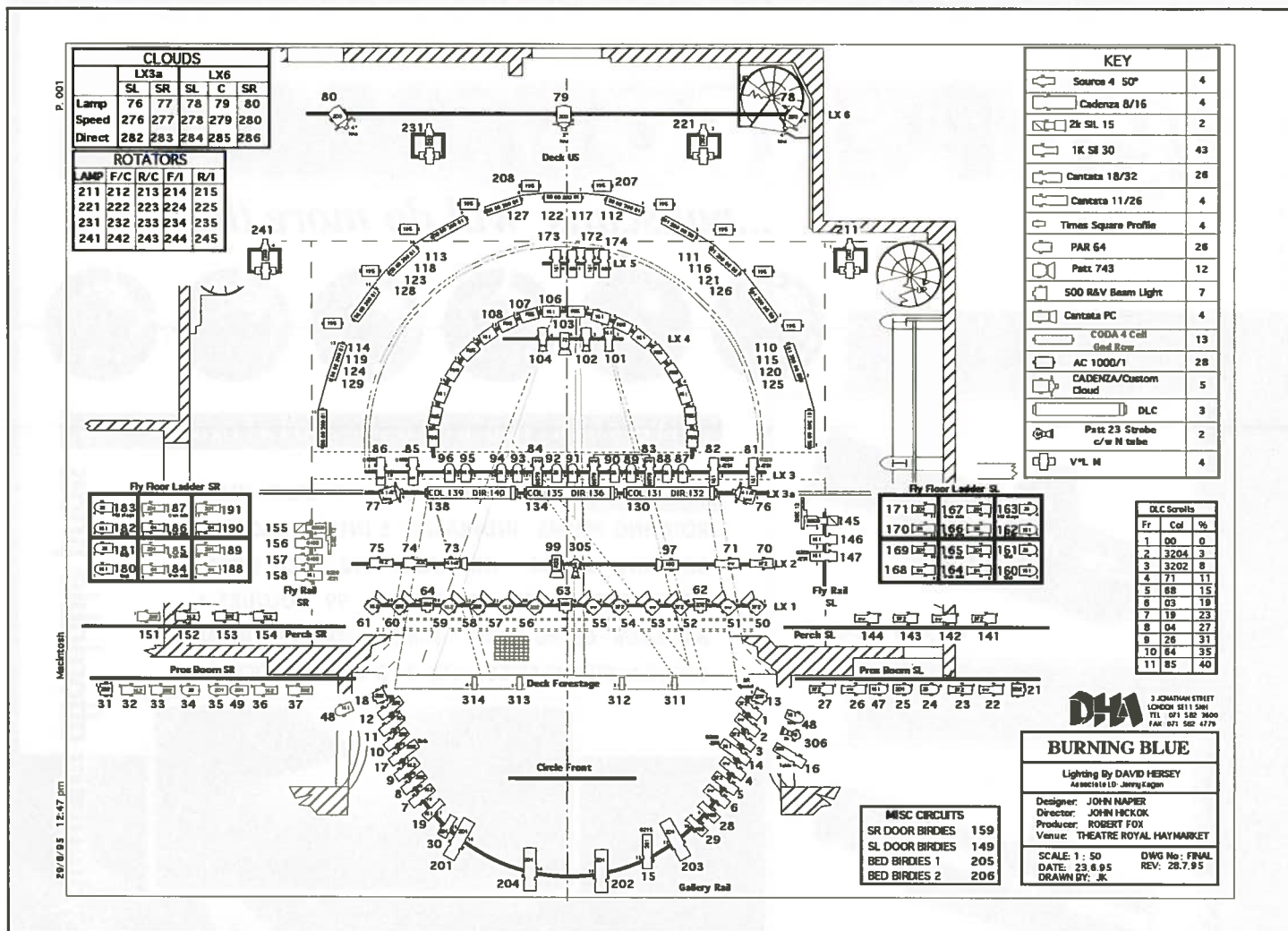
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David Hersey's lighting design for the production.

The other obvious compromise was in the parachute drop which opens the show. In one newspaper interview, it was suggested that the parachutist would descend over the audience's heads. Budget and schedules again ruled this out, and the flying was limited to within the proscenium arch using a conventional counterweighted Kirby's Flying Ballet system familiar from generations of productions of *Peter Pan*, and here operated by the Haymarket's master carpenter, Andy Chelton, and his team. The opening moment is still highly effective, though. A parachute is inflated centre-stage by a 24" fan hidden in the floor. As the 'front cloth' (actually a wooden piece painted as a giant metal wall, which first greets the audience as they take their seats) is flown out, the fan is cut out so that the parachute starts to collapse, and at the same time the actor is flown across the stage, falling as he goes to land stage right.

The illusion is helped, of course, by the lighting, which had to provide a huge range of different looks to the set, while at the same time being limited by budget and, more importantly, by the positions available for rigging. Front-of-house lighting positions were a particular problem. The last time David Hersey worked at the Haymarket, on *Cyrano de Bergerac*, his rig made quite extensive use of the slip positions at the sides of the upper circle. The theatre has been refurbished since then, leaving an absolutely stunning-looking auditorium, complete with real gold leaf and even, bizarrely, mirrors at the sides of the circle - an original feature re-discovered during the refurb. One of the things lost, though, was the circle slip positions, leaving the two pros

booms and the upper circle front lighting bar as the only front of house positions. With the set having a raked floor, and with the mid-stage sliders located quite close to the front edge, the challenge was always going to be lighting faces without leaving too much of a mess on the sliders.

To help overcome this problem, and the gap which had to be left in the overhead rig to accommodate the parachutist's flight, the rig featured a battery of sidelight, with eight Sil 30s and four Parcans per side on ladders, three Cantata profiles and a Sil 15 with animation disk on each fly floor, and both pros and perch booms containing a mixture of Sil 30s, Parcans and R&V 500W beamlights. Overhead, the rig is a mixture of the conventional - Patt 743 1k Fresnels, Sil 30s, Parcan backlights and a few more beamlights as toplight specials - and the new: Digital Light Curtains running from DHA's DMX to LightTalk converter box, and Cadenza EPs lighting VSFx drive units containing the new DHA custom cloud disks.

Upstage of the sliders is a curved bar full of AC1000/1 floods front-lighting the cyc. Upstage of the cyc, an expensive, blue-tinted back-projection material brought into the country by Gerriets for the first time, is a curve of Coda 4 groundrows lighting the bottom of the sky, three more cloud projectors and the equipment for the F-18 flying scene.

This set-up went through several incarnations. The scene has the four pilots on high chairs downstage, and at the King's Head the aerial manoeuvres were all suggested by their movement. Hersey and his associate on the show, Jenny Kagan, felt that something 'bigger' was needed, and proposed movement

on the cyc as a possible solution. If some element, such as clouds, could be made to rotate and move up and down the cyc, the overall effect of the scene would be much stronger.

All of the movement possibilities could have been accommodated by some kind of moving light, but budget, and the fact that the light sources would have to be very close to the cyclorama and therefore very wide, precluded this. Instead, the lighting supplier, White Light, were set looking for four television-type pantographs to provide the up-and-down movement, and DHA's Tad Trylski was charged with solving the rotation problem - or rather, the problem of providing a known starting point for that rotation. In just a few days he had adapted the standard vari-speed gobo rotator to include an indexing option. The rotators were loaded with custom glass cloud gobos, the artwork taken from the cloud image used in the show's poster, and then installed in 2K Sil 60s mounted on the pantographs. These were fitted with long handles to allow them to be moved up and down by the show crew.

This idea nearly worked, but not quite. The pantographs didn't really have enough travel and they didn't move smoothly. Also, it was very hard to get the four crew members to 'fly' in formation. On top of this, the combined heat of the 2k Sils and rough movement of the pantographs didn't do the glass gobos much good.

So, enter version 2, the Vari*Lite VLM: a product devised as a trade-show joke in the moving-head against moving-mirror debate, but providing the perfect solution to the cloud problem on *Burning Blue*. A quick trial showed

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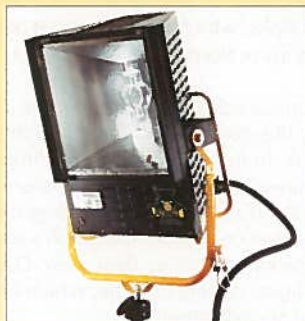
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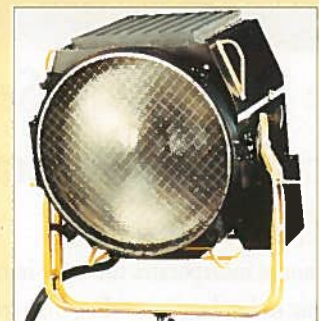
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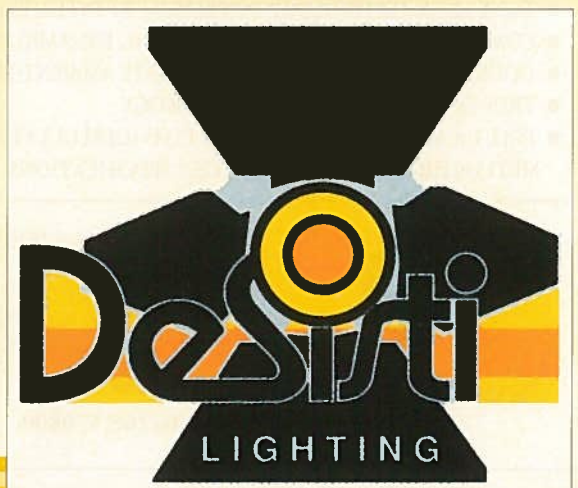


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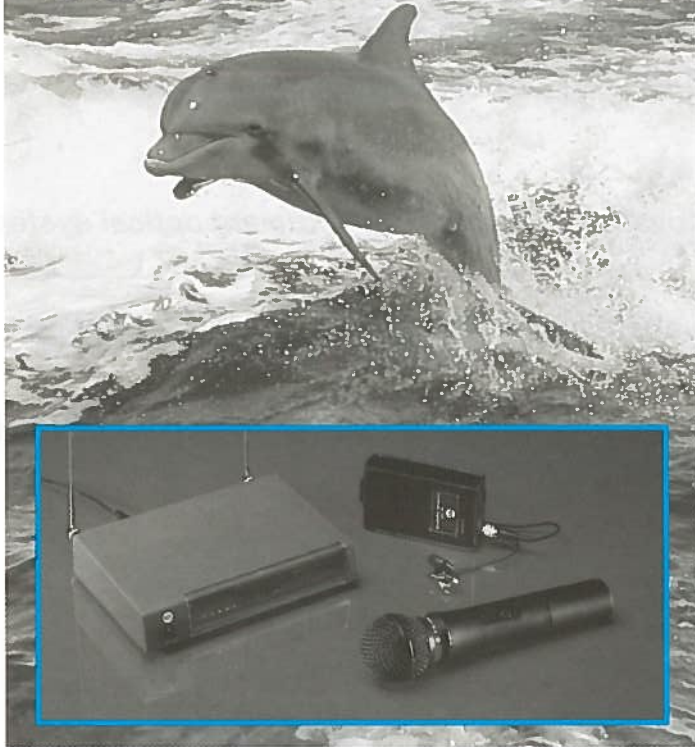
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that the VLMs would do the job and, though they added to the show's lighting budget, it made the effect possible and freed up the stage crew for the next scene change. This only left the problem of which lamp to use instead of the Sils. ETC's Source Four seemed to be the obvious solution - the dichroic mirror giving it a cool beam safe to glass gobos, excellent optics to give definition to the clouds, remarkably bright, and available in a very wide angle version. M&M had the lanterns available, but not the wide lenses - a problem solved, in his usual direct manner, by ETC President Fred Foster.



Part of the Burning Blue cast: left to right - Martin McDougall, Robert Bogue, Antony Edridge and Ian Fitzgibbon.

Already scheduled to travel to the UK for meetings, he simply added the lenses to his hand luggage. This just left Trylski and his team at DHA with the job of converting their indexing rotators to fit the new lamps - a changeover accomplished in one busy day. The set-up now does everything that Kagan, Hersey, and Napier asked of it, and the flying sequence is only limited by the director John Hickok, who never quite overcame his lack of enthusiasm about the sequence. However, the sequence as it currently stands is very effective, and a tribute to the patience and determination of Haymarket chief electrician Steve MacGuire, who had to programme it on the theatre's Gemini 2+ desk. The board had a DMX card added to it for the production, largely to drive the light curtains, but nobody predicted that it would end up controlling a hybrid, 11-parameter per unit moving mirror light; a task the Gemini was never really designed to cope with!

Although slightly frustrated by the limitations imposed by the set and the theatre, Hersey was very satisfied with his 'toys', particularly the DMX-controlled light curtains, which do work surprisingly well, especially when their range of travel is limited, thus giving a higher resolution within the 255-steps of DMX, and the indexing rotators which will no-doubt move into production in due course. But he was most impressed with the new cloud disks, which offer a new set of clouds and will finally allow shows to get away from the overly-familiar fleecy and storm clouds of old.

Rounding off the show's technical side is the indispensable contribution of Nick Gilpin's sound which, like every other element in the show, has to cover a huge range of effects. In this case the range is from pre-show music to music heard over an on-stage radio, music and sound montages for a flashback sequence and, of course, the inevitable range of jet engines and aircraft fly-bys. The effects were created at Autograph's sound studio, and were some of the first produced using their new Digital Audio Research SoundStation Gold digital editing console, which has replaced their hard-working six year old SoundStation II.

In the theatre, the effects are replayed through the 'standard' Autograph rig: Akai sampler and CD-cart machines controlled by Matt Mackenzie's MIDI program feeding into a small Cadac B-type mixer and then out through a rig of Meyer UPA-1B loudspeakers on the pros booms, and USW-1 sub-base units sub-stage and in the stage-left wing. The rig also features some 'reverse fill' loudspeakers - small units mounted above the upper circle but facing towards the stage to give the starting point for the aircraft fly-overs that occur several times, and are run from a joystick-controlled pan-pot in the Cadac. Some budget limitations are obvious in this department as well - radio mics were beyond the budget, so the microphones in the flying sequence have to have their cables paged on-and-off by the crew, for example, but the design as a whole, as operated by Toby Painter, is excellent, the aircraft effects being particularly strong.

None of the technical or design elements overshadow the play, or the performances by a cast largely new to the West End. For a first lay by a new author, the show is a well-balanced mix of the serious message with comic interludes; it well deserves the larger audience that the Haymarket could now potentially afford it, and a good set of reviews and strong word-of-mouth should ensure that is the audience it receives. Unless they decide to wait until the film (the deal for which was announced the day after the show opened) is made, and that would be a shame. Despite its cinematic pretensions, with its huge number of scene changes, the realism, details and special effects that would appeal in a film version could well distract from the story at the play's core. At the Haymarket, it really is theatre of a very high quality. And in a West End increasingly dominated by musicals and musical revues, it's very welcome.

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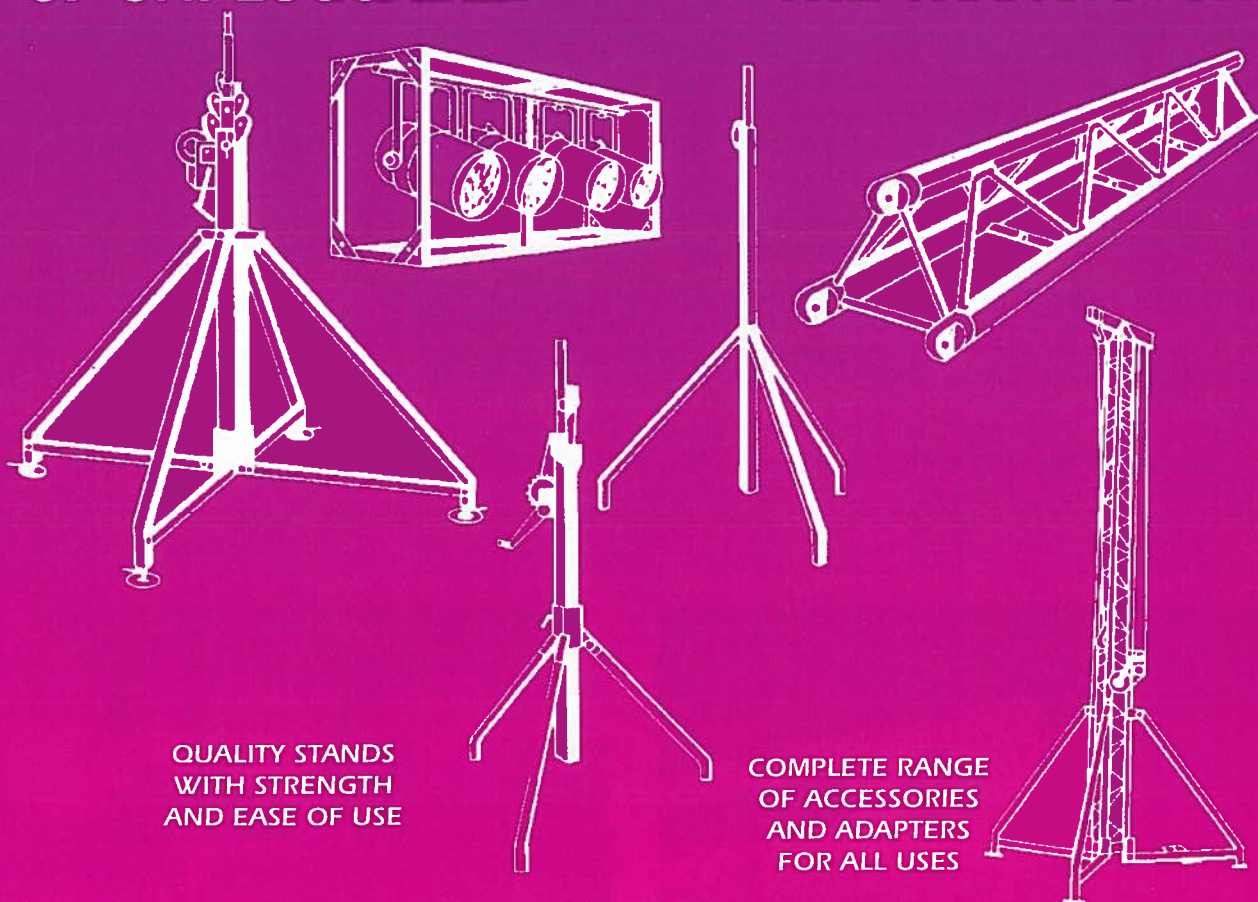
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MARIO AND SONS

*John Offord visits the DeSisti Lighting factories,
south-east of the city of Rome*

I realised soon after I arrived at the headquarters of film and television lighting equipment manufacturers DeSisti that it would have been no good attempting to research this feature on a one-night-stand basis. Slots for discussion, be it within the greater family lunch at the local restaurant, or between bursts of hyper activity, centred on Mario De Sisti's office, came about at un-forecast and spasmodic intervals.

Sensibly, Bill Smillie of DeSisti Lighting (UK) Ltd had organised my trip from a background of long experience, and, luckily for me, it included the best of Italian hospitality and the chance to witness, from a privileged position, the chemistry that makes this leading industry company fasten onto the road of success in its own particular style.

And thinking of roads, the DeSisti factories sit close to the old Appian Way or Via Appia Antica, the world's first trunk highway, which was opened in 312BC, and runs through the area of south-east Rome semi-suburbia on its way across the leg of Italy to the port of Brindisi. Whilst I was waiting for the next gap in the telephone calls and shipping discussions I had visions of Mario De Sisti and his troops setting out down the Appian Way with their latest luminaires on their backs and returning home in triumph with more than a few thousand Denarii in their leather pouches. Nowadays, of course, the men in smart suits fly out of Leonardo da Vinci airport at Fuimicino, but the story suited a quieter moment and fitted the pioneering spirit of the De Sistis.

Mario De Sisti was up and into engineering long before he should have been, but I'm sure enough years have now passed for the relevant authorities to decline any interest in the matter. Along the way he worked on an assembly line for lighting fixtures and eventually managed the department. This was well before he was 20, and in the midst of it all, he frequently found himself involved with TV and film location work and ever closer contact with the product development of the lighting that went with it. He studied electronics at evening school and fitted in the time to take a special course on optics at Florence.



Sergio, Fabio and Mario De Sisti.

"Day by day, I built up experience with a combination of study and practical work and discussion with technicians," explained Mario De Sisti. "This was how I discovered myself and I have to admit I became very attracted to the

was taken over by Strand Lighting. He decided to go his own way, and with the support of his wife and two very young sons set up his own operation from his home and garage.

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"It is my belief that the company grew because we placed emphasis on product quality and availability," continued Mario De Sisti. "It is also a question of having available a wide range of products and the ability to provide a high level of after-sales service.

"I had visions of De Sisti and his troops setting out down the Appian Way with their latest luminaires on their backs, returning home in triumph with a few thousand Denarii in their pouches."

industry!" In July 1954 the company became Ianiro srl, and coping with the usual family-style commercial convolutions along the way, De Sisti grew himself into the industry and ended up as general manager of the business. He left in 1982, three years before it



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100mm long throw smooth travel fader offers +10dB boost above the normal '0' operating level. A boost with on stop below the faders is used to number and identify the channels.

MIC/LINE

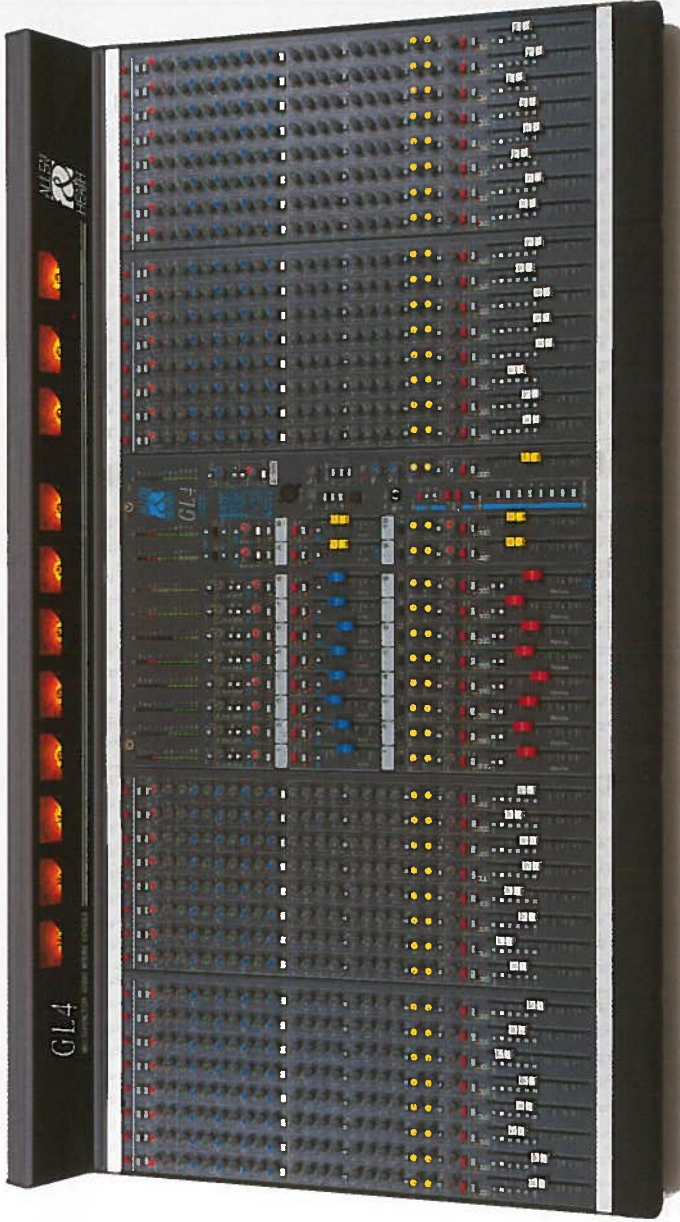
Selects either the MIC or LINE input source. Our MIC/LINE switch works as a 20dB pad. Our MIC/LINE switch works as a 20dB pad on the XLR connector which allows you to plug line level inputs into the XLR connector. No more getting out adapters to get your XLR line level sources into the console.

Input Meter

For complete control of the channel signal level a 3-stage LED meter shows pre-fader signal presence (dynamic indication starting from 20dBu), 0dB normal level, and signal peak (5dB below clipping).

Group Module

This is where it all happens. The Allen & Heath GL4 is designed for maximum flexibility with absolutely no compromise in the application you configure it for. That's the philosophy behind the layout of the group master section. EQ, Monitor or Recording, whatever the application of the moment, the best control layout can be arranged. The topology that we have chosen to achieve this has never been used before on a console in this price range.



AUX Reverse Section

This is where the whole Front of House/Monitor Console switching thing takes place. When these switches are depressed, it routes what was the auxiliary Master level to the corresponding group or Left/Right fader below. (You'd use all the channel auses in the Post Fader Post on position, remember they're meant now, in order to get the wedge mix the source select switch for the mono master fader is what you need. This button switches the source for the mono bus to the ALVPL circuit. You'll notice that each of what USED TO BE the aux master sends has an AFL switch on them. Now these buttons turn the mses on and off in your wedge mix. Cool, huh!

Matrix

Of course no sound reinforcement console worth it's salt is complete without a matrix section. The Allen & Heath GL4 has an 11x2 matrix that has the unique ability to tie no corresponding auxiliary sends. This is very cool for doing on the fly cue mixes and mix minus stuff.

GAIN

A new high performance pre-ampifier stage matches the input source to the console. Wide ranging (MIC +6 to +40dB, LINE -14 to +40dB) gain control with a linear compensated low to ensure a smooth, even response over the whole 270° range.

Phase Reverse

Reverses the phase of the input source to correct the phase differences often encountered in microphone placement, cables wired in reverse, and reverse wired microphones. Reversing the phase of a signal can also be used to minimize acoustic feedback, microphones in the sound mixing.

AUX Sends

10 aux sends with individual level controls and pre-post fader switching allow uncompromised routing to combinations of external effects devices, cue systems, stage monitors and the like. These are arranged in two groups of four, and one group of two for logical grouping of effects and monitor sends. Internal jumper options allow permanent configuration for pre or post fader rather than switched. Further jumper options select the pre-fader sends to be pre or post EQ and pre or post mute (pre EQ, post mute: standard setting). In stage monitor mode the 10 aux sends become the 10 mses per input, all post fader and EQ to allow total functionality as a dedicated stage monitor mixer.

Routing

The bank of switches routes the post-fader signal to the L-R and Groups (in pairs), and the pre-fader signal to the MONO mix. In STAGE MONITOR applications the MONO bus is used for AFL monitoring to the stage engineers wedge speaker.

Programmable Mute Groups

The system is a lock no-brainer to operate. Hit the **Mute Group Master** button and the mutes come on with their corresponding red LEDs lit. (It **Mute Preview**, select another master and the green LEDs tell you which mutes are going to come on when you go to that group. Hit the **Group Exit** button, main master button and change the status of each mute (green LEDs tell you whether they're assigned to that group) hit group exit again and watch those changes occur. Heck, if you really want to get fancy, check out the MDC capabilities we've got up our sleeve.

PAN

The new pan circuit gives even power separation on all buses. The pan control positions the signal between L (left) and R (right) of the mixed signals. At Allen & Heath we use a differential constant power pan for a multi-application environment. This introduces a 2.5dB dip in the center position. This has no effect on the completely separate mono bus.

MIDI Capabilities

MIDI in, out, and through allow you to run the programmable mute system via any MIDI external control. In addition the system can be set up to send program changes to external devices so that as you change from scene to scene your effects or any other devices can change simultaneously. These and many more implementation schemes are available on the GL4.

SEE US AT PLASA STAND B 4 2

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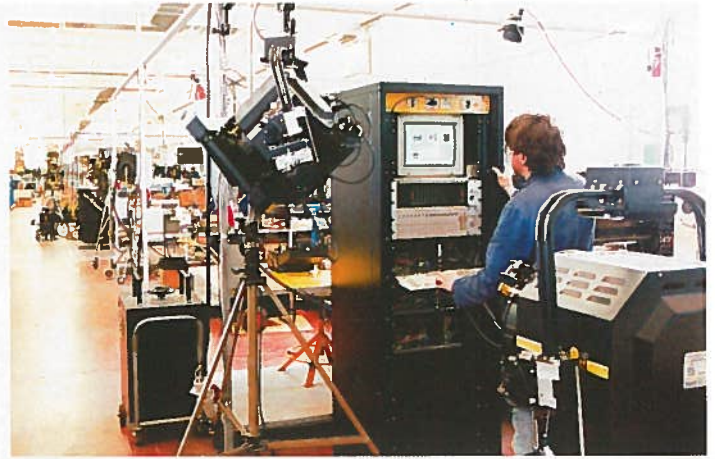
scientists sense of audio design, provide the GL4 with flexibility, portability, and sonic performance that make it an unbelievable value! Call us today to learn more about the console destined to change the rules in mixing technology! **Audition the console that gives you all you want with NO COMPROMISE!**

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Rigging and hoist assembly in progress.



Testing and programming of the fully motorised and computer-controlled Leonardo unit, via the Icarus system.



DeSisti employ the latest programmable laser cutting technology.



The high precision machining area.



1991: Studio 22 at the NOB complex at Hilversum in The Netherlands, where DeSisti installed 136 self-climbing hoists.



1990: 200 self-climbing hoists were supplied to studios 18 and 19 at Universal Studios, Orlando.

Although we are a young company, we have also achieved a very broad range of products in addition to luminaires, with suspension systems covering pantographs, hoists and telescopes, through to the Icarus robotic positioning system."

The facilities at the main DeSisti factory at Cecchina are second-to-none, as you would imagine, and the major problem suffered is one of managing success, the company having moved premises frequently to cope with ever-growing demand. Their current newly-moved-into complex is just about finished in organisational terms and 100 metres or so up the road their 'old' premises are still occupied, providing storage and assembly space, in addition to being the base for the domestic operation. Together, the two complexes provide 7,000 square metres of office and production space. In addition, there are other specialist family businesses, three of which I visited and all in the local area, who rely heavily on the De Sistis continuing their buoyant progress.

"To put all our people together and reorganise the company has taken a lot of effort. A number of new directors have been

appointed, covering everything from R&D and electronics through to marketing, and this has been done to consolidate the company and provide us with a strong foundation so that we can respond in an improved way. We want to continue to do the same as before and even better, but with a bit more breathing space!"

The results of the latest move are now beginning to show through. Output for the first half of this year increased by at least 35 per cent over the same period in 1994 and the target by the year end is to have increased production by up to 60 per cent. "We are starting to feel the first benefits, but we are still looking for more efficiency," emphasised Mario De Sisti.

To keep their distributors in touch the company organises an annual event. "In addition to the many exhibitions we attend around the world, where we meet with many distributors, we organise a De Sisti family event here in Rome where as many of our distributors as possible are present so that we can up-date them on new products and discuss with them how they work and what they need us to do for them. Allied to this, major customers can send their technicians to the factory for training purposes."



Mike Collier recently joined DeSisti Lighting as director of the sales department: "Mario De Sisti understands his sector of the business very well and globally he has chosen the right people in each market who are very focused in that particular area. He has involved people who can sell both lighting and suspension equipment. On arriving here from a competitor company, I realised that we had no idea just how much business he was doing. We never knew he had all these contacts scattered all over the world!"

"At DeSisti I am working for the owner, and the buck stops there. I have known him as a friend and competitor since 1977. At one recent meeting Mario asked me to look behind him and tell him what I saw. He pointed out that as there was no-one else behind 'you only have to ask me'. Coming from a corporate environment this was different - it also means you can make decisions and move."

Watching him in operation you could easily badge Mario De Sisti as a very determined pragmatist who will march his company forward in a rather dogmatic, but nonetheless, successful way. However, his steely attitude masks a visionary approach lurking just under the surface. I don't think you'd catch him out too often if you sat down and compared ratings on ideas and schemes.

He may also have a standard and fairly predictable line on the crossover of techniques between theatre, television and film, but if I



The versatile Goya 2.5/4kW - a discharge daylight shadowlight using single-ended MSR lamps which can be put to many uses.



The Leonardo 1kW - a Quartz Halogen Fresnel lens spotlight, which forms part of a luminaire series ranging from 300W to 20kW.



The Remington 1200W discharge daylight open-ended Par light using a single-ended MSR lamp. The range now covers 200W to 6kW and all have a removable lens system.

Combicolor 300

Much more than colour.



COMBICOLOR 300

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PROFESSIONAL SHOW LIGHTING



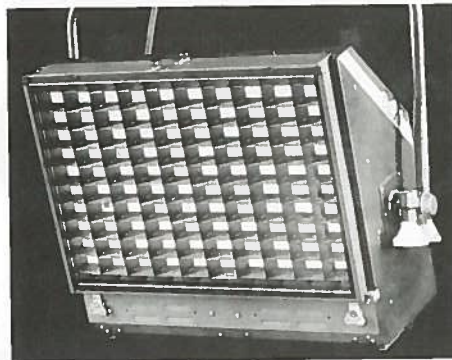
The small and powerful 2kW Micro, a Quartz-Halogen Fresnel lens spotlight using the new Philips 'blue pinch' lamp.

could tell you about a project that is about to break surface that involves leading Italian director of photography Vittorio Storaro, you would be swayed over very quickly to the 'other' side of Mario De Sisti. And for good measure, he is currently president of ATIC, the Italian technical association for film and television.

Developments on the more obvious front of lamp technology are also in the pipeline and I can hint of announcements in the next few months regarding further co-operation with Philips.

When Mario De Sisti is about to make an important statement he frequently starts it with the words "be aware". To the uninitiated and editors whose minds might be wandering off the track after a long lunch, it can often sound like "Beware!" And you sit up and pay attention. It's one of those unplanned ploys that works.

So, be aware of the De Sisti people. They have a very sharp eye for what makes a business work and the result will be a continual flow of interesting new products. It is fitting that the last words should go to his son Fabio De Sisti: "We are putting a great deal of effort and resources into managing new trends in technology and are generating around 12 new products every year. We have set the standards that a company needs to be successful - to satisfy the client and guarantee service with high quality and reliable products."



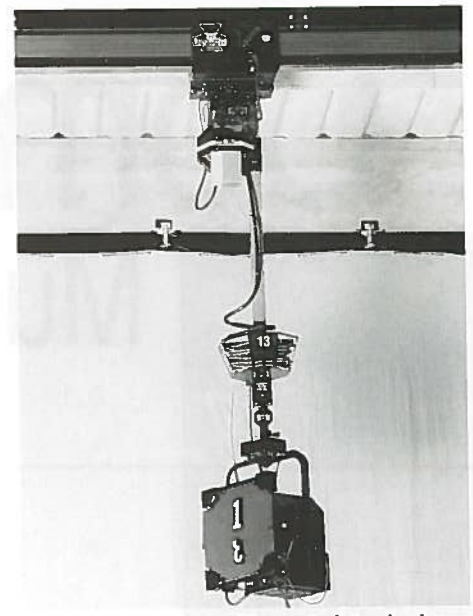
The compact Botticelli 2.5/4kW. Light output can be controlled by a purpose-designed egg crate.



DeSisti's electronic DC-operated, flicker-free ballasts ranging from 200W to 18kW.

DE SISTI LIGHTING: PEOPLE

Mario De Sisti - president
Fabio De Sisti - vice-president
Sergio De Sisti - vice-president
Aldo Pedacchia - administrative and financial director



The rigging system, with control track above. DeSisti's rigging includes pantographs, self-climbing hoists, telescopes, winches and hoists.

Mike Collier - director, sales department
Giorgio Lori - director, R&D mechanical department
Andrea Avagliano, Ing. Giuseppe Paolilli, Ing. Paolo Brevetti - directors, R&D electronic department

DE SISTI IN THE UK

DeSisti Lighting (UK) Ltd, as it is known today, was formed in April 1989, and the directors, each with equal equity in the company, are Bill Smillie, Jon Reay-Young and Mario De Sisti.

The company began trading with a flourish, winning a contract to supply the BBC with over 200 Michelangelo studio luminaires in early 1990. It has continued trading successfully, with strength gained from regular new products from the parent company such as the MSR range of HMI heads and the Superleo 20k Tungsten unit.

"We have adopted a very personal approach to our clients, and we believe that this, together with retaining the services of John Burgess (ex Lee Lighting/Lumo) over two years ago, has enabled us to

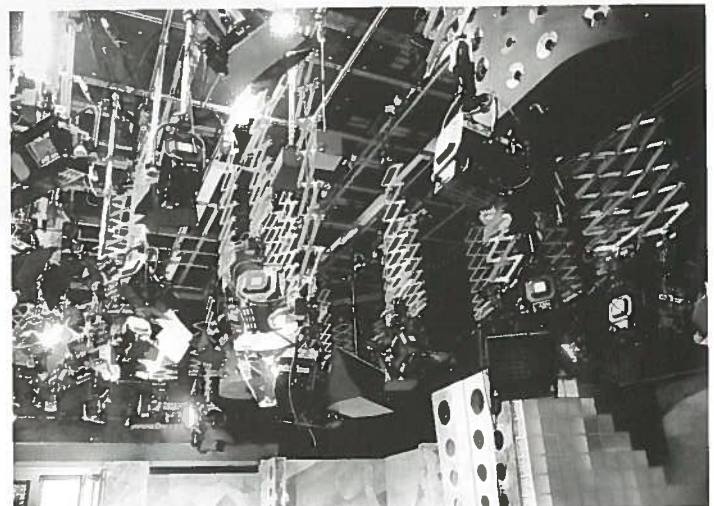


Bill Smillie (right) and Mario De Sisti discuss stand layout for this year's PLASA Light & Sound Show.

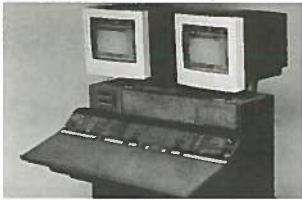
achieve our current status in the market," Bill Smillie told L+SI. "With the advent of a whole range of new products we are now looking forward to further expansion."



The Icarus system control desk.



1990: 60 pantographs and 44 hoists at West Film Studios in Essen.



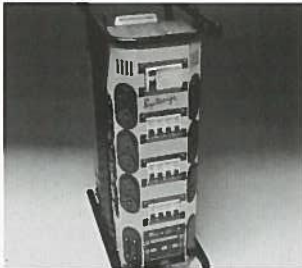
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- Most recently selected by the Sydney Opera House.



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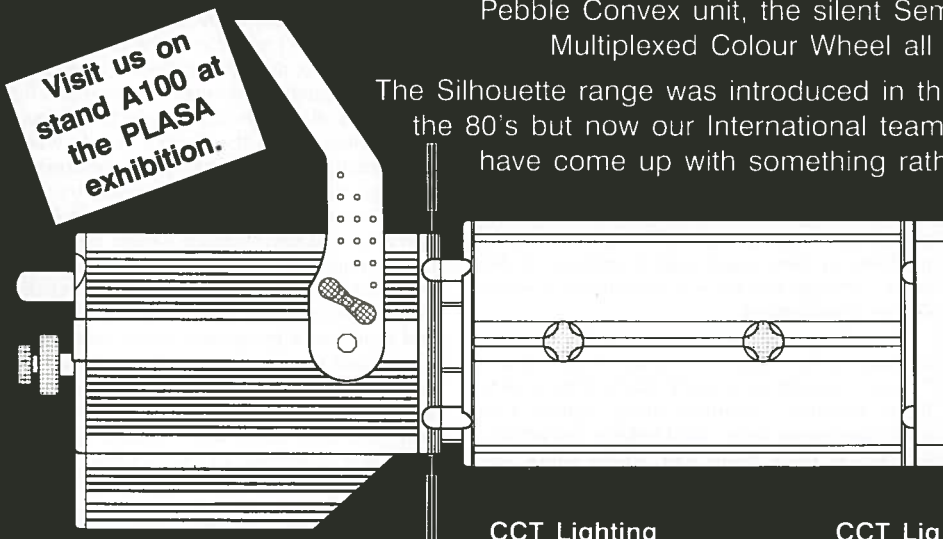
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ON TOUR

by STEVE MOLES
AND PRODUCTION NEWS

R.E.M.

Alfred McAlpine Stadium

LD: Willie Williams

SD: Joe O'Herlihy

Huddersfield isn't the first name that springs to mind when you think of Stadium rock. 'Isn't it one of those old Northern cotton mill towns?' is the more likely thought. This did not dissuade REM from staging the first two shows of their UK tour there, much to the delight of Tim Parsons and all at MCP, who put their faith in Kirklees Council and the stadium managers. For a first-ever concert in an almost brand new stadium, the two-day event was pulled off with remarkable aplomb: both tour manager Dave Russell and production manager Mike Weiss agreed the whole thing had gone very smoothly.

For the bands who played (the show started at 4.00pm with Echo Belly, Terravision and The Beautiful South, with REM at 8.45pm), the venue is a cosy medium-size stadium. The football pitch is surrounded on three sides by seated stands protected from the elements by beautiful arched, post-modern canopies. The north end of the ground, being open, is a natural position for the stage. Licensed for 35,000 each day, the comfort factor within the grounds was excellent. Outside, however, a couple of problems arose.

The ground is accessed from the north and south ends, via two pedestrian bridges spanning a tributary of the River Calder. Stewards informed me that it took over an hour for the crowd to depart after the first show. Maybe this is intentional for crowd control at football matches, but it makes for a long evening. The second problem is traffic: although adjacent to two junctions of the M62, feeder roads into the town are single-carriage-way and with allocated official parking spaces of just 7,000, the main Leeds road through town was, inevitably, a congested shambles, with cars parked all along both sides of the road. It took me just under two hours to travel the five miles from the motorway to the stadium at 5.00pm when much of the crowd had already arrived.

SOUND

Joe O'Herlihy, famed for his work with U2, is mixing FOH. Two Yamaha PM4000s are generously supplied for the opening acts, but Joe mixes from an ATI Paragon series console. Joe likes this desk for its "on-board dynamics. As well as EQ, each channel has its own noise gate and compressor, the components of which are well chosen. The EQ is sensitive and quite musical."

With so much on-board facility, Joe's effects racks were quite modest: "I've got an Eventide H3000 and an H3500, and a Lexicon 480L, which are quite simply the best available." Each show is being recorded live onto three Tascam DA88s (which seem to be proving de rigeur these days), the 24 track mix coming straight off the Paragon. Vish Wadi mixes monitors from a Yamaha PM4000. Having introduced the band to in-ear systems, only two of them elected to use it - not having toured for six years, it's what they're used to that matters.

Joe has 63 S4 cabinets supplied by Clair Brothers Audio, hung each side in seven columns of nine, with six of Clair's 4x18" subs beneath each side. The wide stage places the main PA stacks over 80 feet apart, so a centre cluster of trapezoidal P4 cabinets is arrayed beneath the roof to cover the front-fill



REM have festooned across the stage a collection of slightly over-sized old factory lamps.

audience position. Michael Stipe's vocal is central to the mix, with the lyrical content of REM's songs clearly discernible above the raucous guitar sound they have chosen on their latest album. A friendly mix that all could enjoy.

LIGHTING

Lighting designer Willie Williams worked closely with Mark Fisher, who designed the stage set. As is so often the case in such partnerships, it was more a collusion in which they designed both disciplines as an integrated whole. The lighting system, supplied by Bandit Lites of Tennessee (Meteorlites provided tour support in Europe), is bizarre to say the least: a simple box of four trusses is trimmed high, perhaps 50ft plus above the stage floor. To the rear, three rows of 16 Pars, staggered horizontally, occupy the stage right truss end opposed by five Maxi-Brutes fitted with Wybron scrollers at the other. The stage left truss has a similar rig of three rows of Pars with a single Maxi-Brute hung six feet beneath; all 100-odd Pars are gelled in Lee 115. Stage right has a further five scrollered Brutes whilst the front truss sports some 13 pairs of Pars evenly spread across it.

All four trusses have two Lycian followspots top mounted: "The band don't like to be picked out, so there were no spots at all to start with. I persuaded them to use followspots in static positions, so they could walk in and out of the beam, although this has since graduated to some degree of movement."

The floor lighting is a collection of approximately (no one really knew) 150 Unipars. Those of you who've visited PLASA will have seen these brightly coloured clear plastic Par enclosures many times, but I believe this is their first outing on a major tour. These lamps are scattered about the stage on various stands. The other plastic surprise is the hanging lamps. Festooned mostly across the back, but with a few to the sides and front, is, for want of a better term, a collection of slightly over-sized old factory lamps. Fitted with 1kW domestic-style light bulbs, these lamps provide much of the general stage wash for the opening section of the show. Quite simply, by their positioning they are the most

striking lighting fixture I've seen all year, giving the stage an enormous look, yet at the same time engendering a pronounced intimacy. Three Lightning Strikes and 17 Terrastros augment the system, with some Nook lights dotted about the floor, and a 4kW HMI, modified by Brilliant to work as a lighthouse-type effect, concealed beneath the drum riser.

The trusses also support 10 ETC Source Fours, focused in pairs on the five band members. This is the first time I've seen these lamps in action and they are remarkably punchy, even at over 50 feet. The main lighting theme, however, is projection: nine Strong movie projectors have been modified by Boston Stage and Light for the tour. For space reasons, the lamps are tipped on end and have a mirror fitted above to reflect the image towards the screens at the back and sides of stage. Eight 7kW 35mm projectors are on stage, with a 10kW, 70mm projector on the mix tower. All the films used were specially made for the tour. Although projection wasn't possible during the first hour of this show due to daylight conditions, the latter half was an enchanting interplay of image and light, the beams of the on-stage projectors dappling the smoke above the band's heads was an intentional part of the look, hence the projectors on stage instead of using rear-projection.

Willie runs all analogue lights from an Avolites QM and is assisted by Bruce Ramus, who runs all DMX equipment on an Avolites Diamond. A little over-desked perhaps, but with the set list changed every night, often radically, much of what Willie and Bruce do is improvised. Even the projection is swapped about: Willie gets the set list about an hour before the show, barely giving enough time to organise how the films will run, and then away they go. This is not, however, a busk - each song has a very distinctive and well-crafted look - it's just that you are unlikely to see the same song lit the same way on consecutive nights.

Michael Stipe is undoubtedly the focus on stage. As the singer of the band, he plays his part in the rock anti-hero vein, somewhere between Morrissey and Billy Bragg, slightly flawed, but politically aware. He is a big presence on stage, as world famous tour bus driver 'BJ' said: "Stipe is the best front man I've ever seen." And BJ's seen a few.

Wet Wet Wet

Manchester 'Nynex' Arena

LD: Martin Nicholls

SD: Jim Ebdon

The Wet Wet Wet tour is having trouble with ticket sales, but it's the kind of trouble all tours would like - the tickets keep on selling. Having already done multiple dates all around the British Arena circuit, they have been obliged to return to many of these venues for extra shows, topping off this spree with a record-breaking six nights at Glasgow's Scottish Exhibition Centre. The touring production is large to say the least: two stages, one end-on, the other set mid-hall, are joined by a pair of suspended catwalks that lower in mid-show to allow the band to pass twixt the two. This not only poses unusual challenges for the sound and lighting designers, but also has important implications for the arena managers and local safety officials. It was, therefore, an audacious step by the newly-opened Manchester Arena to invite 'The Wets' (as they are more commonly known) to be the first-ever concert show in the building; even more so when you consider that, at the time of the invitation, the building was incomplete.

Choosing a large and contentious production for your first show is one way to cut your teeth and perhaps not as risky as it might first appear. Much of the credit for why Manchester Arena felt confident enough to take the show can be laid squarely at the feet of touring manager Dougie Souness and the way he presented the production to the hall managers.

The tour travels under the title 'All around and in the crowd', as Dougie explained: "This is exactly what they wanted, to be in amongst their fans." Recognising immediately that this would be a little different and present some problems, he established around him a team of all the personnel who would be directly influenced by such a concept. Natural contenders were obviously LD Martin Nicholls, sound engineer Jim Ebdon, and tour rigger Phil Broad, but Dougie also chose to bring in the assistance of experienced sub contractors - the people who would be building the components of the show - for their contribution. Thus Chris Beale at sound company SSE, Chris Cronin at Total Fabrication and both Geoff Grainger and Terry Lee of Light & Sound Design were consulted.

The initial concept, as outlined above, was for two stages. As design moved from napkin to drawing board, production manager Jimmy Innes, tour security manager Brandon Hyland, Icon operator Mark Cunniffe and stage manager Milan Rakic were added to the team. Once the 70-point, 38-ton behemoth was finalised, Dougie drew up a production plan with a complete risk assessment, which he then presented at every venue. Recognising the concerns common to all hall managers and safety officers, and wishing to demonstrate the ability to put assessment into accurate practice, he then invited all of them to the Docklands Arena to witness the system in action during production rehearsals.

Productions similar to this have toured recently: Peter Gabriel had two stages joined by a walkway through the hall and Take That had a suspended mid-stage linked by a suspended catwalk. For the Wets, with their raising and lowering catwalk, there was always the possibility that if the catwalk failed to lower at the end of their mid-stage set the band would be trapped in the middle of the hall. Therefore, contingency plans had to be drawn up to deal with this. Nobody wants a show to come to a sudden unrehearsed stop in front of many thousands of excited adolescents. To this end, a five-page production memo was circulated to all crew members detailing procedures and responsibilities in the event of a catwalk



Wet Wet Wet on a sell-out tour across the UK, with an army of lighting and sound technology.



malfunction. As Dougie was eager to emphasise: "The success of this tour and the fact that we have been able to stage our full production in all our chosen venues is due to the whole team."

SOUND

Sound was perhaps the most difficult aspect of the whole presentation. Not only did Jim Ebdon have to contend with the band performing from two different locations in the hall, but the fact that they also wanted to use the catwalk as a performance area. Not content to sing their way quickly from one stage to the other, the band elected to perform an entire song, using both legs of the catwalk, to make contact with as much of the audience as possible.

The EV PA from SSE is rigged in six clusters - two conventionally each side of the main stage, and four arrayed uniformly around the circular mid-hall stage. In simple terms, when the band are on the main stage, the PA is used as you would expect: the two clusters in the mid position that actually face main stage are switched off, while the other pair act as delays, with the main stage PA doing the lion's share of the work. When the band commence their stately progress down the catwalks, some fairly complex electronics earn their money.

Four pre-set delay configurations are used, triggered manually by Jim from his Mac according to the band's position. The delay system consists of four Saori stereo processors made by TOA and the timings are established by a very unassuming-looking computer-based TEF 20 unit. The TEF can measure both reflective sound from the room or ignore the room altogether - comparison of the two allows for accurate speaker positioning, as well as highly-accurate delay

measurements. So subtle were the changes during the performance that it always appeared the sound emanated from wherever the band were playing. As if to confirm this, LD Martin Nicholls, who is obliged to run the lights from the very far end of the hall and is thus totally reliant on the live sound for his cues, never seemed to miss a beat. Jim mixes from two Yamaha PM4000s, one for each stage, positioned house right approximately half-way between the two stages. Fortunately, the band's mid-stage set is largely acoustic, so he is able to squeeze the support band mix onto that second console. This is an important consideration when you've already lost a fair chunk of audience capacity to the stage itself. The show is recorded live every night onto four Tascam DA88 digital tape machines. Busy Jim provides a separate mix for this via a Mackie 32 into 8, neatly balanced atop the rack of tape decks.

The other notable effects are the TC1128 automated graphics, of which some 20 assist John Ormisher in generating the monitor mix for the band, all of whom use in-ear monitoring. Interestingly, another TC1128 is to be found nestling within the on-stage guitar rack. Singer, heart-throb and apparently drop dead good-looker, Marti Pellow, has a remarkably powerful voice and a not inconsiderable lung capacity - he is seemingly able to sustain a note for well over a minute. His voice ranges from whisper to full throttle between phrases and because of this, Jim by-passes the desk EQ, running the signal from Marti's AKG5900 straight into a Focusrite 6 and then through a Tube Tech valve compressor, before returning it to the mix. Jim describes the EQ in the Focusrite as "absolutely brilliant. Unfortunately, it would not be practical to have such a system on the board, because it would make the desk enormous."

SET

Not only did Total Fabrication build the set - a system of interlocking multi-layered bow-fronted risers - they also provided the entire mid-stage, and specialised parts for the walkway. The set is based upon Total's Top Deck system: riser tops rest upon pre-cut lengths of 2" aluminium pipe legs that, when packed away, clip neatly in under the deck. The set wins out on two counts: the mounting collar for the pipe legs allows for easy adjustment on uneven stages, and when packed away the set is remarkably small. Last year's set was smaller when assembled and took five dollies, whereas this set, covering a 60ft width, takes just three dollies and fits the dance-floor of the semi-trailer. The extruded edges for the set, as well

as locking the risers vertically and horizontally, also contain tiny stairnose-type pea lights - 3,800 of them! In six weeks of touring they lost only four.

The mid-stage is also based upon the Top Deck system which, with a number of amps and dimmers by necessity positioned beneath it, also benefits from the simple pipe leg support which facilitates wheeling the heavy equipment in and out. Two scissor-lifts operate as part of this stage raising drums and keyboards. Instead of the normal hydraulics or screw gear, the scissor is raised by air-bag bellows driven by a Hydrovane compressor. With these compressors present on most tours for cracked oil machines, this looks to be a handy way to replace heavy and potentially messy machinery. The catwalks are built upon LSD's D-type truss, with the decks, handrails, and a special cable trunking system all from Total Fab, as are the hinges and stairs at each end.

LIGHTING

Martin Nicholls has two lighting systems - one for each stage. Rather daringly, he has elected not to have a catwalk system, other than lamps slung beneath it to highlight its decent and put a little up-light on the band. Instead, he has a spot platform with four long-throw Lycian Starklites rigged mid-way between the two stages, so the operators are able to swing their lamps around and hit both areas. An enormous black backdrop on tab track conceals a 60ftx24ft white cyc behind the main stage which comes and goes frequently during the set, most effectively blacked out to focus attention on the mid-stage when appropriate. Some of the designs thrown up on the cyc by the Icons and colour washes on stage are delightful, with the band performing in primary colour neo-hippy crushed velvet suits Martin was aiming for a very 'TV' look for this stage, and the Icons and pastel washes certainly achieved this.

The mid-hall stage, by contrast, is, as Martin

said "All kaftans and Persian rugs," and he has chosen richer hues of gold and red to reflect this. The effect is very lush, and coupled with the innovation of adding aromatherapy oils to the cracked oil machine, makes for a very seductive passage in the show. The 660 Pars, plus 18 Molemags and assorted strobes are controlled by Martin from an Avolites QM500, whilst Mark Cunniffe performs at the Icon board. Between them, they produce a beautiful-looking show: it's a big set and a huge rig, but it never over-powers. Even when there are just three band members on the mid-stage, Martin and Mark are able to pull things down to the point where we can all feel a certain intimacy with the performers.

Inevitably, this show threw up some problems, probably the thorniest of which was truck access. Although some thought has been given to this, it's not perfect. Backstage centre could accommodate three articulated trucks, but, due to structural support columns and truck turning potential, this would probably take all day to manoeuvre into. Fortunately, backstage left has a purpose-built loading dock which can take another three trucks, and although a fair distance from the stage it's a flat wheel-through for flight cases. The centre-stage access might be improved by the removal of a couple of breeze-block walls in the back-stage area, but not being a structural engineer, that decision rests elsewhere - certainly production manager Jimmy Innes would have liked to see them gone.

There are no traps for running multicores through the hall, nor is there a tunnel beneath the floor to run them through: a small thing maybe, but one easily avoided. There is a house PA with what appeared to be Community speakers rigged up around the upper seating tier. This is worth mentioning as Jim Ebdon elected to have 24 of his own system cabinets rigged around the room in this position as he was unable to get control for the house system from his mix position. The upper

seats are very, very high (300 people complained of vertigo at this show), much higher than at the NEC or Wembley and higher even than at the most comparable gig in the UK - Sheffield Arena. This is going to present visiting sound engineers with some headaches. This steep seating avoided sight-line problems, but this is more attributable to the production than the venue. Because of the two stages, mid-positioned PA and lights had to be trimmed very high to permit unrestricted view of the end stage. Had the four-screen Sony scoreboard been installed (it will be a permanent fixture in the future), this trim may not have been possible. However, for a conventional end-on show, or a concert in-the-round, sight lines should not be a problem.

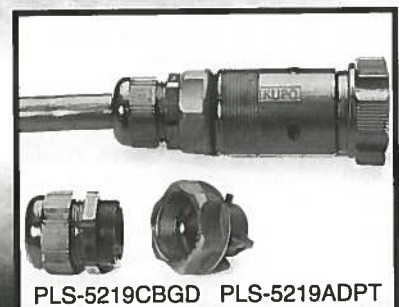
Rigging-wise the hall is a delight, as visiting rigger Charlie Boxhall said: "If you can't rig here you shouldn't be rigging." The bottom of the roof trusses is some 85ft above the arena floor, so even when the scoreboard is in place, it shouldn't prove too much of a problem to rig in-the-round shows. There's a 50 ton (100,000lbs) capacity at the stage end with two tons per point on primary spans; a further 20-odd tons (50,000lbs) is available at the centre. This reduction is only because of the impending arrival of the scoreboard. The house also has some hoists of its own, mounted on beam trolleys to allow rigging of a cross-house drapes truss. With the trolleys running up and down the room, these hoists are not dissimilar to the set-up in the Rotterdam Ahoy, allowing a neat, easily-adjustable curtaining system when playing to undersold houses. These problems aside, it's a nice venue - very comfortable seating, big capacity (16,500 for hockey, up to 19,500 for concerts) and a great location. The extra show at Wembley is being recorded by the BBC, and will be broadcast on Christmas Day. When you all settle down after copious amounts of grub you might mull over the efforts made to bring this to your attention by Dougie and his team . . .

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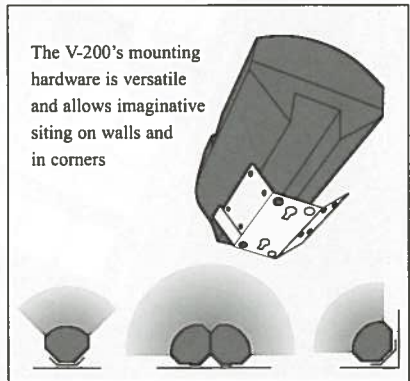
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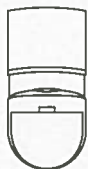
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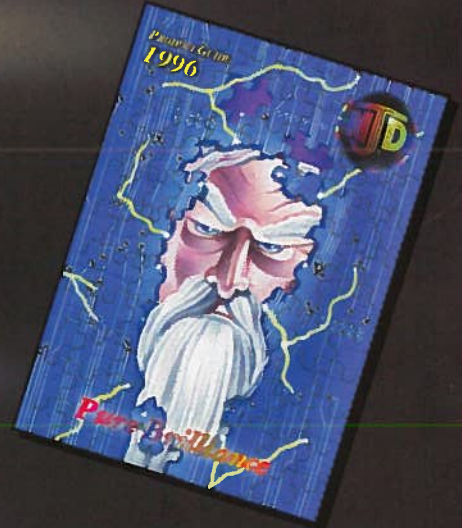
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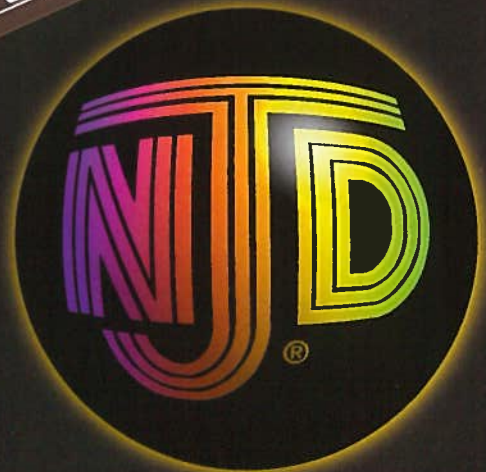
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ORCHESTRATING SOUND

Jim Douglas of Unusual Automation describes a unique way of drawing the crowds at the Hanover Fair

Contrary to what you might expect, the Unusual organisation was not entirely devoted to organising the VE Day celebrations from Christmas until the beginning of May. In some departments it was business as usual - although it really rather depends on your definition of 'usual'. In mid January, we took a call from a client: "We'd like you to build us an orchestra for our exhibition stand at the Hanover Fair in the first week of April." A little voice in my head cried out 'no time!' So what's new?

The client in this case was Control Techniques Ltd of Newtown, Powys. They are probably the third largest supplier of motor drives in the world. But hang on, did I say *client*? Control Techniques are one of our suppliers! We have been using their drives for four years now. Confused? We were! But CT (Control Techniques) had a reputation to maintain. Each year their exhibition stand at the Hanover Fair has been bigger and better. Each year the question is 'how can we top last year's effort?' Now it was up to us to make sure that 1995 was no exception!

The development of the concept went something like this: CT manufacture electronic motor drives that enable you to control the speed of electric motors very precisely. Most electric motors make a bit of acoustic noise when they are running, and at a previous exhibition, CT's engineers had taken advantage of this fact and programmed a motor and drive combination to play tunes. The faster the motor rotated, the higher the pitch of the noise and vice versa. They had often talked about developing this principle so that a number of motors and drives could be combined into an ensemble for the purposes of making more interesting music. With the launch of their latest state-of-the-art product (UniDrive) scheduled for the Hanover Fair, it seemed a good method of demonstration. Simple really. Just make the motors sing and dance. Well, sing maybe - save the dancing for another time!

The final brief was to build an orchestra utilising nine motors and drives in three sections of three. The sections were defined by the types of available motors: AC Servo, AC with encoder feedback and AC open loop. One of the key features of UniDrive is that it is able to control all of these diverse types of motor. The 30m x 16m exhibition stand had already been designed by ASAP Exhibitions in Birmingham, and there was a five metre diameter circular area reserved for the orchestra which took pride of place at the front.

The first problem to be addressed was how to produce the musical notes. To get some help in this field, I discussed the project with Chris Marsham and Dr David Howard, lecturer in Music Technology at the University of York. The pitch of the note had to be determined by the speed of the motor's rotation. The idea of using its inherent noise was very negative, as a lot of industries (particularly ours) require the motors to be silent. I was initially keen to attach something to the motor shaft, like a siren, that would produce an acoustic noise and have a strong visual connection with the motor.

In the end, for reasons of versatility and simplicity, we decided to go for a rotating disk



'Dingle Fingle' rehearses the orchestra at the Unusual workshop.

with an electronic pickup to produce the basic electrical waveform at the required frequency, and then process it and relay it out through a loudspeaker - a principle reminiscent of the Hammond 'tone wheel' organ. The less obvious connection between the motor rotation and the music would be reinforced in other ways to the observer.

York University were keen to help with the music, but I was concerned on two counts - later to be justified. The first was the relative inflexibility of the academic schedule, and the second was the vast distance between York and London. So, I made enquiries around the music business closer to home and was eventually introduced to David Mitcham. If you have ever stopped to wonder who wrote the seductive music for that AV presentation you were working on, or the 'buy-me' sound track of that

corporate video, relentlessly on auto-repeat at an exhibition stand, or even the atmospheric music for the latest 'experience' - well, it could be Mitcham. He writes and arranges music for a variety of clients including film, television and commercials. What's more, he is aware of the unsociable hours, unfriendly conditions and unrealistic deadlines that come as part and parcel of the industry we know and love. He didn't bat an eyelid when I explained the weird nature of this job to him.

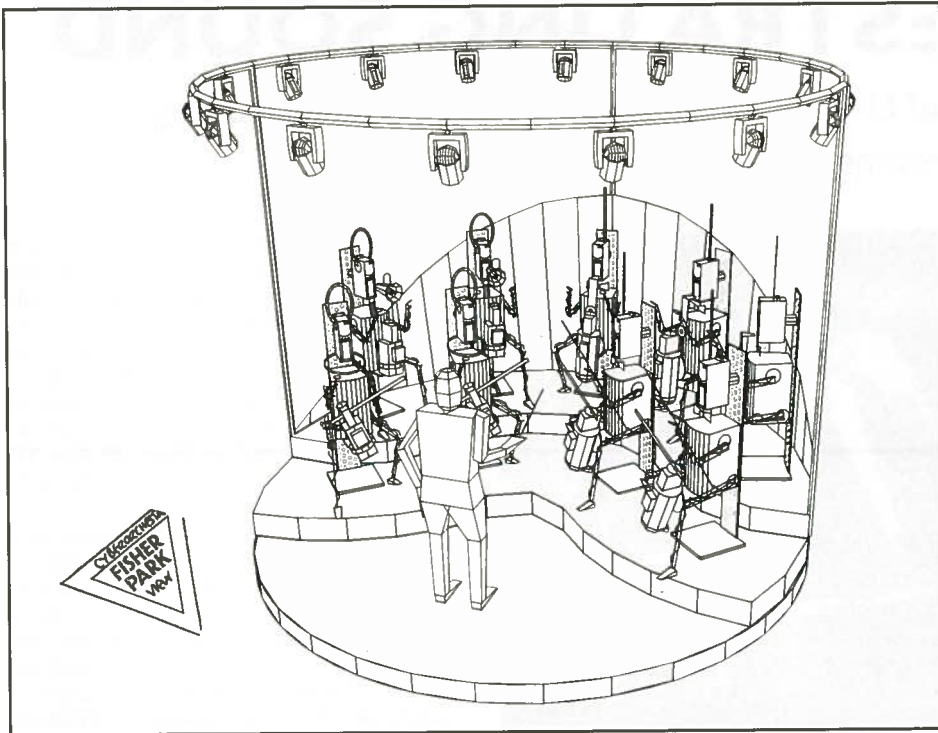
The client's brief for the music was extremely loose. Anything from classical to pop and international in flavour. Before we could start on the arrangements we had to get an idea of the musical character of the 'instruments' and see what limitations, if any, were imposed. The three main issues of interest were accuracy - getting the notes in tune, stability - will there be any unwelcome vibrato, and dynamic response - getting quickly from one note to the next. A prototype was rapidly constructed and we spent one freezing morning testing it at Unusual's new premises at Bugbrooke with the wind and snow howling around us.

The results exceeded our expectations. Accuracy was not an issue; the drives were accurate to one or two rpm, stability was acceptable (better at high revs than low), and the dynamic response was amazing. We settled on a working range of two-and-a-half octaves for each instrument. The open loop drives would play bass with a top note of middle C, the closed loop AC motors would be tenor, with a range an octave above the basses, and the Servo motors' treble an octave above that. After defrosting over lunch and agreeing the choice of music with the client, David went away to arrange this on computer and await the creation of the actual musicians.

OK, so we had worked out how to produce the music, but what was this orchestra going to look like? During my early meeting at York I did a sketch of how I visualised a 'musician', which possibly owed a little something to both



'Marius' conducts the finished orchestra at the Hanover Fair.



Jonathan Park's CAD rendition of the 'Cyberorch'.

Hoffnung and Walt Disney. There was a general feeling that the orchestra should be very 'Nigel Kennedy' but it became apparent that we were not going to get very far without an experienced designer to co-ordinate the overall appearance. Alan Jacobi suggested I contact Jonathan Park, who was working on other projects for Unusual. I knew I'd found the right person when, after a brief conversation, I received a funny fax that would have done Heath Robinson proud.

Park soon had all the constituent parts arranged in their anatomically correct order. The motor drive was to be the head. Below that, the torso was a box containing the loudspeaker and any other electronics. In front of the torso was the motor representing the instrument being played. Arms and legs were to be made from Anglepoise light fittings and there would be a variety of hair styles fashioned from cables, and a selection of bow ties and necklaces.

To reinforce the connection between motor speed and the pitch of the note, each musician would be equipped with a rope-light thermometer type indicator, calibrated in semitones, as well as displaying the speed numerically on the 'face' of the drive. To make the orchestra visually captivating there had to be some animation. If we put in too much, it would detract from the motors and drives, and tend to suggest that Control Techniques was a robotics company. In the end we opted for a liberal sprinkling of moving hands, tapping feet, swaying heads and revolving bow ties.

The musicians were to be arranged on a 4.5m tiered podium, with a small stage area at the front for a human performer or demonstrator. Jonathan Park produced a 3D visualisation of the orchestra on his AutoCAD system. He wanted to produce a model but time did not permit. The job of detailing and realising all this hardware fell to Neil Darracot and his team at Unusual Manufacturing with some of the dressing sub-contracted out to Russell Beck Studios. We decided it would be prudent to build one prototype musician before committing ourselves to all nine. This would at least give Park a chance to make detailed changes if required.

So, back from bits of wood and steel to the

silicon and copper. How was it all to be controlled? There was only one way for us to do this and that was to use a PC-based MIDI system. An off-the-shelf PC from Dan Computers running Cakewalk Professional v3.0 under Windows and containing a Music Quest MQX-32M MIDI interface card with built-in timecode facility was quickly put together. David Mitcham did the arrangements on an Atari using Cubase and they were transferred across to the PC directly via floppy disc in MIDI file format without problem! The more I use it, the more impressive I find the MIDI standard.

Producing the MIDI information to send down the cable was the easy bit. Intercepting it and acting on it for each musician was slightly more complicated. The major task for us at Unusual Automation was to design and build nine micro-processor-based units - one for each musician - that could a) filter out and act on the locally relevant MIDI commands, and b) process the continuous square wave output of the optical pick-up produced by the spinning toothed disk on the end of the motor shaft. Thank goodness I started working life as a sound engineer with a musical background!

Each musician is assigned a MIDI channel selected by a rotary switch. The received MIDI pitch information is immediately converted to rotational speed information and passed on to the UniDrive via a high-speed serial data port. This causes the rotating disk to change to the newly commanded speed within a few milliseconds, and as a result, the frequency of the squarewave from the optical pick-up changes to the corresponding musical pitch. Meanwhile, the velocity information determines the ADSR envelopes applied to a Voltage Controlled Amplifier and a Voltage Controlled Filter that are used to treat the squarewave - nothing too extravagant - somewhat reminiscent of a sixties Moog analogue synthesiser.

The principal idea was to chop up the signal into individual notes and add a bit of colour - otherwise, it would end up sounding boring, like the good old 'Stylophone'! There was also a possibility that the overall sound would sound somewhat 'dry' so we included an Alesis

Midiverb 4 audio effects processor in the signal chain and then eventually fed the output of all this into a combination of Fostex SPA11 amplifiers and loudspeakers. The animation items were kept simple and controlled by on/off commands, each assigned to a single MIDI note outside the musical range of the instrument.

All the elements had been decided upon and we beavered away on our individual tasks, while the recently appointed project manager, Robin Elias, tried to pull the job together. This project had its fair share of problems from all quarters. The exhibition opened on April 3rd. The original shipping date for the orchestra, and a demonstration elevator that we were also manufacturing, had been set for 23rd March to slot into the overall stand building programme. As this date approached we had not yet had an opportunity to run more than two or three of the musicians together, and David Mitcham was getting a little frustrated. He needed four day's exclusive access to the orchestra in order to finish arranging the extensive repertoire he had put together. The decision was taken to ship the elevator and orchestra podium on the 23rd and let the musicians follow a few days later on the 29th, thereby giving Mitcham the time he required.

The important first task in programming was to set up a variety of voices for the musicians. The basic treble sound is a bit like a clarinet and we also managed to create voices similar to brass, flute, pan pipes and over-driven guitar (used in 'Bohemian Rhapsody'). For most numbers we used a tenor voice somewhat like a saxophone and a bass sound similar to a plucked double bass. The AC Servo motor used on the trebles is extremely agile and can cope with almost anything you care to throw at it, including fast trills. The AC Vector motor at work for the tenors was fairly dynamic and certainly coped with the parts as written.

The only cheating we had to resort to was with the open loop motor on the basses. In places where the motor is required to make a significant jump in speed, we inserted a short, silent dummy note a few milliseconds ahead of the real note to allow the motor a little more time to change and stabilise its rotation. Within a day, David had mastered the techniques involved in 'playing' each of the musicians and was happily amending his previously prepared arrangements to the best advantage.

The choice of music catered for all tastes: Beethoven's 'Ode to Joy' - very European; Mozart's 'Eine Kleine Nachtmusik'; Handel's 'Water Music' with some lovely trills and fast moving bass lines. Then there are a few Beatles numbers, whilst big band swing numbers such as the 'Pink Panther' and 'New York, New York' work very well, as do military brass band arrangements. We also threw in a couple of Bavarian 'Umpah' tunes for good measure!

The truck driver who arrived to pick up the musicians on the afternoon of the 29th had been well and truly wound up by his office. They had told him he was picking up an orchestra - they just wouldn't tell him what kind of orchestra it was! By the time he left us he was expecting to hear music emanating from the back of the truck all the way to Hanover!

By the evening of Thursday 30th, the orchestra was up and running on the partially completed exhibition stand. Friday and Saturday were spent making last minute adjustments and trying to finish off some of the animated items. During this time we had a foretaste of things to come. The halls were initially populated by exhibitors and

contractors, but every time the orchestra started to play people would appear magically, and watch as if transfixed. On Sunday the 'conductor' (a Dutch mime artiste called Marius) arrived. His speciality is one of leaning his whole body forwards about 45 degrees, anchored to bolts in the floor by specially adapted boots. He dressed as an eccentric old man, reminiscent of Einstein. As he conducted, the more carried away he became, and the further forward he leaned.

We soon devised the format of a presentation. It started with a short overture/crowd-puller performed by the orchestra. Marius would then make his entrance, making a big play of his surprise at not finding human players. We then performed an arrangement of 'Ode to Joy' during which the musicians made 'mistakes' - playing the right thing at the wrong time or just playing the wrong notes - which gave Marius a lot of scope for reaction. There was then a short explanation by a professional presenter who extolled the virtues of the UniDrive product. We closed with an up-beat number during which Marius would often let members of the audience do the conducting.

We did this show every hour on the hour, with extra performances for the benefit of the TV cameras. With 10 minutes to go, a few people would stop and wait. With five minutes to go there would be a sizeable crowd. When the show started the aisles around the stand were completely blocked. The pulling power of this orchestra was enormous. The sales team had difficulty in coping with the number of people enticed onto the stand. Control



A rotating disc, with optical pick-up, produces the music.



The midi effects processor and Alesis midi-verb unit.

Techniques were the talk of the exhibition and will be remembered by everyone who saw the orchestra - which is what it's all about.

Back to the UK, but by no means the end of the story. We had to make a few alterations and properly finish one or two 'quick fixes' resorted to on site. While the orchestra was assembled at Stanmore we had a photo shoot for the press which resulted in an article in the Sunday Times and some local papers. David Mitcham added arrangements of the 'Dambusters March', '633 Squadron' and 'White Cliffs of Dover' and it was off to Hyde Park where the orchestra entertained the public in the Communications and Technology Pavilion during the VE Day celebrations.

Then, all of a sudden, we were receiving offers to appear on television! Both 'Blue Peter' and 'The Big Breakfast' wanted the orchestra to appear. 'Blue Peter' got in first. We had to 'teach' the orchestra how to play the programme's theme tune and on Monday 22nd May we spent a day in Studio 6 at TV Centre,

performing live on the show broadcast that evening. We now have a break, but the touring starts in earnest this month. As it stands currently, the orchestra will go to Norway, then on to Sweden in September and to Holland in October. There is rumour of it making a guest appearance at the 'Electrical Review' awards ceremony at the Grosvenor House Hotel in September. It's also hoped that Control Techniques' workforce at the assembly plant in Newtown will have a chance to see it soon.

The electronic orchestra was an interesting and exciting project to work on. From a personal stand-point I found it a satisfying challenge because I had to draw

on knowledge and experience gained from working in various areas of the business over many years. It would not have been possible to do this project in the time allotted without the help of the great team at Unusual. Thanks are due to all those who took part and have not been mentioned.

As with all projects, there areas where it could have been improved. Musically there is still a lot left to explore - time permitting, and there are a number of built-in features we have not yet utilised. There is obviously something very interesting about mechanical ways of producing music, as the crowds at Hanover testified.

For many, this orchestra has the same attraction and fascination as the fairground organs of yesteryear. It occasionally makes me wonder what will become of it. Will it end up entertaining the tourists in Covent Garden or in the Museum of Automata at York? Who knows? The more immediate question is how are Control Techniques going to top it *next year?*

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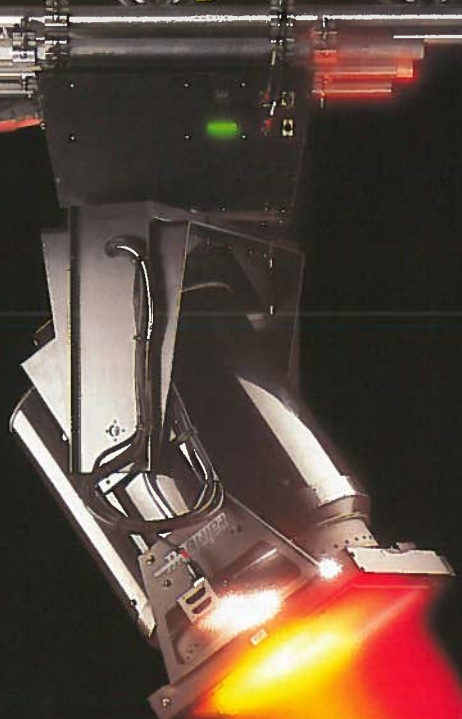
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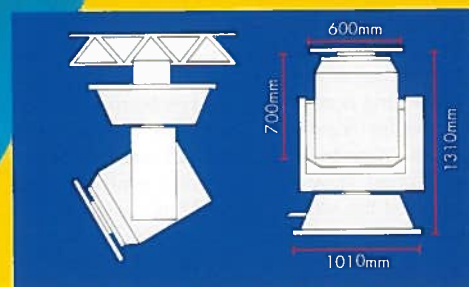
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DELS GO INTO OMNIDRIVE

Mark Cunningham went to London's Labatt's Apollo to join Del Amitri and their crew on the Twisted World Tour

For rock audiences and bands alike, London's Hammersmith Apollo (formerly the Odeon) is sacred ground. In my humble experience, however, I have tended to associate the venue more with heart-stirring atmospheres, than acoustic clarity. Recently, however, in the claustrophobic July heat, Del Amitri proved they could generate both. With a set drawn largely from their most recent albums *Change Everything* and *Twisted*, the Glaswegian Dels delivered a fine slab of no-nonsense rock, rather like The Faces with kilts!

The folksy acoustic moments which were more in evidence on earlier albums, played second fiddle to gritty blues tones, largely provided by the Les Paul-wielding Iain Harvie. Bass player and bushy sideburns campaigner Justin Currie, meanwhile, justified himself not only as a magnetic front-person, but also as a rare singer, whose live voice transcends even its best recorded moments.

Unlike many of the 40 or so Hammersmith gigs I have witnessed over the years, the sound approached an almost studio-like quality. Standing at the rear of the stalls, next to the FOH mixing platform, Currie's bass appeared forceful without the normal inherent muddiness. David Cummings' and Harvie's guitars cut through loud and clear, though not offensively, and every vocal uttering was clearly defined.

Much of this aural success can be attributed to FOH engineer Andy Dockerty's use of the much-applauded BSS FDS 388 Omnidrive loudspeaker management system and FCS 926 Varicurve dual equaliser analyser. Used in conjunction with each other, these two systems provide a full, real-time, graphical indication of the performance of a PA rig and allow the adjustment of a wide range of parameters. The Omnidrive itself incorporates two full-function four-way crossovers, parametric EQ, delays and limiters, with all functions accessible through the unit's front panel.

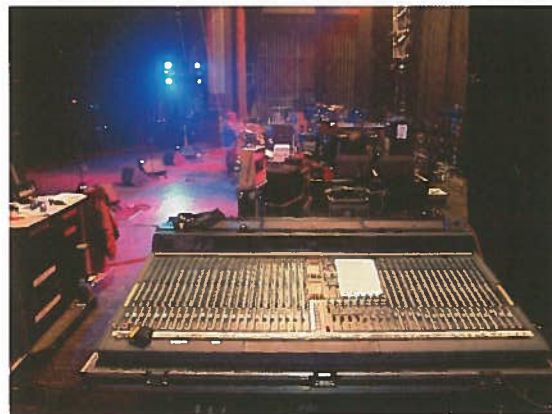
FOH SOUND

Dockerty, whose Liverpool-based PA company AdLib Audio provided the sound system for the Dels, is using the Omnidrive system for the first time on this tour, and claims it has made a huge difference as an aid to streamlining his tasks. "The Omnidrive is an amazing piece of kit. I'm not really into technology - I class myself as a straight ahead rock 'n' roll engineer who puts the faders up and sees what happens. I'm not naturally MIDI-minded and in the past I've tended to pooh-pooh new developments, but it was so easy to get my head around the Omnidrive once I'd been through it once or twice. It made me wonder why I never got into MIDI earlier. There are now less things for me to worry about - I just hit one button and all the audio events and scenes change.

"The system has a set of parameters that I would call the basic control system, such as crossover points, EQ shapes and delays. I then use the Varicurve to fine tune the EQ from show to show. We spent a fair amount of time working all this out for the first couple of shows, and we tend to leave the Omnidrive settings as they are for each date. Depending on the venue, I may play around with some of the EQ settings. On the first two or three shows, because of the facilities available, I made the mistake of



No nonsense rock from Del Amitri.



Soundcraft's SM24, designed with 'the engineer in mind'.

playing around with it too much. I was like a kid in a toy shop, asking myself 'what happens if I do this or do that?' But I went back several steps and since then everything has been fine."

Dockerty says that one of the major benefits of the Omnidrive is that its use is not limited to one speaker system, as most control systems



The BSS Varicurve used to fine-tune the EQ.

have been in the past. "We can now look at the future and plan to go out on the road with four Omnidrives and four control racks with different speaker systems, whether they be our DF1 or DF2 systems. If a system has a different shape to the next, you can just programme the Omnidrive to align them. It opens up a whole new way of thinking for PA companies.

"With most pieces of kit, you're always finding little characteristics that you think can be improved upon, but I haven't found anything about the Omnidrive that I'd want to change or add to. I can also say the same about the Varicurve, although it would be nice to have some more notching

facilities sometimes. However, if you need them, you can just throw a graphic in line for fine tuning. I use it as a front-of-house system EQ device and there are probably another 101 things on it that I'd never use it for. It's extremely comprehensive."

The AdLib Audio-designed ground stack PA has 12 DF1 full range cabinets and 12 DF1 subs. The two 18" subs are loaded with JBL 2241s, while the high pack has a JBL 2226 15" speaker, an RCF 750 10" and a JBL 2446 horn. AdLib's flying system, flown by Mann frames and steels, and Lodestar motors, consists of 12 DF2 full-range cabinets and four DF2 bass bins. Amplification is provided by Amcron VZ 5000 amps (subs/bass), C-Audio RA 4001s (mids) and RA 3001s (highs).

Dockerty explains: "We were using Amcron 1201 on the mids and highs until recently, but the C-Audio amps provide a much cleaner sound. On the cabinet side, we recently did some experiments with different bullets, but we've waived them since the advent of the Omnidrive, because I can put a little curve in to counteract the need. I find it's a far more consistent way of going about things. The biggest cut in there is about 4.5dB at 6kW which is just top-end tuning. There's a dip of

about 3dB at 500Hz and another small dip at 125Hz at 2dB which is on the main cue that I have on the system.

"Apart from the compression drivers, the most expensive cost with our high pack was the development of our own classic horn flare for the 15" and 10" speakers. It's all one unit which just slides into the cabinet. We discovered that using a plastic, as opposed to a wooden, horn flare gave us a cleaner sound that was about 0.5dB louder. It's quite an expensive way of doing things, but when you compare the costs of building our cabinets against some of the more established manufacturers, ours are still less expensive." AdLib's growing success in the major rock concert tour market may well multiply very soon with the completion of a distribution agreement. But the company has also progressed in the lower reaches of the pro-audio field.

Dockerty adds: "We're doing very well locally with what I call our cabaret cabinets, which are smaller boxes with components that exceed the quality of most other products in that market. It would be difficult for speaker cabinet manufacturers to design their products badly, now that the Omnidrive is around. It is a great tool for sorting out the crossover points." At the front-of-house position, Dockerty mans a 40:16:2 Midas XL3 mixing console, on which he uses 31 input channels, with the remaining channels reserved for effects returns.

In his outboard rack, he has a Lexicon PCM70 multi-effects unit, two Yamaha SPX 900 multi-effects units, a Yamaha REV 5 and delays via a Roland SDE 3000A and a Yamaha D1500. All his effects are MIDI-controlled via the Varicurve FPC 900. On drummer Ashley Soan's kit, the kick is inserted into a Klark-Teknik Quad DN504 compressor and a Drawmer DS201 gate before being returned to the XL3. His hi-hats and overhead mics are sent via two aux channels on the XL3 to a stereo BSS DPR 402 compressor/limiter. The snare's top and bottom mics are gated and compressed at the aux channels, then routed to the mix. Justin Currie's vocals are compressed by both the DPR 402 and the new BSS DPR 901 Mark II, then returned to the desk.

MONITORS

Debuting on the latter part of this tour as Del Amitri's monitor engineer is Dave Kay of AdLib, who originally joined as a PA rigger. Although Kay had gained much experience as a monitor engineer at a variety of events, this tour is the first time he has worked for a major band in this capacity. The Soundcraft SM24 console he is using is on loan to AdLib from the Hertfordshire manufacturer for this tour, and Kay is clearly in his element. He says: "A lot of thought has obviously gone into designing the SM24 with the engineer in mind and both Minnie, my predecessor, and I, fell in love with it. It has all the features you could ever want from a desk - everything's big and in the right place."

Kay uses 36 input channels on the SM24, many of which are dedicated to Justin Currie's Garwood in-ear mix. Kay explains: "Justin's the only one using the in-ear system, but he also uses wedges to add a bit of warmth to the sound he hears on stage. His wedge mix is predominantly drums, with hi-hat, kick and snare upfront, which is important for his timing as a bass player.

Although the system is great for monitoring most instruments, it isn't fully capable of delivering a meaty drum sound, so he needs the wedges to 'feel' the sound better. The in-ear system tends to make the user feel isolated, so we place an ambient microphone on top of each of the side-fills to pick up a bit of the



Andy Dockerty, FOH engineer.

on-stage and audience sound to make him feel more at home. I have my own pair of ear moulds which I plug directly into the Radio Station so I can hear exactly what Justin is listening to. But you have to be careful not to listen at too high a volume, otherwise the top end of your hearing just disappears. I tend to monitor his in-ear mix for the first three songs to make sure he's getting the right mix, and then I will listen only occasionally throughout the rest of the set."

AdLib's own-designed monitor wedges and fills are used extensively with BSS crossovers and powered by Amcron amps. There are three separate mixes along the front, two mixes at the rear and a rear pair of monitor fills to project the guitars into the middle of the stage for solos. Kay adds: "We're actually using Black Box side-fills which we just had lying around and put to good use. The bass bins have two JBL 2226 15" drivers while the mid-highs have two JBL 12" speakers and two JBL E140 2" horns. The drum fill has two JBL 15" drivers, plus a 2" horn. Accompanying the Amcron amps in the monitor control rack are two Drawmer DS201 dual gates, two Behringer MDX 2000 dynamics processors, four BSS FCS 960 dual mode graphic equalisers and four BSS FCS 360 frequency dividing/limiter system units.

An ingenious AdLib invention in use with Del Amitri is a pressure pad system for muting backing vocal microphones when they are not being used. Kay explains: "There is a pad situated behind each backing vocal mic stand which the singer has to stand on to gain access to the mic. When he does so, the mic is open, but it closes as soon as he steps back. It's a very useful tool for controlling sound bleed from drums and backline amps through the monitors, especially in smaller venues, and it obviously also helps the FOH mix."

LIGHTING

Production manager and lighting designer, Derek McVay, has worked with Del Amitri since 1989, exactly one year before the band scored its first major chart success with the hits *Nothing Ever Happens* and *Kiss This Thing Goodbye*, from the *Waking Hours* album. McVay uses a Celco 60 series II Special Edition console to control what he describes as a traditional rock 'n' roll lighting rig, designed to enable heavy saturation of colour when much white light is being used.

"The rig has been designed not for me, the manager or the band, but for the punters, and

I've seen some great local reviews while we've been on the road that confirm that we're capturing the audiences in the right way, McVay explains. "I'm not into aesthetic lighting design; it bores me. I like to use lots of ACs and big fans, and although some of the things I do might seem corny, if the audience leaves having had a good night, then I've done my job."

The truss is 44ft wide, trimmed at 25ft, with two 10ft legs descending like goalposts. There is a white cyc at the back with four Rosco groundrows on it, while on the floor there are three 1.2kW CCT Turbo Sils with gobo rotators, four bars of ACLs, three floor cans and four Megastar strobes. The front truss is exceedingly minimal with only six Strand Lekos and three Thomas four-lite Molefays. Aside from colour washes, there are four bars of four to each side of number five bulb-loaded Par 64s with simple colour.

The back truss has eight mixed bars with six different 650W CCT profiles on each and Par 64s with number one and number two bulbs. Each top and bottom lamp on the bar has a colour changer on it and they are hung on the truss vertically, then angled diagonally across the truss to form a 'V' shape. Here, there are six bars of ACLs and six of 1kW Strand Lekos.

"Everything is open white, apart from the Rainbow colour changers, which I've used for years and are so easy to work with," says McVay. "The vast amount of white in the rig is a deliberate move. All the band members, especially Justin and Iain, are very aware of lighting and they like to give me some feedback. There is no set look for each song. I might use some memories where I've built something up for a song, but there isn't a script as such because we like to keep things spontaneous. The look of each show will be slightly different. Most of the time, I will get an idea and just go for it on the night. It's the same way of thinking as the band's, because they are likely to change the set at short notice. They certainly never keep the same set for more than two shows."

Part of the reason for the rig's simplicity is budget constraint. Wearing both the production manager's and LD's hats means that McVay is constantly fighting with himself where creative and economical factors are concerned. "I go to the band's management and ask them how much they want to spend on lighting. It's then left to me and the lighting companies to produce the show within that budget," he explains. "The tour manager looks after the hotels while I look after the production, and we've worked happily like that with Del Amitri and Deacon Blue for about six years now. We've had the same lighting guys for about three years and lots of other guys in the crew have been with us for a long time, which I think is a reflection of the happy family atmosphere. I'm very concerned that I should work with nice, youngish people around me who are prepared to learn and be sympathetic to crew guys in every department of the production."

LIGHT OPERA

HAVE MOVED TO BIGGER PREMISES

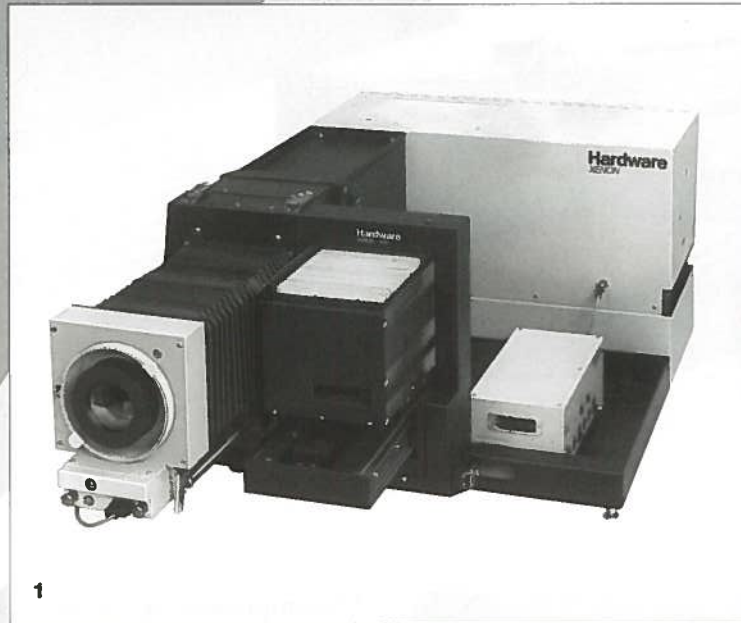
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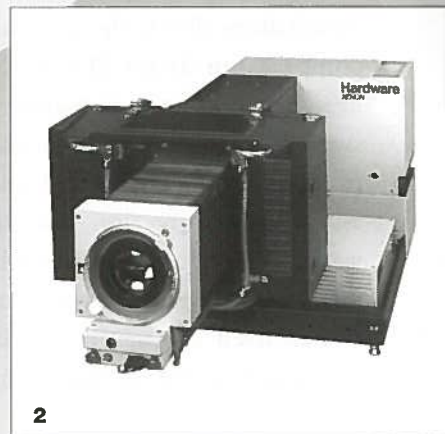
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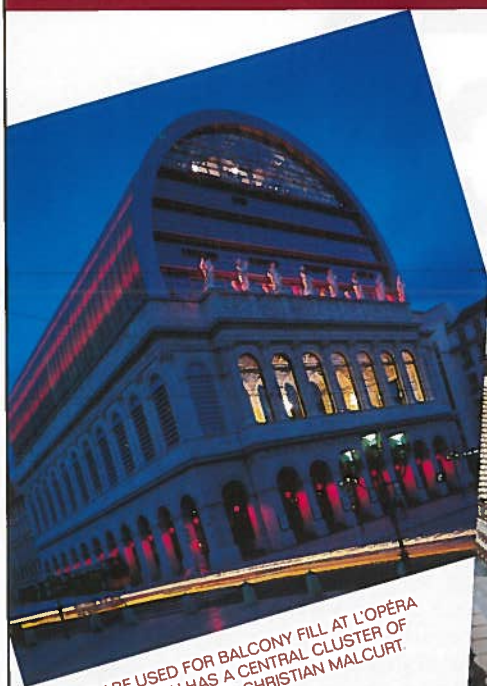
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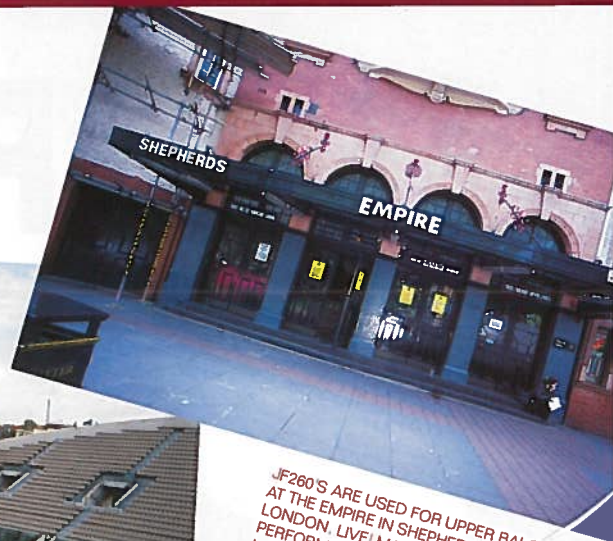
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Get Ready . . .

The PLASA Show is upon us once more, and this year's will be a record breaker. With more than 200 stands (compared with 170 last year), we can promise you a bigger and better PLASA than ever before. In the following pages you will find details of some of the new things you can look forward to. We regret that not every company exhibiting at the Show is included here, but a full review will of course be included in the October issue. See you there . . .

Cyberlight for TV

New on the Lighfactor Sales stand this year is the latest Lightwave Research Dataflash AF1000. Controllable from any DMX desk, or by Dataflash Mini or LCD controllers, the fixture emits up to 25,000 Joules of continuous flashes of a colour temperature of 5,600 degrees Kelvin. Any number of fixtures can be simultaneously triggered. Tube replacement is quick and simple and yoke-mountable weather resistant or non-weather resistant versions are available.

Also revealed will be the Cyberlight SV, aimed at the TV market, which retains the features of the regular Cyberlight, with a 75% reduction in operating noise. An upgrade to the standard Cyberlight will also be shown, along with High End's Studio Color automated colour-mixing wash luminaire.

■ Stand A58

New from Compulite

Compulite dealer Stagetec will be introducing Compulite's new CompuCAD package. This enables the designer to draw a simulated venue with stage, set and rig plan, into which lighting fixtures are placed, allowing a show to be plotted.

Also being launched is the new Photon lighting control desk from Compulite, capable of controlling up to 120 lighting channels and 48 colour scrollers, with built-in colour change software.

The result of a Compulite/Fly alliance will be shown - a combination of the Compulite universal moving yoke and the Fly Trichroma colour changing Fresnel, providing precise and quiet positioning via 8-bit or 12-bit DMX control and driven by a 16-bit microprocessor and high resolution digital servo system.

Also at the Show - the Animator 'Plus'.

■ Stand A164

White Light

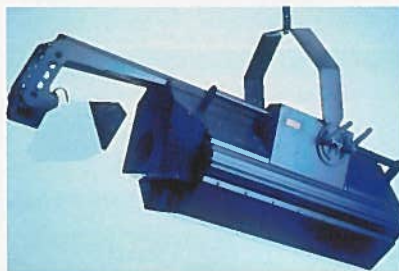
At PLASA White Light is showing a selection of the equipment available from its sales and hire stock, including the VSFX 90 projection system from DHA, with two new effects discs.

Also at the Show, White Light North will introduce its new Star Cloth, designed and manufactured in-house at its Halifax base. The Moving Light company will continue its previews of the Amptown Controlite PML, with a view to adding the lights, on a permanent basis, to their stock. There will also be another chance to see White Light's exclusive Dancing With Light production, with a specially-edited video of the show from PLASA 94 playing on the stand.

The new edition of the White Light catalogue will be available.

■ Stand A68

Martin's New PAL



Martin Professional will be launching the PAL 1200, a new automated framing spot. PAL stands for Profile Automated Luminaire, and the fixture achieves a world first by using a patented drive system that synchronises a pair of stepper motors on each side of the frame to enable fully flexible control in any direction, and fine adjustment to an accuracy of 1mm. In addition to this, the whole framing device can be swivelled by up to 22.5 degrees in any direction.

Aimed at the demanding environments of live performance and theatre, the PAL 1200 is based on the MSR 1200W lamp and incorporates a new profile-style optical system that makes the high light output of the MSR 1200W even greater. Accordingly, dimming is achieved by a specially-designed, very smooth dimming shutter, which can provide slow or fast fades down to full blackout.

Other features of the PAL 1200 include remote zoom from 13 to 33 degrees with linked remote focus, and pan and tilt via a large aluminium-coated mirror, for precise positioning of the beam. Four D-size rotating and interchangeable gobos are included on-board, along with a fully-variable frost filter.

All functions are fully DMX implemented, which also allows the possibility of adding 16-bit resolution to the pan and tilt, as well as elliptical tracking of the beam and full application of zoom and focus interaction.

■ Stand C42

Dance Aid Trust

Inspired by the Band Aid/Live Aid movement, the Dance Aid Trust has helped many disadvantaged people since its formation in 1986. A mega-raffle will be held on stand this year (courtesy of many of the exhibitors), along with a wide range of merchandise. The Trust relies exclusively on the goodwill of others, and could not continue without this support.

■ Stand A270

New From Tannoy

Tannoy is showing a number of loudspeakers, including the complete new SuperDual range. Also being launched is the CPA6 loudspeaker, the latest addition to the Contractor series, along with Tannoy's ceiling loudspeakers, the CMS 6.5 ICT and CMS 6 TDC and their range of monitors.

■ Stand B146

Rosco and ET

Following the merger of the theatrical talents of Rosco Laboratories and Entertainment Technology, the latter's IPS dimming and control products will be on Rosco's stand at PLASA this year.

Sophisticated engineering allows IPS dimmers to run inductive loads such as motors, and even control ballast-driven loads such as fluorescent lamps. With built-in surge suppression circuitry, IPS dimmers contain software that actually extends lamp life and has an internal protection against 'dead' shorts. A focus button allows on/off control without a board operator and there is an LED display for easy trouble-shooting. ET's dimmer strips and dimmer boxes, IPS dimmer racks, DMX512 distribution amplifier, status monitor, Nomad and the Eclipse 240 lighting control desk can all be seen on Rosco's stand.

Rosco will also be presenting the new Nivoflex Vario 19 light platform, a fast method of installing a stage. Although weighing under 30kg, the standard 2m x 1m platform can take a weight loading of up to 500kg anywhere on its surface.

Rosco will also be introducing a range of products aimed at stage and studio applications.

■ Stand A46

Harman Collection

The new Discreet Acoustics range of microphones from AKG will be launched on the Harman Audio stand. The range is aimed at places of worship, conference locations and theatres and comprises eight microphones, including goose-necks, boundary-layer designs and two models that can be hung from ceilings on non-twist cable.

Also on the stand will be a new version of Allen & Heath's popular GL4 desk, the GL4 ST, which includes a new stereo input block. Harman are also introducing a new range of high performance, multi-functional professional graphic equalisers from sound processing manufacturer DBX.

■ Stand B134

RCF Event Series

The RCF Event series is a new range of professional loudspeakers, composed of two and three-way bass reflex systems.

A feature of the Event speaker systems is the quality of acoustic signal reproduction with intelligibility and distortion-free high peak power levels (6dB above average). New materials such as Kevlar for reinforcing the diaphragm cones, carbon fibre for the diaphragm of the driver and special adhesives, have been introduced. The Event Series will be completed with the introduction of the Event 6000.

■ Stand B124

Avo's 4D Track

As well as their established Diamond II, Pearl and Sapphire consoles, Avolites will be exhibiting the 4D Track, which introduces the fourth dimension - time - into the realisation process of a show.

It acts as an interactive stage plan, alleviating the need for button presses, enabling the lighting designer to map out the stage and focus positions as required, and creates enormous time savings in the course of programming. The XY tracking allows you to move any number of lights.

■ Stand A94

We have something to catch your eye



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Crest's new Century

Crest's latest live production console, the Century Vx, will receive its UK launch during the Show, along with a new range of contractor amplifiers and upgraded NexSys control software.

The Century Vx is the flagship of the Century range - an eight sub-group 32, 40 or 52-input modular board, which includes an eight output matrix, eight VCA groups and four scene mutes as standard. In addition, the desk features a four band sweepable EQ with switchable EQ on the mids, plus true L-C-R panning. The desk has already been in use with Belinda Carlisle on the Rod Stewart tour, and seems certain to create great interest.

Other products receiving their UK debut include the new CKS/CKV modular contracting amplifiers - CKS for low-impedance use, and CKV for transformerless operation into 100V distributed lines. The latest NexSys 3 control software will also be on show, with staff from both Crest Audio UK and Crest Audio Inc on hand to demonstrate the equipment.

■ Stand A226

CP&P Add Colour

Pulsar Light of Cambridge will be launching their new intelligent colour wheel system for theatrical use, while Clay Paky, who will be sharing the Pulsar stand, will show their Golden Scan HPE, launched at Rimini earlier this year.

The entire current product range of both Clay Paky and Pulsar will be available for full demonstration.

■ Stand C44

Trantec Systems

BBM Electronics, who claim to be the largest manufacturer of DTI-approved radio microphone systems in Europe, is showing a wide range of Trantec's radio microphone systems, including the brand new computer-controlled system for the S5000 UHF microphones, which was itself successfully launched at PLASA last year.

■ Stand A52

CX from Celestion

PLASA has been chosen as the launch-pad for Celestion's new CX Series loudspeakers. Competitively priced, the CX series sound reinforcement systems have been specifically designed for the club market. There are four models in the range, two-way 12" and 15" cabinets, a 500W dual 15" full-range system and a 2 x 15" bass enclosure. All cabinets feature newly-designed cast-chassis drivers and the birch-ply enclosures are fitted with integral fly-points.

■ Stand B20

M&M add Source

Making its debut on M&M's stand at PLASA will be the new 230/240V version of ETC's Source Four high performance ellipsoidal spotlights. The 110V Source Four has become the industry standard in American lighting design and with over 75,000 units sold worldwide, is proving itself as a popular lighting fixture.

The Source Four was developed around the HPL compact filament lamp and represents a complete rethinking of ellipsoidal spotlight technology. It produces up to 40% more light using 45% less energy by combining a very efficient lamp with a cold mirror glass reflector. Superior optics provide crisp gobo imaging and sharp shutter cuts without halation and the cool beam dramatically extends the life of the shutter.

■ Stand A228

Sensible Ideas

Sensible Music, suppliers of pro-audio stage and studio equipment, will be highlighting its range of Clair Brothers sound reinforcement equipment at the Show.

Sensible won the contract to distribute Clair equipment throughout Europe earlier this year and established a separate division - Sensible Audio Sales - to handle the product. PLASA marks the first outing for this new division. Also on stand will be Garwood's PRSII in-ear monitoring system.

■ Stand B206

Lamba Line-up

As the sole distributor for KAM, Gemini, Stanton, Cerwin-Vega and AB Amplifiers, Lamba's stand this year will include KAM's new Encore range of DJ mixers, Stanton's complete range of DJ cartridges including Trackmaster, the new Platinum range of DJ mixers from Gemini and Cerwin Vega's new ProStax installation range of speakers.

■ Stand C49

New from Ryger

Ryger's stand will hold two new product releases - the Discovery 250ELC and the DC1000 controller with the brand new video display option.

The Discovery 250ELC is a 250W scanner with all the features of the Discovery 400HTI. The DC1000 is a fully-programmable controller for all Ryger's range of lighting. First shown at the Rimini show in March this year, it makes its UK debut at PLASA, with the additional feature of a video monitor to assist programming.

The light control side of Ryger has not taken a back seat at the Show, with the long-awaited release of the Touch Master, a 12-channel fully-programmable 0-10V controller based on the very successful PX12 controller.

■ Stand B202

Effective Low-Smoke

On show for the first time at PLASA 95 will be the Cirrus Lowsmoke from The Effects Company. It is claimed that this small unit revolutionises the way that the traditional low-lying fog effect is produced, as Martin Blake, technical director, told L+S: "With its super-cold operation, an electronic link to the Supersmoke machine, easily obtainable CO₂ supplies and a low-smoke effect that is really low, and stays low, the Cirrus sounds too good to be true - which is what most people actually thought - i.e. 'where's the catch?' Most users are impressed with the simplicity of operation and the fact that the unit is very dry."

Four complete Cirrus kits were sold to Mongolia this year, through German distributor, Amptown GmbH. Continuous demonstrations will be given throughout the Show.

■ Stand A186

First from Sennheiser

Sennheiser UK are exhibiting the world's first complete range of radio microphone equipment to feature channel switchability on all models - on both UHF and VHF frequencies.

The company's systems offer the standards of RF transmission and operating features on low and mid-price systems previously only available on a limited number of high-cost UHF models. Sennheiser will also be exhibiting a full range of Sennheiser and Neumann live reinforcement and theatre microphones, including the new Sennheiser MD735 ProForce vocalist dynamic and Neumann KM184 condenser microphones and MKE104 and MKE102 cardioid and omni tie-clip mics.

Also being shown are US-manufactured Anchor self-powered portable reinforcement systems. Anchor offers a full range of fail-safe mobile PA systems for a wide range of applications.

■ Stand B140

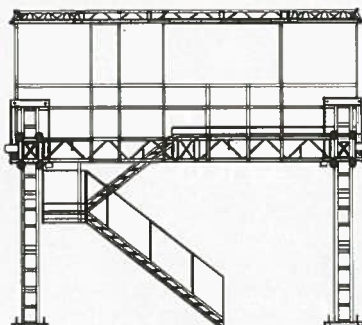
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PLASA Stand A 228/229

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PLASA SHOW HIGHLIGHTS

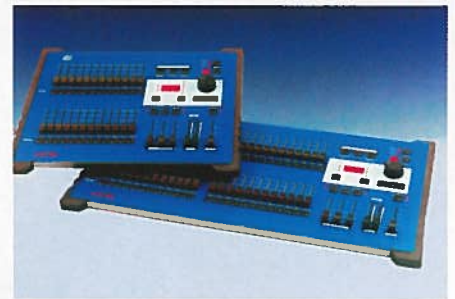
Discover the Atom

The highlight of LSC Electronics' stand this year is the new Atom lighting control desk, aimed primarily at the smaller scale lighting operator and novice users.

Simple to use, yet still providing the power and features demanded by the more experienced, the Atom boasts a host of facilities, including 12 and 24-channel models with 'wide' mode for doubling the available desk channels, soft-patching to 99 dimmers, nine pages of memories with scenes chases able to be replayed on lower bank preset faders, individual 'in' and 'out' time faders, true dipless crossfade, two preset masters plus 'Grab', quick preview and edit facilities via a function button and edit wheel, DMX512 output and a range of add-on options, such as a disc drive memory back-up unit.

The Axiom will be shown again, but will have its recently-released version 1.1 software exhibited, which includes a fixture personality library of the more commonly-used moving lights available.

■ Stand A211



The Atom lighting control desk from Australia's LSC, available in 12 and 24 channel models.

ShowCAD Update

ShowCAD, the PC-based lighting control system, will again be demonstrated on the stands of distributors Cerebrum Lighting and Coe-tech, as well as controlling the stands of Lightmasters UK and Terralec. The software has undergone considerable enhancement and improvement since last year's PLASA Show. Recently introduced features include MIDI show control, real time clock, MIDI system exclusive load/dump, SMPTE merging (to integrate a number of SMPTE scripts), new fixture specific templates and improved auto-generate features for comprehensive automated scene creation.

■ Stands A138/B52

G300 from Le Maitre

Le Maitre will be exhibiting their full range of smoke machines and pyrotechnics. Taking pride of place in the smoke machine range is the new G300. This uses 'Genesis Technology', and is claimed to be the first intelligent smoke machine capable of operating in all environments. The G300 is DMX compatible, has a multi-function digital read-out and continuous smoke flow. As a dual function machine, in its 'haze' mode the G300 produces 'Micro Haze', which replaces the 'cracked oil' effect. In its 'high power' mode the unit produces continuous, clean, dry white, non-toxic smoke.

Other machines on show include the MicroFog, Mini Mist, Show Mist, Red Devil, Pea Souper, LSX low smoke converter and the Bubble Gun. Le Maitre's pyrotechnics division have been busy this year working on a number of world tours including Take That and Rod Stewart. On show will be the full range of cartridges and maroons, as well as the Pyroflash 6/24 and the Pyroflash 2.

■ Stand A170

K2 from Optikinetics

Optikinetics will launch a new generation of projectors at this year's PLASA, led by the innovative K2. Aimed at the advertising and display markets, the K2's features include a precision die-cast aluminium body, computer optimised optical design with dichroic filter to prolong gobo image life, 2,000hour MSD200 metal halide lamp, lightweight electronic ballast, advanced 'dual-ducted' forced airflow cooling system, modular 'add-on' sound animator, EMC shielding and universal 'plug-in and go' system, compatible with grids anywhere in the world, without adjustment.

■ Stand B178

Formula's Apollo

The Formula Sound technical team has been carefully assessing fixed format mixers with a view to offering the right product to the UK market, and the result of this research is the Apollo, which will be launched at PLASA this year.

The Apollo is a seven-channel disco mixer with two mono and five stereo channels. Features include three-band EQ, split cueing, push-button PFL and a microprocessor-controlled beat compare system for easy synchronisation of tracks. It offers high build quality and low noise and distortion, and is supported by the same high level of back-up that applies to the award-winning Formula Sound range of audio products.

■ Stand A82

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The Gel-Stream comes ready to go, straight out of the box. Just fit the scroll, plug it in and away you go. No separate Power Supplies or Splitters to boost the price up. You won't need anything extra to change the scroll either. Gel-Stream is the world's only cartridge-loading colour changer. No tools, no de-rigging, simply snap-out the cartridge and snap-in another pre-tensioned 16 colour combination, to ensure a perfect scroll time after time.

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RJ Step Up DMX

Robert Juliat will be showing a range of 27 discharge products for installation and display projects. Using 700W HSR and MSD to 2000W HQI sources, the range offers both profiles and Fresnels. The 700W profile is based on the 600SX series and offers the same features, including as shutter locking and internal glass holder. The larger 1200W and 2000W profiles are based on the HMI/MSR SNX profiles, with high resolution fade and DMX control.

The company are also introducing a high resolution system for DMX faders that can increase the number of steps from the sometimes limiting 256 steps up to more than 7,000. This system, used on the SNX HMI profile, gives a fade indistinguishable from that of tungsten.

Also new on the stand will be the Panther lighting desk from AVAB, seen in prototype form in Paris in February. Using the same software as the VLC board, the Panther runs on a separate PC with the lighting board acting as an interface, and can control up to 6,000 channels or attributes.

An updated version of the Ivanhoe followspot will also be on show, along with the acclaimed Pure SX profiles.

■ Stand A174

Smithfield deal NTL

Smithfield Electronics have signed an agreement to distribute the products of German amplifier and speaker manufacturer, NTL. The NTL product range, developed for use in situations ranging from open-air stadiums to small theatres, will be on show at PLASA, alongside Smithfield's varied selection of lighting effects.

■ Stand C48

Ultimate on the Case

Ultimate DJ Accessories will introduce the Case Logic CD storage system. The Compact Disc Wallet (CDW) range feature rugged nylon wallets containing chemically inert polyethylene sleeves that safely hold the CD and corresponding booklet.

The Pro-Sleeve is a replacement for the jewel case, and although it is slightly larger than the jewel case, it is thinner, allowing four discs to be stored in the space taken by a single jewel case.

■ Stand C24

Shure Auto Mixer

Shure Brothers will be introducing the new SCM810 automatic mixer on the stand of UK distributor HW International. This eight channel device is compatible with virtually any professional microphone or line-level signal.

To minimise poor audio quality caused by multiple open microphones, the SCM810 is equipped with Shure's IntelliMix circuitry, which activates only those microphones in use. Other features include an automatic gain adjustment which works as additional microphones are activated, adjustable EQ for each input channel and linking capabilities which meet the needs of systems requiring up to 400 microphones.

Ideally suited for speech pick-up in any multiple microphone system, the 1U SCM810 also features active balanced microphone and line-level inputs and a line-level output, along with 48V phantom power selectable for each channel.

■ Stand A132

New from Vestax

Vestax will introduce a range of new products, including the PMC-05PRO scratch mixer, which features a 'double panel system', to provide a smooth work surface. The line/phono switches can be rotated to operate in any direction. The crossfader is photo coupler operated, reducing wear and tear on the fader and allowing the curve on the crossfader to be adjusted.

Also new is the PMC-50 mixer, incorporating features such as 12-input capability and input sockets for one line on each channel on the front panel to accommodate DAT and cassette players. Also on stand, will be the Streetmaster 5005 mixer, a version of the well-known PMC-05, and the DJ-600M is a hi-fi amplifier for the 'bedroom' mixer.

The CDX-25 is a new CD player which features instant start, auto-shutdown after 30 minutes, seven-segment LED display and a stand-alone programming unit that will connect to the player to expand its digital capabilities. The HDR-6 and HDR-8 direct-to-disc recorders will also be on show, incorporating on-board digital mixing and processing.

■ Stand B136

Zero 88 Box Clever

Zero 88 will be launching the Linebacker, which, they claim, is one of the cleverest lighting control systems to be developed since the hugely successful Sirius. The Linebacker contains four separate functions combined in a single box: a comprehensive back-up system to any manufacturer's DMX console, a 60-cue memory lighting desk in its own right, a comprehensive sequencer and a DMX cable tester.

■ Stand A64

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Biggest ever for A-T

Audio Technica is planning its largest and most interactive exhibition ever. New are the AT-MX341a 'Smart Mixer', based around the earlier AT-MX341, although completely re-engineered to incorporate a number of key changes, including: transformerless input design to minimise noise levels, switchable mic/line-level on inputs and output, master output level control, phantom power selectable for each channel, manual mode switch permits use as a conventional mixer.

Also new are the ATH-M40 and ATH-D40 studio phones, which are designed for long lasting reliability and comfort, and aimed specifically at the professional monitoring and mixing market. As an added incentive to visit the Audio Technica stand, the firm will be giving away a pair of their new best selling studio phones each day.

Further additions to the Audio Technica range are the ATH-COM1 and ATH-COM2 combined microphone and headset units. New to PLASA will be the ATM75 and PRO8HE headworn microphones. The ATM75 is a cardioid condenser microphone which comes with battery and pre-amp module and has a frequency response range of 60-15,000HZ.

Also exhibited at the Show for the first time will be the new Ramsa WS-A35E near-field monitor and the WS-K40 bass bin. Audio Technica will also be introducing a variety of other additions.

■ Stand A220

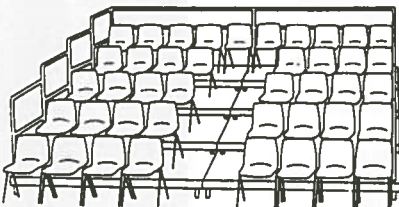
New-Look Mark IV

The newly-formed Mark IV Pro Audio Group will be featuring the new DN6000 audio analyser and the recently-launched DN3698 hand-held remote controller from Klark Teknik. On stand from Midas will be the popular XL4 live performance console, the XL200 FOH and stage monitoring console and, seen for the first time in Europe, the XL42 pre-amp equaliser system. From DDA will be the QII VCA mixing console, the QII monitor console and the QMR console.

■ Stand A187

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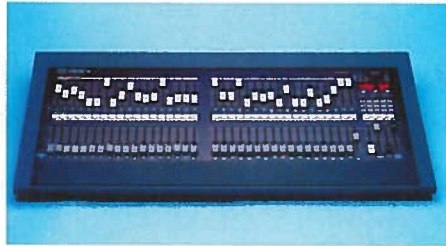
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Black Box AV

Black Box AV from West Glamorgan will be introducing their new background music product range at PLASA. The line-up incorporates five music delivery products, three tape and two multi CDs, with four matching amplifiers. The company has been manufacturing badge products for UK BGM installers for six years, but has now established its own manufacturing operation and dealer network.

■ Stand B110

Arrival of Zodiac 36



Multiform's new Zodiac 36 lighting console.

Multiform Lighting will be releasing the new 36-channel version of their Zodiac level memory lighting board at PLASA 95. The Zodiac boards offer many technical features at a price that make them affordable by schools, drama groups, bands or anyone with a restricted budget needing all the advanced facilities of a professional theatre desk.

All Zodiac boards have 180 level memories and can be operated in either Paged Sub-Master mode or in Sequential Scene Mode, using the 'Go' button. The boards also provide flash buttons and a sophisticated chase section.

In addition to 0-10V analogue outputs, the boards feature a DMX512 output with a 128-channel soft patch. They are also equipped with a MIDI input and output capability and the option of full remote control via MIDI Show Control. Shows can be saved to a credit card-sized RAM card for permanent storage.

■ Stand A140

Transtechnik in Control

Transtechnik GmbH will be launching two new lighting control systems at the Show. Prisma is the new flagship in the company's family of control systems, with 20 masters, dual crossfade system and a selection of accessories. Features include four encoders and trackball for easy control of moving lights, positionable spotlights and colour changers. The Prisma is aimed at large theatres, TV studios and opera houses.

The entirely updated, compact T20-M lighting control system comes with 120 channels (expandable to 999), multi-functional digital fader wheel, convenient crossfade system with splitfade, colour monitor, sophisticated EMC measures (with CE label), network connection, various standard interfaces and disc drive.

■ Stand A200

Adam Hall show Fane

The complete range of Fane Acoustics' drive units will be shown on the Adam Hall stand, alongside a new range of high-power modular co-axial drive units intended for use in on-stage monitors and sound reinforcement.

Also on stand will be Wharfedale's new Force 3180, a high-power, wide-dispersion loudspeaker aimed at karaoke, music systems and cinema surround-sound applications. The Force 3180 uses two 10" woofers and two ferrofluid-cooled 25cm dome tweeters. Also new is the Force 1LT and Link 600 series 2, the latter a compact two-way loudspeaker with built-in amplifier, featuring balanced line inputs and level control.

■ Stand B174

Building on Success

PJ Lighting are reaping the benefits of taking space at last year's PLASA exhibition, and will have an even bigger stand at this year's Show. Their products have gained the confidence of importers in Holland, Germany and Eire (all contacts made at PLASA), who are ordering in greater quantities and have forced the company to expand their Birmingham factory work area to boost output.

■ Stand B143

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Doughty Stand Firm

Doughty Engineering will be launching the Strata and Alpha winch stands. Despite being broadly based on the Zenith truss lift, both of the new stands have tripod leg assemblies (which feature an integral adjustable leg system), and are supplied with casters as standard. They are therefore ideally suited for use on film locations or in a conference situation, where stability, reliability and manoeuvrability are of paramount importance.

The latest manifestations of Doughty Engineering's highly successful Zenith truss lifts will receive their UK debut at the Show. Available in two models (450 and 600), the MkII Zeniths offer a multitude of refinements over their predecessors. Gone are the exposed winch cables, pulleys and manual 'lock-off' safety pins - all cables now travel down the inside of the central mast with the winch drum itself fully enclosed. To increase manoeuvrability when positioning, the new Zenith is fitted with large 125mm dolly wheels, making rigging of the unit a relatively easy undertaking for one person.

■ Stand A1

Artistic Touches



Artistic Licence will be launching Scroll-Control which has the ability to control up to 30 scrollers and which offers a total of 200 colour memories. These can be linked together in sequences with independent step times and can be programmed to loop automatically or wait either for the 'Go' button or for an external trigger from a console.

The company will also be introducing the DMX Dongle, which plugs into the printer port of a PC to provide a real-time DMX512 receive or transmit capability.

■ Stand A130

On the Right Track . . .

Stage Technologies have pioneered the use of computers in scenery control, devising systems for moving scenery for top shows such as Sunset Boulevard and Miss Saigon. At PLASA, all aspects of control - from consoles and tracking systems to drives, motors and winches - will be on show. Stage Technologies' staff will be on hand to explain their comprehensive service, including design, supply, installation and commissioning of equipment.

New at PLASA will be the Tow Track, a drive system which has been welcomed as a flexible alternative to traditional methods of moving curtains or scenery along horizontal rails. Also new is Juggler!, a compact version of the Acrobat desk, which allows the operator to control the movement of scenery and power flying systems.

■ Stand A191

RVE Dimmers

ESP is launching two new additions to RVE's dimmer range at PLASA. The System HDX is a virtually silent, transistor-based dimmer incorporating a systematic protection system. This system analyses the dimmer status and selects the most suitable option available.

The System HDL is a new pluggable dimmer available in 2 x 3kW, 5kW and 10kW modules, giving pluggable dimmer security at the cost of non-pluggable systems.

■ Stand A122

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Intimidation's Don 2

Intimidation will show their new audio mixer, the Don 2, a revised and upgraded version of the Don mixer, which was launched last year.

The BPM monitor remains the same, this feature being a visual aid to see clearly when two tracks are in (or out) of sync. The Don 2 still features the two sets of bass, mid and top frequency Kill Switches. The drum base has a new detector button and there is also a new FX channel, a revised headphone monitoring system and an attenuator on the rear of the unit, as well as new pan controls and transform buttons on either side of the cross-fader for scratching/transforming.

■ Stand C48

HELL's Line-up

Howard Eaton Lighting Ltd (HELL) will be launching a number of new products, as well as exhibiting some familiar lines, at this year's PLASA. The miniature ripple water effect, ideal for short to medium throws, has been updated to improve cooling, yet remains compact and lightweight.

Two new radio control dimmers, available in both DWM and DC formats, have been designed to remain compatible with the previous radio control systems. Both feature an increased specification, including full short-circuit protection, a lamp test button and indicators to show power, signal and fault presence.

The DMXport Inject is the latest addition to the growing range of DMX products. It is designed to allow sources of DMX from alternative locations to be connected to the DMX network.

In addition to the above new products, the company will also be launching the SoftCue Six - a budget version of the popular SoftCue product - and solution dimmers from Bytecraft, for which they are the UK distributor.

■ Stand A176

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Peavey Unveils Latest

Peavey Electronic's new extensive factory and distribution property in Corby sets the backdrop for new products to be launched at the Show.

The HiSys-XTF range of enclosures are based on the components, specifications and performance of the company's portable HiSys products. The new range takes the HiSys-1, HiSys-2 and HiSys-215 SUB products to a purpose-designed installation format, suitable for a wide range of fixed installation applications. Incorporating Peavey's Black Widow speakers and 22XT horn driver, the HiSys-1XTF and HiSys-2XTF enclosures are trapezoidal, whilst retaining the box volume of their portable stablemates.

■ Stand A224

Selecon's High Profile

Selecon will launch their new range of 1.0 and 1.2kW condenser profiles at PLASA. The range comprises three luminaires: narrow 9-21 degrees, medium 15-31 degrees and a compact wide 28-52 degrees.

All use a double condenser optic design to maximise the light output, whilst the medium and wide-angle luminaires use a three-lens zoom combination to remove the distortion or key-stoning commonly found with wider angles. Engineered with Selecon's 1200 luminaire body, the condenser profiles provide fast and simple access for alterations. A new screw clamp gobo holder is introduced with the range.

■ Stand A166

Four from Denon

Alongside their award-winning DJ CD line, Denon will be exhibiting four new products. The SMX-2000 Digi-Scratch is a compact stereo mixer for DJ/club applications. Basic effects are switched, such as Stutter and FWD/Back sampling, but the CD-sized Digi-Scratch turntable allows manual control of the sampled effects. The DN-1100R is an 'instant intro' MD recorder player, intended for a broad range of applications - wherever instantaneous response is needed. The DN-610F is a combined CD player and cassette deck, designed for any installation where constant music is required, incorporating a Hologram laser pickup with long life auto-adjustable Digital Laser Servos as used in the DN2000F MkII. Lastly comes the DN-1400F 200 a CD changer which can hold 200 CDs, and provides uninterrupted playback with seamless transitions. Full PC/Macintosh interfacing and control are available.

■ Stand B204

Projection Screens from Bretford

Bretford Manufacturing will be showing their comprehensive range of projection screens. Both electrical and manual operation screens are available, with specialised viewing surfaces for video projection. The ranges available include the Series 700 (up to 12ft wide) and 900 (up to 24ft wide) Electric Screens, designed for wall or ceiling installations.

The company will also show their range of television mounting systems, all of which are available in either yoke or platform styles and are fully adjustable.

■ Stand A197

Celco Explore New Technologies

Visitors to the Celco exhibition at this year's Show will be amazed at the number of new products launched, and attracting the lion's share of attention will be the Explorer EPX.

Designed from a 'clean sheet', the desk expands on the tried and tested formula of Celco's Pathfinder to offer 120 channels and a host of features including colour SVGA monitor display of channel output, memory and sequence preview, speed clock and overview, stack crossfade status, cue name, number and time fade details and cue legends to correspond with the console's 12 cue faders. Innovative features include stack and chase maker which reduce programme time, a raft of sequence effects including wild step, build and volume, and an assignable programmable sound-to-light section.

Celco have employed some of the Explorer technology in new versions of the Pathfinder and Navigator consoles. These products now also share the EPX affix and existing users will be offered the upgrade packages at reasonable prices. The Aviator EPX now features 512 control channels, comprehensive concert and theatre playback section and a moving lamp library. Finally, the Celco Video M9 makes its UK debut, following a successful year introducing the concept of DMX controlled video wall splitters to the world market.

■ Stand B26

Missing Persons . . .

One familiar company missing from the PLASA Show this year will be Millbank Electronics from East Sussex, whose other commitments, particularly the major new contract at Hong Kong airport, have forced them to become reluctant absentees this time around.

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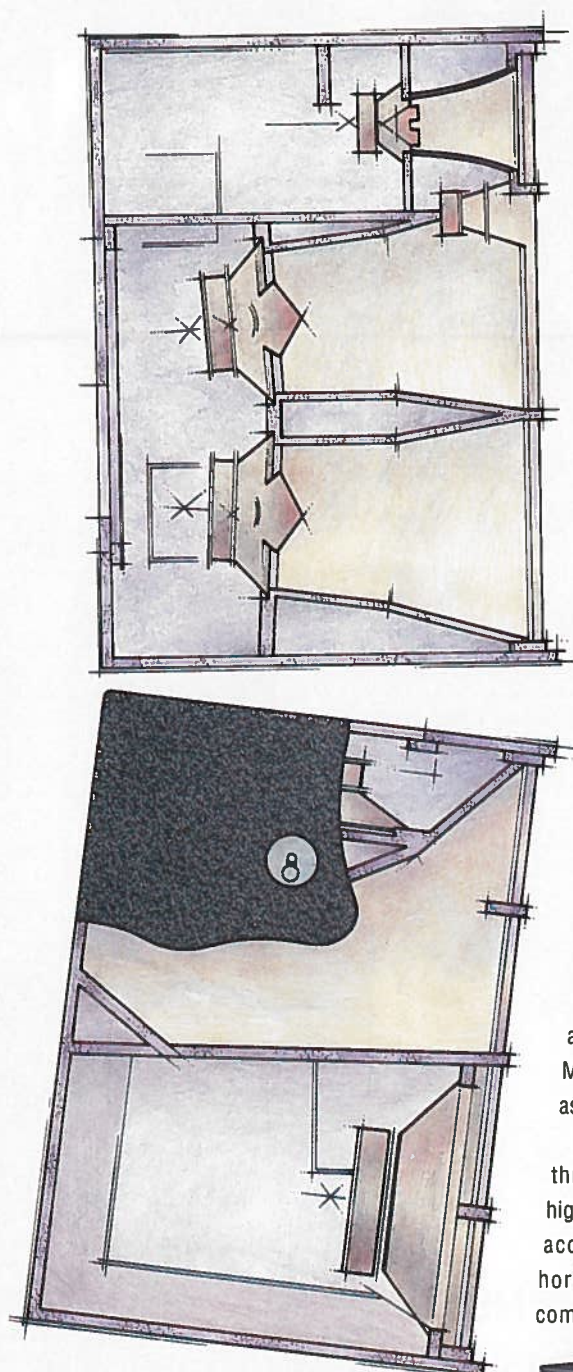
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a new approach



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

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



High-mid vocal definition is assured by the use of an ultra low distortion cone driver covering the frequency bandwidth from 850 Hz to 3.5 kHz.

The Wavefront 8S features a unique horn/reflex design incorporating both 15" and 18" drivers for fast transient performance and extended sub-bass. Entirely separate 15" folded horn and 18" reflex sections can be driven in parallel or powered independently. This remarkable hybrid configuration results in a dynamic sub-bass with an efficiency of 104dB. Use of a low crossover point between the Wavefront 8 full-range enclosure and the Wavefront 8S sub-bass means that you can choose whether to ground stack or fly the Wavefront 8S to suit the needs of the venue whilst not compromising the acoustic performance.

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HISTORY IN THE MAKING

Ruth Rossington visits the Borehamwood headquarters of Harkness Hall Ltd

In March this year, Harkness Screens & Hall Stage Ltd changed its name to Harkness Hall Ltd. Nothing particularly significant in that you might think, until you learn that for the company, this marks the closing of a chapter on a combined history spanning nearly 170 years. More importantly, it is the gateway to a new era of expansion and development.

If you don't already know the company name (because of the intricate way in which all strands of the current operation came together, I have covered its history in a separate panel), the chances are that you are more than familiar with its work, for Harkness Hall Ltd is one of the leading companies in the manufacture, supply and installation of both staging and screen equipment to a large number of theatres and cinemas worldwide. Under the guidance of managing director John Lawton, with Eddie Daniels, Chris Hitchens and Roberta Peek as co-directors, the last four years has seen the company literally come of age.

There is so much to tell you about this company, I hardly know where to begin. Its modern face is a far cry from the early days of the two founding companies, and whilst all around the operation's Borehamwood site in the heart of the UK film and stage industry, are reminders of the traditional heritage of each, there is a new mood of determination that has a definite edge to it. The company now has 84 employees, all on one site. The facilities they have at their disposal are probably the most comprehensive in the country. All production is handled here, which covers a total area of 91,000sq.ft, 68,000 of which is used directly by the company.

The list of blue chip companies Harkness have worked with, both ashore and afloat, reads like a 'business' roll of honour, and the list of technologies on offer is equally impressive. The company supplies a range of specialised systems including Imax, High Gain, 3D, Special Effects and Jump-Through screens ranging in size from a modest 1.27x1.27m to



The company supplies virtually all the screens for Imax theatres.

world beaters such as the giant 33x25m screen installed in Korea for Expo '93 - now featured in the Guinness Book of Records. In fact, Harkness Hall have produced some 96 Imax screens for shows all around the world. The only UK example is at Bradford's Museum of Photography, Film and Television, and by no coincidence - the UK's largest permanent screen. On the stage engineering front, the product range is vast, led by the comprehensive range of curtain track systems.

Over the last two years, demand for product has risen dramatically and the company have implemented a planned expansion programme designed to enhance capabilities in all areas. Expansion means investment, and this is a

constant theme of the recent Harkness Hall story. More capital has been injected into the company in the four-year period since 1991 than in the previous 25 years.

An additional screen fabrication shop has been installed and over £100,000 has been spent on new plant and machinery. As a result, the production capacity of the site has been increased and they are now gearing up for their best year. Health & Safety is also a priority on the agenda and there has been heavy financial commitment to this area. The next phase of investment will see the setting up of a European sales office and manufacturing facility.

The policy of reinvestment has paid dividends: the stage and screen divisions are both prospering in their own right. On the screens side, headed by Eddie Daniels, the market has expanded greatly and there are now many more screens in the UK. The company is probably the largest manufacturer of cinema screens in the world with 1million sq.ft coming off the production line every year. Translate this into a more digestible format, and you have roughly enough screens to cover five or six football pitches a week.

Whilst the US and Far East continue to be major markets, it is the growth of demand in Europe, which has largely stemmed from the unshamed

Americanisation of cinema, that has confounded expectations. The flea-pit cinemas of yesteryear are gone and US influence has largely sanitised the whole process of cinema-going with large, out-of town multiplexes. In world terms, cinema attendance is on the up. Countries such as Poland, Czechoslovakia and Hungary are talking positively about building new cinemas and there are even plans for six major multiplexes in Moscow.

Theatre on the other hand has reached something of a plateau. There is a great deal of refurbishment and technical upgrading taking place, but little in the way of new theatre building. The Millennium Fund will certainly



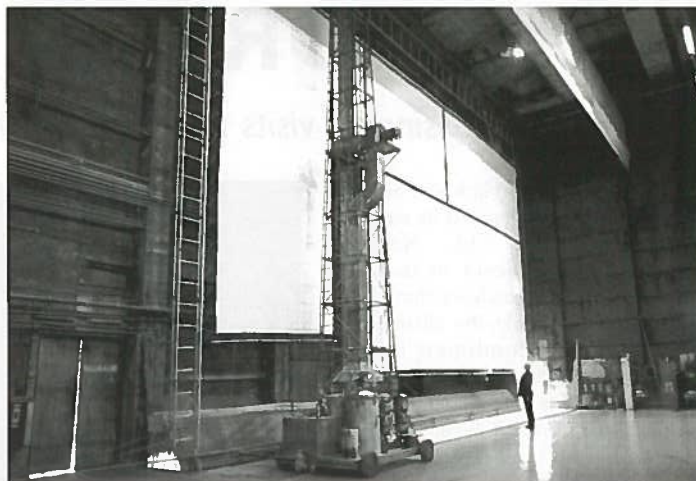
Harkness Hall provided the staging for the Hambro Life convention.



A graphic representation of how a 3D effect can be achieved.



MD John Lawton and Chris Hitchens, director of the stage division.



Divider curtain in screen coating area.

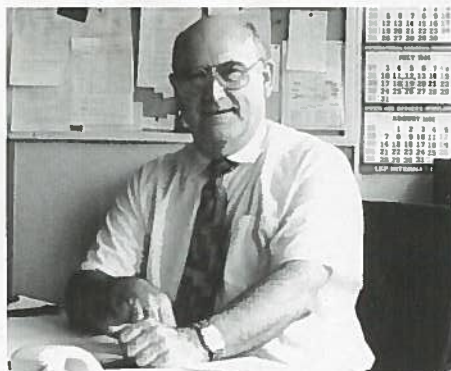
stimulate the market, though nobody can be certain to what extent. The role of the stage engineering division, under Chris Hitchens, has not diminished though, and they remain the main supplier of theatre stage components in the UK. The overseas market is a tougher nut to crack, as the engineering can be manufactured locally. The company therefore concentrates on developing specialised items, often with a bias towards electronic systems control, for which they are making something of a name for themselves.

Whilst still doing well in the traditional markets, the division is forging into new areas, and one of the company's growth areas is crematoriums. (I'm not sure it's in the interests of good taste to repeat one story I was told; suffice to say, it involved a coffin, a lift and the repeated return of the dear-departed due to a technical malfunction). Of course, Hitchens is at pains to point out that this equipment was not supplied by Harkness Hall.

Whilst the two divisions continue to plough their own furrows, recent years have witnessed much more fusion between the operations and the two often work hand-in-hand with the obvious planning, manufacturing and installation advantages of a single-source service. The company has discovered that business can come in from strange tangents, so they pinch some technology from the screens side, some from the stage side, combine it with some engineering glue and end with an amalgam of all the company's engineering skills.

Not surprisingly, this synergy has had a direct result on company results: in 1991/2 the turnover for the first year after the management buy-out was £3.5million. The trend has continued and projections for this year indicate a turnover of £5million.

Figures on paper are all very well, but it's only when you tour round the site that you



Eddie Daniels, sales and marketing director.

begin to take in the scale of the operation. Descriptions of the perforation techniques or coating systems are punctuated by historical anecdotes that would please any film buff. Screens of all sizes are coated and light inspected in what was originally a massive sound stage for the film industry and it here that Herbert Wilcox directed Anna Neagle in the British Lion Pictures production of *Odette*. Echoes of the past aside, there are more immediate reminders of the heritage of the company. On a desk in the corner sits a record book which details the impressive export of screens to over 54 countries in the last year alone.

Throughout it's clear that this is a company that works as a team (and believe me, I met and spoke with just about every one). The hierarchical structure is merely on paper and in reality it is much more of a collective that works extremely successfully. Alan Cohen, is one of the more familiar faces outside the company, being one whose main responsibility is to get out and generate stage business. Converting that into a finished installation is a dedicated team, with Roberta Peek leading the installation and service side, and Richard Wright, Maurice

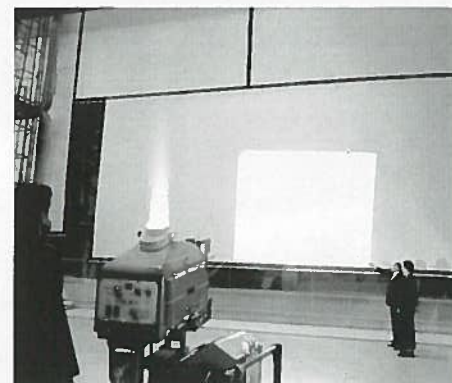
Alvey and Chris Osborne spearheading the technical sales department.

Charles Gwilt is responsible for new business development, encouraging companies to look to Harkness Hall for solutions to their problems. Harkness Hall are constantly on the lookout for new markets and are currently concentrating their efforts in France, where there is now a dearth of stage engineering companies. The company are also promoting the contract packaging side of the business, especially in the Middle East, and are keen to establish themselves as the one-stop shop - the engineering equivalent of a supermarket, if you like. Further inroads are being made into the boardroom and small-scale presentation market.

In part, this has led to the company developing its electronics and computer control expertise. By way of illustration, there is a major project underway for RTE in Dublin, where a new drive system, based on a computerised hoist operating set-up, is being installed as part of a £223,000 project. The system allows the multiple or single operation of 45 hoists in banks of 10 - all of which is disk-based to allow the unit to be programmed in the studio, creating instant turnaround.

A host of other projects are on the books and the last few months has seen installations completed in Rome, Vienna, Berlin and Maastricht, with others in the Far East, Spain, Portugal, Denmark and the US scheduled for completion shortly.

The recently launched industrial division, managed by Bob Tate, is now bearing its first fruit. Harkness Industrial was a natural consequence of the company's determination to use all its existing skills and technologies to maximum effect. This division has already built up a useful roster of clients (among them Walkers Foods and the RAF) to which they supply divider curtains and other engineered



Part of the screen manufacturing process: perforation, seaming and the all-important quality control.



Colin Riley and Lee Witchelo with the computer-based drive system, heading to RTE in Dublin.

systems, and the company's emphasis on standards will surely promote the interests of this division yet further.

This brief overview of the company has barely scratched the surface of the many undertakings of the Harkness Hall operation. To get the complete picture you need to take a trip to one of the last remaining outposts of the British film industry at Elstree, and enjoy a different kind of 'Studio Tour' where you can learn more about the company that is largely responsible for the production and engineering of the 'small factory' that exists in the majority of theatres and cinemas.



Banks of masking controllers, lined up for delivery to a new multiplex.

HISTORY IN THE MAKING

Originally two separate companies, Harkness Screens and Hall Stage found their paths crossing so frequently that in the mid-eighties the two companies finally became one, the end of a long history of rivalry. As cinema has played such a large part in this joint history, let's rewind the film and start the tape at the beginning. For Harkness, the opening credits came in 1929, just two years after Al Jolson made movie history with *The Jazz Singer*. The company's early days, guided by Tom Harkness, were devoted to the production of mutton cloth screens and, as the advent of talking pictures had placed cinema's star in the ascendant, Harkness naturally rode on the fortunes of Hollywood and British Studios.

Improvements in the manufacturing process meant that cloth soon gave way to plastic, and a further boost came when both the welding process for the seaming of screens and the process of coating were patented. These post-war developments led to the introduction of perforated screens, which greatly improved the cinema-going experience and, combined with the advent of Cinemascope in the fifties, kept Harkness extremely busy.

At the height of cinema's popularity, Harkness was installing no less than six complete systems a week, and in so doing, attracting the attention of larger companies. In 1950, the company sold 80% of its operation to the Rank Organisation, whilst retaining a 20% share-holding. This was a shrewd move, as the alliance not only saw off much of the competition, but tied up a major customer at the same time. When Tom Harkness retired in the early seventies, the remaining 20% share was sold to Rank. Shortly afterwards, John Lawton, who had joined the company in 1959, left to form a new company, taking with him Harkness's main customer, ABC. Such was his success that in 1978 he was instrumental in buying the Harkness business back from Rank and ran it under the ownership of Cinescreens.

Meanwhile, Hall Stage was arriving at a similar juncture, having itself chalked up a few significant milestones. Established by George Hall during the heyday of theatre in

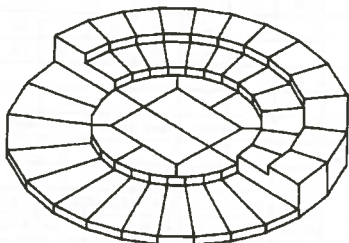
the latter part of the last century, it had grown to become one of the leading specialists in stage, tracking and scenery fittings. During the forties, George Hall passed the mantle on to son Robert who drew alongside him Bill Tottle, well known for his engineering flair. By the fifties, with the emergence of Cinemascope, the company had spied another niche market and was manufacturing screens. By now it was a rival to Harkness and the two fought tooth and nail for every contract.

In the late sixties, the pendulum swung back to theatre and by the early seventies Hall Stage were lining up major projects exporting what were effectively complete theatres all over the world. It was at this time that the National Theatre was being built on the South Bank of London, and Hall Stage tendered for the contract. Such was the prestige of the project, that it spawned competitors from within the company, the resulting battle conspiring to bring the tender bids down. The company secured the National contract, but in so doing lost money, and it wasn't too long before Hall was sold to the Welsh Steel Co. They failed to turn its fortunes round and, with Robert Hall now retired, Bill Tottle secured enough capital to buy the company back.

In 1981, when the company were engaged in the Barbican project, the bank pulled the plug, and the receivers liquidated all assets, clearing the company's Brixton site. A lifetime of knowledge was tossed into the skip. A management buy-out failed, and it was at this point that Harkness Screens stepped in and bought the company and Harkness Screens and Hall Stage Limited was formed.

That's not the end of the story, however. In 1988, the total operation was purchased by Arley Holdings who failed to exploit the potential of the business and in 1990, the inevitable happened, and the receivers were called in. Despite this setback, it was clear that the Harkness and Hall Stage element of the Arley Group was worth preserving and so the management took the brave decision, at the height of the recession, to buy that part of the company. And so began the current chapter of the company's history.

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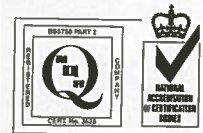
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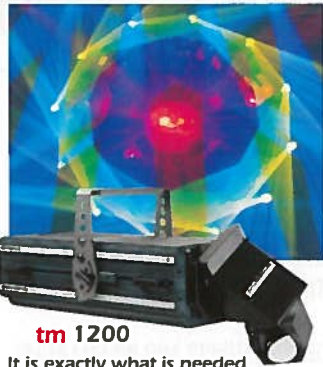
	tm 1200 DX	tm 1200	tm 2500	pc 1000 0/14/28	pc 1000 0/28/45	pc 1200 HMI 0/14/28	pc 1200 HMI 0/28/45
total movement 360°	●	●	●				
full magenta/cyan/yellow colour mixing		●	●	●	●	●	●
colour wheel	●	●	●				
rotocolour effect	●						
rotating colour effects		2/5	2/5				
indexable gobos	5	5	5				
rotating gobos	5	10	10				
superimposing gobos		●	●				
multiplying rotating prisms		3/5	3/5				
motorized iris with variable speed pulse facilities	●	●	●	●	●	●	●
totally variable frost			●	●	●	●	●
variable speed flash frost effect			●	●	●	●	●
variable speed strobing shutter	●	●	●				
black-out	●	●	●				
dimmer 0/100%		mech.	mech.	elect.	elect.	mech.	mech.
motorized high speed focus	●	●	●	●	●	●	●
motorized zoom lens							
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typical working distance [mt.]	4-30	4-30	5-40	4-18	4-18	4-32	4-32
lamp on/off remote control	●	●	●				
coemar digital multicontrol control panel		●	●	●	●	●	●
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THE LAST SALUTE

Steve Moles covers the VJ Day Commemorations

The issue of how to mark the fiftieth anniversary of victory over Japan has always been controversial. Being sensitive to such affairs, and with the mildly embarrassing furore over the Normandy Landings celebrations last year, the Government saw VE Day as a time for national celebration, but VJ Day warranted a more sombre tone. That it should be more of a memorial service met with the agreement of all concerned parties.

Following so quickly in the wake of the successful VE Day event in May, the final specification of requirements for VJ Day - as an occasion that would aptly reflect the mood of the Veterans - and awarding of contracts came very late - mid July for most contractors. Fortunate then that the producers already had a tried and tested team from the previous event.

PRODUCTION

Alan Jacobi once again took up the producer's baton for Unusual Services, with undoubtedly the man most suitable to mastermind this extraordinary Memorial service, Major Michael Parker, in overall control. Unlike the wide open spaces of Hyde Park for VE day, the limited free space around Buckingham Palace, Horseguards Parade and the Mall, proved the most difficult obstacle to overcome in terms of logistical planning. In a nonchalant reference to this problem, and typical of the easy and proficient manner Unusual bring to their role, company manager Simon Garrett casually mentioned renting two rooms nearby to deposit the 700-or-so children who escorted the Queen's procession down the Mall. "And just where do you find rooms off the Mall?" I enquired. "Oh, we put 500 in the Banqueting House opposite and the rest down the road at Westminster Choir School."

As Simon elaborated it became quite clear that exceptional efforts were made by all the resident parties in the vicinity to be helpful. He praised the local constabulary, St John Ambulance and "the enormous co-operation of the Guards themselves who inhabit the building. We must have been a complete pain, but they were ever gracious."

Senior production manager, Chuck Crampton, in charge of building the arena complete with the Edwin Shirley stage and Royal Box all within the confines of the historic parade ground, was faced with some pretty unique problems. Not only was there the traditional Changing the Guards ceremony to contend with - even on the day itself - but 50% of the site was in use as a Ministry of Defence car park, with an added complication of building works to the rear of Number 10 Downing Street to take into account. On top of all that, Chuck had to build into his production schedule the fact that others were constructing the main seating stands.

Production facilities were limited to a couple of portacabins tucked in the corners of the parade ground; with stage, grandstands and assorted towers covering most of the area all the bands and performers had to be scheduled in, only to arrive when the programme demanded. The seamless nature of the show was an astonishing accomplishment when you reflect on what they, Unusual, were up against. The Mall was only closed to traffic on Sunday (as is the norm) and the complex manoeuvres of that evening could only be rehearsed on the



Saturday night. Even then they took place amidst the distraction of the monumental fireworks display going on above the Thames. Considering this lack of rehearsal time, Major Parker's confidence in moving the Royal entourage, the children, bands and singers down the Mall, halfway through the evening and having them start up again when they reached the Palace, was extraordinary. All of this took place live on TV, and although the Queen's speech came on half a minute later than scheduled, by show's end they'd caught up, and overran a mere five seconds.

What will undoubtedly endure in the minds of many and what made this Michael Parker Beating the Retreat so extraordinary were the stunning images projected on to the Horseguards during the solemnities. Designed by Jonathan Park, with projection graphics directed by Cheryl Park and put together by Alex Quero and Kate Hepburn for 4i Ltd, these projections highlighted architectural features of the building and portrayed poignant images of the War as a kaleidoscopic sequence of colourful national symbols, including dazzling Scottish tartans and English roses.

ETVC UK Ltd provided the projection equipment and decided to showcase the new lamp house scrolling system and software, designed and built by ETVC Audiovisual in France. Eight 7kW PIGI projectors in four pairs

were used, fitted with 60cm lenses that covered the front of the building and two 7kW PIGI projectors fitted with 13.5cm lenses mounted backstage to fill in the shadows cast by the stage structure. These fill-in images were distorted to fit into the images being projected from the FOH machines, and all were controlled by software running on standard PC.

LIGHTING

The lighting for the event was immense: Peter Marshall who was Theatre Projects project manager

for the event, was forced to admit defeat four days before the weekend and sub-hire TRS cable from other suppliers. "This is a lot different from VE Day," he said. "Although the lighting was spread all over Hyde Park, it was in fact lots of small independent areas with their own integral lighting rigs. Here we have to provide lighting all down the Mall, as well as the stage and parade ground at Horseguards. There are 15 separate lighting areas in Buckingham Palace as well!"

The lighting design inevitably fell to Robert Orno who has become an expert in such events. He was a remarkably logical choice as his assistant Ian Bagshaw pointed out: "With this event there was no time for mistakes. The brief was to light the whole thing for television, and we had to be sure that what we specified would work - and it does. This is not as simple as it sounds, most of the available lamp positions are a couple of hundred feet from their target area, mainly on the tops of the temporary grandstands. Around the Memorial, for example, we have had to use over 500 Pars with ACL bulbs to get the throw required."

The 29 man crew had emptied Theatre Projects warehouse, and not one single channel of dimming was available for rental the week preceding. Horseguards had swallowed 1,000 Pars alone, 24 VL2Cs, with spot luminaire Vari*Lite used for effects lighting, as



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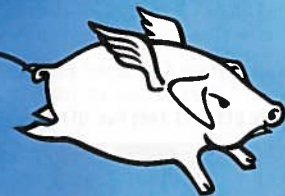
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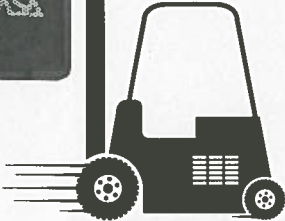
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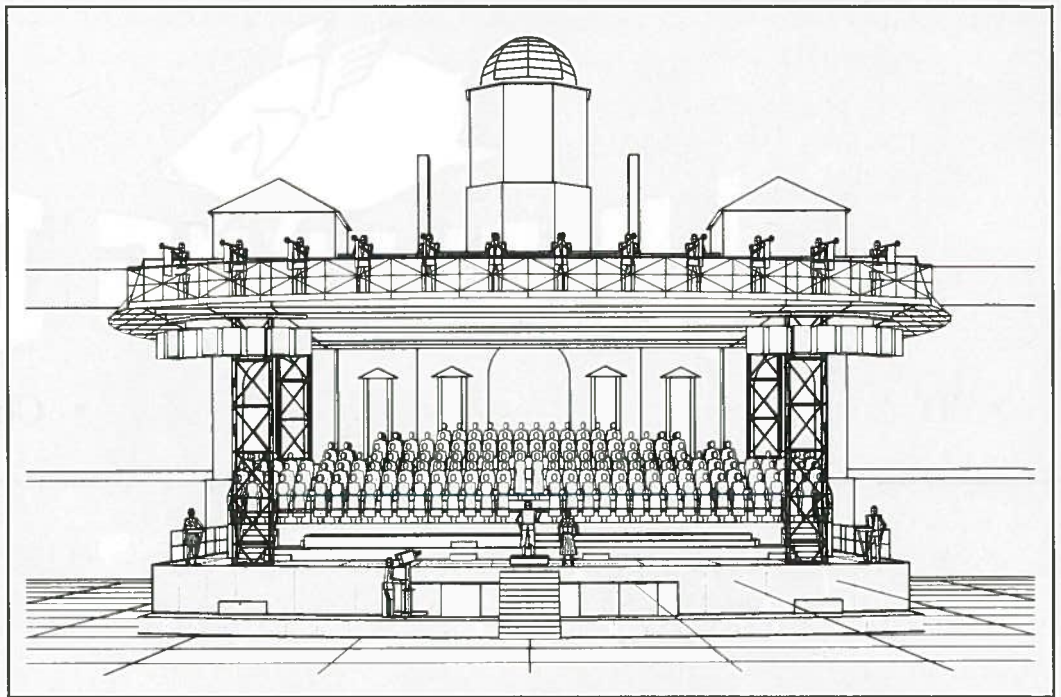
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CAD rendition of the main stage by Jonathan Park and Michael Almond.

well as 25 Molemags and 140 Coda floods to light the surrounding buildings. A similar specification covered The Palace with the addition of four Sky Arts on the roof, two doing the usual 20th Century Fox panning of the heavens, with the remaining two forming a giant 'V' centre-stage as it were. Two crews spent four days fitting a pair of Parcans to every single flagpole along the Mall (42 in total, with another 20 poles at the end) using a cherry-picker to mount the lamps and run the cables back to Temple generators dotted along the route. This is where Theatre Projects finally ran out of TRS. On an historical note, the flagpoles each carry a crest indicating a warship from Nelson's fleet, thus as he looks down the Mall from atop his column in Trafalgar Square, he can survey his ships guarding the approaches to the Palace.

Robert lit the Palace cleverly, the forecourt a fine example, where six lamp bars of Pars stood on heavy-based stands tucked in behind the columns of the perimeter fence concealed from view. Although this was not so much a flash and pizzazz show, the confines being to provide an even wash for the cameras, great care had been taken to make the lighting as unobtrusive as possible, not only by Ornbo's positional choices, but also in the attention to detail paid by the TP crew. A laudable effort when you consider what Peter Marshall described as "desert conditions in London in August".

As with VE Day, the VJ Day horseguards stage was designed by Jonathan Park and provided by Edwin Shirley Staging (ESS). It measured 18metres square with the roof supported on four towers for an 'in-the-round' style performance. Their's is an ideal system for this type of show, the towers being effectively free-standing and not requiring any bracing between them, makes for as clean and open a stage as you could wish for. With the towers having the smallest of footprints, only 1.2 x 1.0 metres, restrictions on sightlines are as close to perfect as you are going to get short of hanging the roof beneath a giant helicopter.

ESS also modified the roof especially for this occasion; a curved balcony projected 2.5 metres from its front edge to provide a performing location for the fanfare trumpeters. Conveniently, the roof towers were built-in ladders and staging platforms which allowed the musicians easy access to the roof space (1.7 metres deep) within which ESS installed a special walkway giving access to the balcony. In conjunction with the crew from TP and artisan operator Derek Jones from Vari-Lite, the lighting trusses were rigged from the top steels of the roof

trusses, thus enabling the lighting rig to be trimmed tight to the bottom of the roof canopy (some lighting trusses were, in fact, mounted within the roof trusses) making the lighting as unobtrusive as possible in keeping with Robert Ornbo's ethic. As company director Tim Norman explained: "A useful feature of the stage was being able to rig to the top steel. Other roofs don't allow this facility and with rigs trimmed to the top, it makes for a very tidy presentation."

ESS also provided a host of other structures - delay towers seemingly everywhere - supports for the multitude of video screen projection towers, followspot towers, Mojo barriers and more cable bridges than Tim cares to remember: "Do you know we even built one right across Constitution Hill?" Not while open to traffic, thank goodness.

VIDEO

Once again, Screenco were principal supplier of video screens for this event, and not just in London. A JTS8 was in Belfast, while both a Starvision and a JTS16 were used in Edinburgh. The weekend's events proved more contentious for Screenco than those in Hyde Park earlier; for one thing, VJ Day proved to be the most screens they'd ever supplied for a single event (more than VE Day) and it coincided with the start of the football season in the UK. Thus, they were denied access to the Jumbotron system at Arsenal's ground for the week-end.

With a Starvision out in Germany, another in South Africa and their JTS35 Jumbotron system out with Van Halen in the US, Screenco's David Crump was obliged to contract in additional hardware from suppliers JVR in Holland, Euphon in Italy and Mitsubishi in the UK.

Things never being totally straightforward, producers Unusual Services specified two identical screens for inside the Buckingham Palace site which fell to DiamondVision Mk IIIs. Unfortunately, only one was available - the next closest screen was covering an athletics meeting in Koln. David Crump was able to perform a swap, substituting one of Arsenal's Jumbotrons for the Koln job, thus freeing up the second screen. The Jumbo then had to overnight back from Germany in time for the football the following day. The co-ordination of the swaps, and the integration of foreign crews and equipment was all performed with Screenco's usual finesse.

As it transpired the VJ Day weekend stuck pretty much to its original intended format and, with the benefit of hindsight, appeared to strike just the right balance between celebration and remembrance.

photos: Jonathan Park and Robert Downs

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ASLEEP IN THE STALLS

In a spate of fascinating new stagings, some of our best scene designers have been showing off their abilities recently, abetted by equally talented lighting and sound men. At the National, on what turns out surprisingly to be only his second visit to the South Bank, Richard Hudson is the latest to take on the daunting space of the Olivier. Without going to any fancy lengths of raising and lowering it, he puts the revolve to good use for Matthew Warchus's revival of Ben Jonson's *Volpone*.

He has built a merry-go-round of interconnected rooms panelled in dark wood, and the opening dream, in which the miser of the play's title is pursued through them as they scud by like some ghostly film sequence, is as stunning in its impact as the huge funeral procession with which Philip Prowse started his *Duchess of Malfi* at the Lyttelton all of 10 years ago. The rooms are built to no more than about five metres in height, and apart from suspending *Volpone*'s strange menagerie of servants above it in the dream sequence, Hudson and Warchus keep the action at quite a low stage level for most of the play, tightening the view by a restrictive black false pros. It's only when we come to the more expansive courtroom scenes in the second half, that the scene is again opened out by the appearance of *Volpone*'s judges on top of the set. We know they're judges, because each of them has his own golden scales of justice on his hat. There are some other splendid touches in Hudson's largely monochrome costumes - one deaf old geezer has his ear-trumpet sticking vertically out of his skullcap. Peter Mumford's chiaroscuro lighting knows just when to pierce the overall gloom of the setting with a shaft of sunlight, or a reflection from the hoard of gold around which the plot, not to mention the set, revolves.

Round the corner in the Cottesloe there is a similar gloom for Ernst Toller's expressionist drama *The Machine Wreckers*. Director Katie Mitchell has assembled her usual all-female team of Vicky Mortimer (sets) and Tina McHugh (lights) for a show which has all the meticulous, sombre grittiness which has become their trademark. Multiple scenes, indoor and out, are suggested by the use of a relatively big rig, for the set consists of not much more than a wall of cast-iron doors surmounted by a wrought iron balcony. Where the great Max Reinhardt, who mounted the original production, got most of his kicks from assembling the machine of the title, a huge Moloch manned by thousands, Mitchell's team suggest it by bringing in a mechanically trotting team of faceless workers reminiscent of something out of *Metropolis*, who come out of a strong backlight to go about their tasks offstage. The machine is us, the audience, and its power is evoked simply by belching spouts of steam at footlight level; when the wreckers attack it, they do so with the backing of strobes. The implied machine is probably more effective than anything Reinhardt could have built.

As always, there is a very carefully-chosen soundtrack (by Sue Patrick) which, with its birdsong, barking dogs and ticking clocks keeps us continuously informed of the background to the plays very varied action. The music is less well chosen - Mozart's *Elvira Madigan* concerto is surely still too identifiable with its last usage to back German domesticity, and the Bach that accompanies the actual machine wrecking risks ridiculing a powerful moment.

Sound scores have been creeping up on us. In this TV-oriented age, audiences almost expect dramatic action to have the support of a studio orchestra. Alan Ayckbourn makes witty use of this in his *Communicating Doors*, where John Pattison's music underlines moments of tension in just the style of the old film thrillers - there's even a direct quote from *Psycho* when an unsuspecting victim steps into a shower. Roger Glossop's hotel-bedroom set is very much in the old thriller tradition too, solid flats and something not far from a set of french windows. Since we're on the sixth floor, however, it's a balcony instead.

Talk of old thrillers brings us inevitably to Alexander McPherson's set for *Dead Guilty*, at the Apollo. As it should, it looks exactly like a hundred other serviceable thriller sets from the old reps - this one came to the Apollo from the Theatre Royal, Windsor. It would be very unwise to offer the thriller audience anything more unconventional - at least McPherson has the chance to slip in a patch of garden and some of the house's exterior, where Joe Atkins can plot for mysterious upstairs lights to go on when nobody is supposed to be there . . .

The touch of class that a top design team can lend to upgrade a fringe

show to a full-blown West End vehicle was never more evident than in the transformation wrought by John Napier and David Hersey on DMW Greer's *Burning Blue*. At the Kings Head where it was first produced this spring it was largely down to the actors to evoke the sense of being on a nuclear-powered aircraft carrier or at the controls of a supersonic jet. The Haymarket has a pros which is slightly higher than Covent Garden's, and Messrs Napier and Hersey have used it to full effect with a huge cyclorama and the inevitable light curtains. Navy issue grey furniture trucks easily on and off and metal screens fly in and out for the play's constantly changing settings. The cyc comes into its own for the scenes in the air, where four pilots on little more than tall stools, with joysticks attached, create a thrilling impression of close manoeuvres, aided enormously by Nick Gilpin's sound which, at times, literally shivers the old timbers of the Haymarket. It must be stressed that all these fancy effects don't overwhelm the play - they simply give it room to breathe and develop as the powerful melodrama that it is.

The RSC have unveiled some biggies too: at the Other Place in Stratford Chris Dyer rises to the challenge of William Golding's desert island setting for *Lord of the Flies* with a simple curving platform washed with sand. In the novel there are all sorts of nameless nastinesses in the darkened depths of the island's jungle, and it's always difficult to give equal stage weight to such terrors of the reader's imagination. Dyer pulls it off pretty well - the moment when the body of a dead parachutist drops from the roof is particularly effective. Howard Harrison's lighting defines the stage areas well, even managing to cover the moments when the cast are almost among the audience on the balconies. There's also an understated, but very important sound score from Iona Sekacz and Tim Oliver. On a sweltering August night it wasn't too difficult to feel part of the island's humid horrors.

Back at the Barbican, last year's hit *Coriolanus* has successfully transferred to the main stage from the Swan. As with Terry Hand's *Tamburlaine*, this has meant a complete design rethink, and the solution is a similar one - Fran Thompson has used the full

depth of the Barbican's massive stage, with a big French Revolution backdrop splitting to reveal a claustrophobic, bloodstained box of a corridor leading right up to the cyclorama.

A metallic wall reminiscent of security gates comes in handy, too, to stand for the walls of Corioli and the entry to Aufidius's Volscian residence. White scaffolding trusses and ladders enclose the main set, ready to be clambered over by the swarming Roman mob (alas, a bit of a mob-ette in these times of scarce supernumeraries). Thompson's costumes, owing much to the paintings of Delacroix and Géricault, really shine against these relatively simple stage forms, and Alan Burrett's excellent lighting makes use of big floods with primary red and blue filters to give them strong support. What must have been an overpoweringly intimate production in the galleries of the Swan becomes a mainstage show of almost operatic sweep - and it's a cracker.

Ian Herbert

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



Julia McKenzie and Ken Bones in Alan Ayckbourn's *Communicating Doors*. photo: John Haynes



The Royal National Theatre production of Ben Jonson's *Volpone* which opened at the Olivier in late July. photo: Ivan Kyncl

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EQUIPMENT NEWS

EAW Stadium Array

EAW have released a new Stadium Array System. The KF853 is a true high-Q device, optimised for ultra-long-throw applications. It provides 30 degree x 40 degree dispersion and every aspect of the system has been optimised for high frequency projection at distances of 33m (100 feet) and longer. The optimum processor for the KF853 is EAW's new MX8000 close coupled network processor, which includes a driver alignment digital delay. As part of the close coupling of MX8000 and MX800i processors to the loudspeaker system, their equalisation sections have been optimised to compensate for atmospheric attenuation of high frequencies at distances of 100 feet and greater.

Production prototypes of the KF853 have already been purchased by Spectrum Sound of Nashville, Tennessee who used them as the top row of a massive Stadium Array system for the Promised Keepers, a Christian men's organisation, which held an outdoor rally at Texas Ranger Stadium in Dallas.

EAW has also introduced the MM12 high definition multi-media system. This features a pair of UB12 ultra-compact high definition systems and an SB48-12 subwoofer system. The latter includes an internal crossover network that provides high-pass-filtered stereo outputs for the UB12s. The MM 12 has ± 3 frequency response from 45Hz to 20kHz. Maximum output is 113dB SPL.

For further information contact TCi in Cambridge, telephone (01223) 416660.

Jands GP12

The new Jands GP12 digitally-controlled dimmer rack is the successor to the popular Jands Roadpak. Designed for use with lighting consoles providing a DMX512 output, the GP12 is the result of 12 months' research and development.

The GP12 follows the release of the Jands Hog range (developed in conjunction with Flying Pig Systems) and the newly-available high-performance HP dimmer racks. The unit features 12 output channels, each with a maximum load of 2.4kW, with Ferrodisp choke assemblies providing low acoustic and electrical noise characteristics. It can be rack-mounted for touring use or wall mounted, and is supplied complete with a two metre length of power cable, fitted with a Clipsal three-phase plug and mounting brackets.

For further information, contact Jands in Australia, telephone +61 2516 3622 or AC Lighting in the UK, telephone (01494) 446000.

Canon Re-launches



Since its launch in September 1992, the V-100 has proved popular for installed background sound in venues across Europe. In response to market demands, Canon are launching an outdoor version - the V-100EX.

The design and application are the same as the original - a flush corner mounting loudspeaker which offers wide dispersion, giving a spread of full band width sound 90 degree horizontally and 70 degree vertically. An acoustically transparent and water resistant material covers the high frequency driver and the V-100EX's port, and fixings are stainless steel. A two-way system, the V-100EX features a 130mm mid/bass driver and a 14mm high frequency unit. A carefully contoured acoustic mirror disperses the high frequencies over a much larger area than conventional box loudspeakers.

The company are also offering the V-100 in a white finish.

For further information contact Canon in Woking, telephone (01483) 740005.

New Aurora Dimmers

The R&G Group of Cinderford, Gloucestershire, have announced the successful conclusion of EMC testing on their recently re-designed dimmer range. The dimmers, fully compatible with most makes of +10v control desks, feature self-regulating ramp for mains dip regulation to 10% of nominal supply, soft start for inductive loads, preheat adjust and overall top limit suppress.

Further details are available from R&G Group in Gloucestershire, telephone (01594) 823197.

Soundcraft Surround

Following the recent launch of its DC2020 post-production console, Soundcraft has now introduced a multi-channel 'surround sound' variant. Developed in conjunction with Interact Systems, manufacturers of Magtrax Surround Sound interfaces, the DC2020 Surround is designed to meet the specific requirements of film, TV and video production.

The DC2020 Surround, available in 24, 32 and 40-channel in-line formats (with or without patchbay), boasts four-band split semi-parametric EQ, six flexible auxiliaries and the Soundcraft 'floating bus' routing system. The C3-based automation encompasses motorised faders, SMPTE-driven automated cuts and aux sends, with integrated machine control for popular audio multi-tracks, as well as nine-pin VTRs.

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

New Force

Wharfedale's new Force 1LT enclosure is moulded in self-coloured, heavily damped, mineral loaded polypropylene and contains a high-power 100mm full-range drive unit with copper-clad magnet poles. The Force 1LT has a 100 volt line-matching transformer with taps for 0.6, 1.25, 2.5, 5.0 and 10W.

Wharfedale has also introduced the Force 3180 bass reflex enclosure, designed to eliminate the sound direction compromise that occurs when trying to optimise both speaker positioning and audible stereo effects. With a frequency response of 40Hz - 20kHz, the 175W Force 3180 offers a solution to this problem. By aligning two drive unit arrays at a 90 degree angle, the horizontal dispersion pattern is extended.

For further information contact Wharfedale International in Leeds, telephone 0113-260 1222.

Osram Go Soft

To offer increased flexibility to luminaire and lighting designers, Osram have enhanced the HQI-E range to include 70W and 100W versions. This elliptical lamp generates the same high quality of light as the more familiar double-ended HQI-TS, but offers a softer light distribution, making it ideal for amenity and outdoor floodlighting.

Not only does the Powerstar HQI-E provide good colour rendering, avoiding the problems of colour distortion prevalent with some light sources, but is has a long service life and high light output. The elliptical range is available in ratings from 70W to 400W in warm white de luxe, neutral white de luxe, neutral white and daylight.

For further information contact Osram in Wembley, telephone 0181- 904 4321.



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Mac Lux Pro

The process of creating a lighting design - investigating the best equipment and angles to use, drawing a plan, then generating the myriad of lists required to put a rig together - is one that is ripe for computerisation. Yet most lighting designers still stick with pen and paper, put off by the high cost of custom lighting software packages and the powerful computer hardware required to run them, or the time and effort required to set up lower cost, generic, drawing programmes and databases for lighting work.

MacLux Pro is a software package that solves both problems. Created from the outset as a lighting design programme, it works in the way that lighting designers work. At its simplest level, it can be a direct replacement for pen and paper. Draw some bars, add some lights from the wide range of standard lantern symbols, give them colours and circuit numbers, then print a plan. Drawing and changing a rig is also greatly simplified: if a bar is symmetrical, half of it can be drawn and then copied and mirrored to the other half of the bar. If all of the Sil 30s have to be changed to Cantatas, or all of one colour changed to another, the programme can make the changes automatically. And from that drawing, MacLux Pro can then generate the paperwork for a show: equipment lists, rigging lists, colour lists and even patching information.

Beyond simple plan drawing, Mac Lux Pro, unlike generic drawing programmes, offers a huge range of extra features to help lighting designers with their work. Symbols can be shown on screen in the colour of their specified filter, giving an easy overview of a rig's structure. Lanterns can be focused to specific points on stage and their beams (including variable angle beams from zoom profiles, Fresnels and PCs, and the oval beams from Parcans) shown in plan or section view. Where beams of different colours overlap, Mac Lux Pro will even display the resulting mix of colour.

Mac Lux Pro is powerful - but it is also simple to use, a combination that has led to its use on a diverse range of shows by lighting designers with differing levels of computing experience. Lighting designer Richard Pilbrow was one of its earliest users, and his lighting design for the current Broadway production of Showboat was created entirely within the programme.

In the UK, lighting designer Nick Richings found himself a surprise convert. A devotee of his drawing board, he tried Mac Lux Pro while working on White Light's Dancing with Light project at the 1994 PLASA Show. Every show since then, including the current West End production of Hot Mikado, has been created with the programme on his Macintosh PowerBook computer.

Mac Lux Pro also solves the problem of specialist lighting design packages being expensive. Hardware costs are minimised by the programme's ability to run on just about any Apple Macintosh computer, including the full range of PowerBook laptops.

For more information contact White Light in London, telephone 0171-731 3291.

QSC Powerlight

QSC Audio Products has introduced PowerLight 4.0, the largest amplifier of the PowerLight Series and the most powerful to date.

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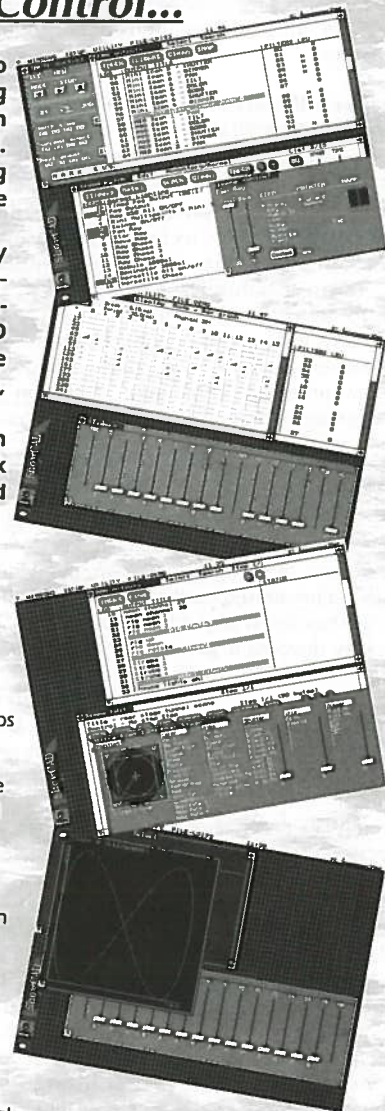
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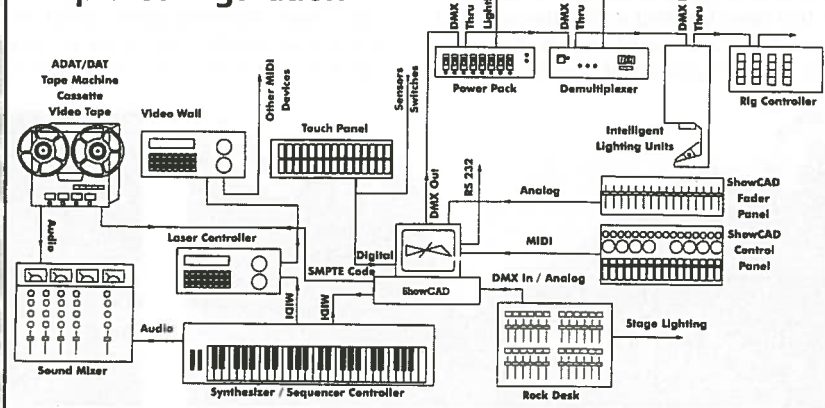
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IT'S A WONDERFUL LIFE

Mark Cunningham interviews Professor Dr. Jorg Sennheiser

This interview took place at the headquarters of Sennheiser Electronic KG in Wedemark, near Hanover, Germany on July 6 1995, during the 50th anniversary of the company's formation.

What were the factors leading to the formation of the company 50 years ago?

This company is a child of World War II. My father (Professor Dr. Fritz Sennheiser) was an engineer looking for an academic career and after studying at the technical university in Berlin, he came to Hanover to form the Institute for Radio Frequency Technology and Electro-acoustics, together with his tutor, Professor Vierling. During the war, the institute in Hanover was bombed and they were looking for new premises. They found it here in this 18th century farm building in the countryside. That's where they continued teaching and researching from 1943 onwards, and consequently were caught by the end of the war here. When the American and British soldiers came through they asked my father to join researchers at Cambridge or in the United States but he refused, so they closed everything down. They knew about the research that was specially devoted to encryption of speech. Of course, that could be used for the military as well, and it was strictly forbidden. When the Institute was closed by the Allies it was sealed and off limits to everyone. Nobody knew what would happen if they tried to open the door again.

Purely in order to survive, my father and Professor Vierling took to producing whatever was possible using their knowledge and the machines that were available to them. Meanwhile, the Allied soldiers forgot about the building and after a while, when my father and his colleagues were walking around this building and looking for mines, my father decided to try opening the door. He had to do something to survive and fortunately there were no booby traps. The first thing they manufactured was a valve voltmeter which was sold through Siemens, a company my father knew through his studies. Siemens also came to them with the MD1 microphone, which they manufactured in one of their Austrian factories which had been bombed during the war, and asked my father if he could copy it. But while copying it, he thought about changing certain



Two generations: Professors Dr. Jorg and Dr. Fritz Sennheiser.

design parameters in order to improve the performance. Consequently he made his first microphone, the MD2, and sold it to Siemens. That's how he got started in the acoustic business in 1945.

Was there a single product which revolutionised the way the company was perceived in the early days?

He started with the copy of the Siemens microphone and from then on saw that there was a need for more microphones for different applications. In the post-war years economic growth was stimulated and this time became known as the 'Economic Miracle' in Germany. There was such a demand for different microphones that they produced a variety for various manufacturers.

My father was purely an OEM manufacturer at that time, providing hundreds of thousands of microphones per year for Grundig and Philips dictating machines. They were not known for one particular product, but as a small, specialised company, which was in a position to produce any kind of transducer, together with special switches especially for

microphones. Besides this mass production there were smaller quantities of studio microphones which were used for news gathering by speakers and have been around for well over 40 years now. They were the products that this company was known for and they're still in production today.

Could you take me through the major company changes?

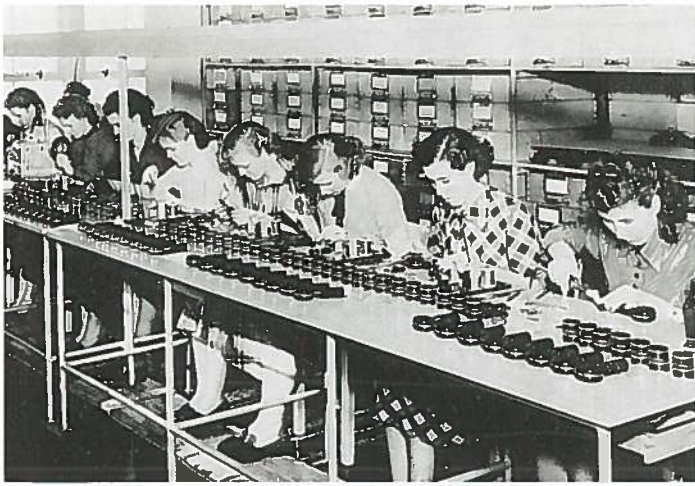
There are several milestones. One is our appearance in the marketplace. When this small operation got started it was called Labor Wennebostel, abbreviated to Labor W. This abbreviation was, however, sometimes misunderstood. We had an unfortunate incident with the Australian Prime Minister at the time who was supposed to talk into one of our microphones while giving a speech. He saw the Labor W sign on the microphone and thought it was a reference to a union, so he refused to use it. My father realised that the name, being a laboratory, was no longer appropriate for a company of industry standard after more than 10 years, so in 1958 he changed the name to Sennheiser Electronic. That was one of the most significant milestones.

Product-wise, we have seen a lot of milestones in standard acoustic tools like the omni-directional MD-21 microphone and the uni-directional 421 and 441. We were the first to manufacture wireless microphones, starting in the fifties with a transmitter which had one tube and one of those modern things called transistors! Two-thirds of the volume was batteries. We have come a long way since then and consequently we have developed new generations year-to-year. We have more or less made it possible to simultaneously transmit on as many channels as you want, if you have the bandwidth.

Multi-channel operation is one of our strong points and we are market leaders in this area. We were the first to announce and manufacture active loudspeakers which saw the integration of an amplifier together with a loudspeaker, to give the best acoustic performance. Of course, in 1968, we invented and launched the first open-air headphone. That actually created the headphone market because it didn't exist before then. There were some headphones around which were clumsy, cup-shaped things. What we introduced was a hi-fi listening



The changing face of Sennheiser: above left, the 'Villa Hausmann' which became the Labor W headquarters and right, the new facility at Wedemark.



The MD4 microphone in production in the 1950s.



1979: Fritz (left) and Jorg Sennheiser in the company's anechoic chamber.

product with fantastic acoustics, placing almost no weight on the head.

It is now a world market and we are still one of the major players. We are leading in Europe where we are known for hi-fi headphones; the large quantities of throwaway headphones run into millions per year and we have found a different part of that market where we lead in performance and always show what is possible.

When did you join the company?

I joined one year before it was founded! I was the first Sennheiser product! All through my youth I was raised with the company. I joined as the first technical manager of the corporation in 1976 and then took overall responsibility from my father in 1982.

Were there any differences in priority when you took over from your father?

Changes in this company are always evolutionary, because if you have success with something in the past, you don't want to change the winning team straight away. So, after being educated as an electronics engineer, having finished my thesis and joined some other companies to gain industry experience, I came into this company to see what made it work and how I could provide some input. One of the major changes took place in 1984 when we started our strategic planning. Having grown and become famous as an engineering company, we realised that we had to become more customer-driven.

Everything we do in this company has to fulfil a customer's needs, otherwise it's of no

use. But we also have to have a smell of the future and anticipate those needs, although we don't look too far ahead. If we build a product that will be accepted by the market place in 10 years, we wouldn't have success. That was a situation we encountered with our active loudspeakers. We were too early with them, but now everybody has them. At the time, very few people realised that this concept was something really special. Sometimes we need what I call the 'playground', where we have to invest into some ideas and try to push the limits, show what is possible and then see how the customer reacts. We cannot simply sit and wait until the customer knocks at our door.

What are the individual responsibilities of your operations here and overseas?

This company (Sennheiser Electronic KG) has the overall marketing responsibility. We have local responsibilities assigned in various market-places to our daughter companies, such as Sennheiser UK (also Sennheiser France, Sennheiser Electronic Corporation of USA, Belux BVBA, Canada Inc, Asia Pte Ltd, Nederland BV and Mexico SA), as well as representatives in around 60 countries who take care of the marketing of products throughout the world.

The prime objective for all of us is to work on the customer needs and try to specify a product which will cater to them. Our obligation here is to design and produce that product. We have two different manufacturing sites in Germany: one at Wedemark and the other about 20 kilometres away in Burgdorf. There is also a manufacturing

plant for headphones which relocated from Germany to Ireland five years ago.

How many staff does the organisation employ?

In total we have well over 1,000 staff. At this site it's around 500, with 250 at Burgdorf and 126 in Ireland. 400 people are employed in manufacturing duties and there are about 60 directly involved in R&D.

How many countries are you selling to?

We sell all over the world. Actually, we are selling through certain countries into the rest of the world, because in the professional field everybody knows our brand and they have to be able to obtain our solutions to their acoustical problems. Even if we don't have a representative in a particular country, they can obtain the products through wholesalers.

Did you face much industry scepticism when you first introduced the wireless microphone?

Oh, most definitely. But we overcame it through good performance. I still recall when we started working with a German TV station for one of the well-known shows of the time. The presenter, and everybody else on the programme, was wearing those wonderful nylon shirts which, of course, caused static which is detrimental to any kind of wireless transmission. Because of that, wireless was not considered very safe at the time.

We overcame all those problems by applying diversity and using a different kind of modulation system, which showed that there were a number of ways in which we could



Past and present: the revolutionary wireless transmission system, Mikroport, from 1958 (left); Sennheiser's first open headphone, the best-selling HD414 headphones released in 1968 (centre), and Sennheiser's new MD504 'thumb' dynamic mic (right).

solve apparently insurmountable problems. Today, in many applications, people automatically choose to use a wireless microphone because we have made wireless transmission more reliable for the end user, and that is quite an achievement.

What is so unique about Sennheiser's condenser microphone technology?

We are the only company in the world employing the RF principle, which has certain advantages. It allows us to make circuitry with a low noise figure, which is not otherwise possible. Through clever electronics we can push the upper limit for the highest sound pressure level, and even above normal levels we can make sure that the dynamic range is as high as necessary. Furthermore, this is the only principle which is virtually insensitive to humidity.

You can drop one of these microphones in water and when you dry it, it will work again. If you go out on a news assignment on a foggy day, a conventional condenser microphone will start to produce noise after 10 minutes or so, and you will hear crackles. These problems do not occur with Sennheiser condenser microphones.

Your dynamic microphone range has also developed in leaps and bounds.

That's where we started and we have attempted to improve everything inside from generation to generation. We had to work on the materials we use for the diaphragm. In the old days we used thin, aluminium foil which was the only thin material available. When plastic foils became available we were looking for suitable types and we had to define the correct one, which was quite a process because it had to be uniform and very thin and reliable.

We tried nearly everything - even the packaging of liverwurst, which was virtually the kind of material we ended up with. We had to make inroads into very thin copper wires and find manufacturers to make thinner wires. We went down to 10 micron, but we have since gone up slightly because it's very complicated to handle 10 micron wire, and very expensive. We have found the solution by employing materials other than copper, such as aluminium which is lighter and saves a few milligrammes.

On the magnet itself, we did not invent any new magnetic materials but we were pushing those companies who were trying to make use of nickel alloys. In the beginning they would use oxide magnets, then rare earth magnets. Now we are highly motivated by research into material science, trying to define what are the optimum materials for our mechanical design.

Since Neumann came under the corporate umbrella, has the Sennheiser branded product been able to penetrate any further into the recording industry?

Well, actually Sennheiser and Neumann have been co-existing and competing since the beginning. Neumann is the older company, having been founded in the 1930s. When I took over it was not a case of us penetrating into another market, we used the synergy in inventing and manufacturing similar products for these markets. We are still co-existing and it is the customer who decides whether they use a Sennheiser or a Neumann microphone. It is not for me to convince them otherwise.

When you are dealing with two microphones at that level of quality, it is almost impossible to measure the difference. If you have made famous recordings with Neumann microphones, you should stick with them. Most

quality recording studios, however, have both, as well as AKG, Beyer and Audio-Technica, and find different applications for each.

Many artists are looking increasingly to past technologies, such as valve microphones like the Neumann U47, in order to capture a certain character of sound. Do you have plans to address this growing retro demand?

We have already launched the re-make of the U67 which was easy to do because there was still an availability of large quantities of tubes, including quite a number of the original tubes. There are ongoing plans to re-launch the U47 although we cannot find suitable tubes. They are not around anymore and so we had to postpone that project. We did have a source for tubes which seemed to be original, but they did not perform exactly like the old ones. There is not a problem with recreating the original capsules, but the electronics are different and that will affect the sound. If the sound is markedly different to the original microphone, there is no point. We are still working on it but we will only bring it into the market when we have made sure that the sound is accepted and perceived as being true to the original.

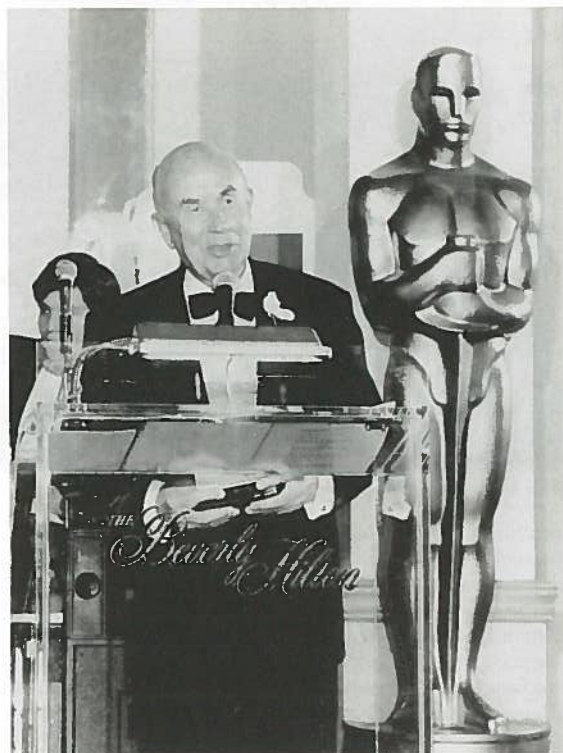
Your wireless mixing console seemed like a fantastic solution. How was it received by the market?

That was one of those occasions where we had an excellent, flawless product and a good solution, but apparently there was no customer need. We have worked with it for almost 15 years now and I have personally lobbied for it all over the world. We sold a few, but overall you cannot calculate a return on an investment into new generation technology. So we have decided not to continue that project. It's one of those innovative ideas which comes out too early.

It was originally intended for outside broadcast, but the principle would provide immense benefits in the live sound industry in general. Maybe we'll come up with a tailored solution for a different customer need, employing our knowledge for flawless performance and make something different in the future. As a result of that design, we have produced a wireless receiver, the pocket-sized EK4015, which fits right on to the back of a camera and has true diversity. We saw there was a need for one-way communication with total reliability, so it has to be diversity.



The SI 1029 infra-red transmission system (multi-channel), launched this year.



In 1987, Professor Fritz Sennheiser received the Engineering Award, the Oscar, for the MKH 816.

How important is ISO 9001 to you?

We have successfully applied for that and we now have this standard in-house. Being a recognised accreditation, it is a good thing to have, especially for marketing purposes. However, it did not change many of our internal procedures and attitudes because we were already very quality conscious. It is a standard which shows that a minimum qualification is there, but which we normally surpass. In former times we had a German hi-fi standard which demonstrated a certain level of quality and it was an achievement to reach it.

Achieving ISO 9001 took us more than a year to follow through and we had all these time-consuming audits going on, although I feel it was worth the effort. If you sum up ISO 9001 with the 'Made In Germany' or 'Made In Europe' label, that's the kind of excellence which keeps us ahead of others. It's a small advantage, but one which you have to strive for.

How do you see headphones developing in the future?

Almost without limits, because we can provide whatever the customer wants. We have to investigate those needs very thoroughly in terms of acoustics and features. We are constantly thinking about new products above a certain quality level, leaving the throwaway items to other manufacturers. You will always find our wired and wireless headphones meeting at least a minimum hi-fi standard.

What can you do to headphones to improve or change the format?

You have to change the acoustics because the customer's taste of sound and the music they are listening to is forever changing. If the young generation wants the rap sound, they need special acoustics in order to let them perceive it in the way they want. On the other side there are features like circum-aural, on the ear or wireless, or a product that is so clever that you can change the performance according to your personal taste. We can only produce a certain average performance for the target group and, because listening is such an individual

experience, there is a requirement for individualised acoustics.

How would you achieve that?

We cannot achieve it yet! But we know all the parameters and we can change everything to make a flat response, then let the customer decide how it should sound from then on. You can conduct a simple test by trying the full range of our headphones on your favourite music, starting with the lowest in our range and working upwards - you will find a noticeable difference between each model. At a certain point between models, everybody has to admit that the difference is almost not audible. Then the choice is made according to the cosmetic features of the headphones. The people with the so-called golden ears are the only ones who can distinguish between headphones, and it is for those that we make the best possible solutions, but they represent a minority.

Do you have any plans to diversify the product range?

We have analysed our possibilities and defined our working range as being communication electronics with an emphasis on acoustics. We review that from year-to-year and we see that in this field there are so many new products we can invent or new target groups to which we can supply products. So, we do not feel the need for diversification.

If you look at our range, we have the whole area of communication electronics under our wing. A lot of people think of us as the major headphone manufacturer, but it only accounts for 30% of our turnover. 40% of that turnover is consumer and the remaining 60% is in the professional field. If we have a problem, it's that we have too many new ideas!

With all your expertise in wireless technology, does the idea of designing your own in-ear monitoring system interest you, especially now that the principle has become so successful?

It does interest me and it is a very important portion of the business. We have done some work in this area to see if it could be successful. We have to combine that with all our research activities concerning the different ways of making wireless transmission. I can see different applications in the future but it will take some time in order to make sure that in-ear monitoring is really undisturbed by any other surfaces. We probably won't be in the market with a conventional product in the near future, but I think we will be able to provide an innovative approach a little later.

You do not currently have affordable instrument diversity equipment for the lower end of the musician market. Do you have any plans in this area?

We don't have a solution for that problem because it is almost impossible to compete with all the low-priced products that are pouring into the world market from China, where manufacturing labour costs are incredibly low. Our expertise lies in the middle and high end of the market, and we are not geared up to low level competition.

Many of these products are virtually illegal because they do not comply with government regulations. I see a problem there because although these illegal transmitters work, they spoil the whole frequency band and interfere with other surfaces. Who's to blame? If somebody calculated how little illegal transmission costs, then added on how much

there is to pay when the user is caught, it may be wiser to have chosen a high quality system in the beginning.

What do you see Sennheiser doing in five year's time?

Our intrinsic goal is to stay healthy, provide good products and survive in this field. Growth isn't actually a primary objective, although if we do everything right, it will be a natural by-product. If it's necessary or possible to grow in a particular market, we will. We have to realise that certain strongholds of the past or today, may not necessarily be strongholds of tomorrow.

We used to mould our plastic parts ourselves for almost three decades, but realised that other manufacturers were able to meet the same standards and if we instructed them correctly, it would be more cost-effective for them to manufacture the parts for us.

We now buy these parts instead of manufacturing them, and do not need a tool shop anymore. At around the same time we had to substantially enlarge our clean room facilities. The decision to stay with electronics manufacturing has also resulted in further expansion, due to the procedures involved in placing SMDs on to PCBs.

That required a major investment which ensured that manufacture remained in Germany. We have also been investing heavily in trading. Years ago, we realised that there was money to be earned, not only through manufacturing products, but also through trading.

Sometimes the production leg is healthier than the trading leg, and vice versa, but they both contribute to the overall success and stability of Sennheiser.

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SELECON

SECOND TAKE

I have been trying to work out the arithmetic - if it takes company A four salesmen five days to sell 500 lights, company B six salesmen six days to sell 400 lights, and company C five salesmen seven days to sell 300 lights, how much does this add to the cost of each light? I'm referring to trade show time, and whilst not all the companies go to all the shows, some of them go all of the time, and all of them go some of the time. Why do they do it? It can hardly be for the same reason that I go, which is to catch up with old friends, keep an eye on my rivals and gossip a lot (*we can't believe it - Ed*). It's true that it can be an opportunity to look at the latest new equipment, though conditions are usually less than ideal. If it's a new lamp it's unlikely to be much of a match for the sun pouring through the glass roof. An essential part of any stand, in my view, would be a heavily loaded five ton truck with a disgruntled pair of sparks throwing the lamps on and off.

Moving lights tend to be demonstrated in a totally different way. The manufacturers of these have lots of hair and big budgets, and can therefore afford large areas of floorspace at these shows. On this they build large black boxes and fill them with smoke. Even my bicycle lamp makes a brave show in this environment and it's easy to be fooled over the apparent brightness being produced by what must be last year's entire production. You cannot ask for any statistics as there is a 14 feet high stack of speakers thundering away, which sets up an uncomfortable vibration in your chest, the likes of which you haven't known since your last visit from the VAT man. Mind you, if they wound it down a bit, you would hear the fan noise - but I mustn't dwell on that old hobby horse.

Control systems are another matter entirely. Being a more scientific range, they are demonstrated by 25-year-old electronics graduates who have connected their 1,000 channel system to eight battered Parcans coloured with some gel rejected as too crude in colour in 1938 by Fred Bentham. As the control system salesman gets into his stride on his quick (30 mins) idiot's guide, and a growing realisation creeps upon you that you have missed the frankfurters and mustard on the Arri stand, a pimply youth in a grubby T-shirt on a day off from Francis Reid's class at the



Central School of Speech and Drama, completely upstages you by noting that the device is not DMX512 compatible, and, unlike the PC in his bedroom (where he does all his plotting), doesn't have enough memory to write the entire text of *Much Ado About Nothing* alongside the plot.

So are our manufacturing friends doomed to traipse from one over-heated show to the next, in expensive flag waving operations, or do they actually want me to see their latest offering? I must persevere, try not to be biased and not be too influenced by the carrier bag on offer.

It may not have escaped your notice that I attend a lot of lighting exhibitions - actually using lights is rarer. Nonetheless opportunities do present themselves (never call them problems, always opportunities) from time to time and it's then that those half-remembered images of equipment may pay off. Only recently, there was a call about a job needing some trussing to climb up a floor supported set of towers - didn't Glantre show just that at PLASA last year? And yes, I would much prefer a few bobs' worth of Poly to any soft light, but Mr Lightbody's latest for Optex would just fit beside the camera in that tightish situation where the Poly won't. As a seed-sowing exercise, some trade shows do work and I find myself enjoying them for both the right and wrong reasons.

In passing though, it's always worth checking where you're going before you go, a useful maxim for life in general (*oh no, he's into philosophy now*). Last year, armed with the knowledge that I had an Elect Club ticket, I set off for Earls Court. It's true that the ticket was at home in Lincolnshire, but since I know all the right people in high places at PLASA I knew I only had to say 'John Offord' and 'Elect Club' and I would be in.

No such luck; the woman at the registration desk was unimpressed with my spiel: "I'm an Elect Club ticket holder (it's at home). I'm a personal friend of John Offord and a famous lighting man known to most of the big time producers in British TV. (I sometimes wish some of them knew me less well but . . .). Can I have a pass." The lady is still unimpressed. I react badly; after all people always come up to me at these events and say they saw my name on the screen the night before, though strangely there isn't anyone I know around. "Can I go in?" "No sir. Are you sure that you are at the right exhibition." "Of course I am sure. It's September, this is Earls Court and this is therefore PLASA, let me in." "No sir, this is Earls Court 4 and this is the Sweetie Show - the annual jamboree of the boiled sweet manufacturers." Well, I guess I qualify for that too, as some sort of sucker.

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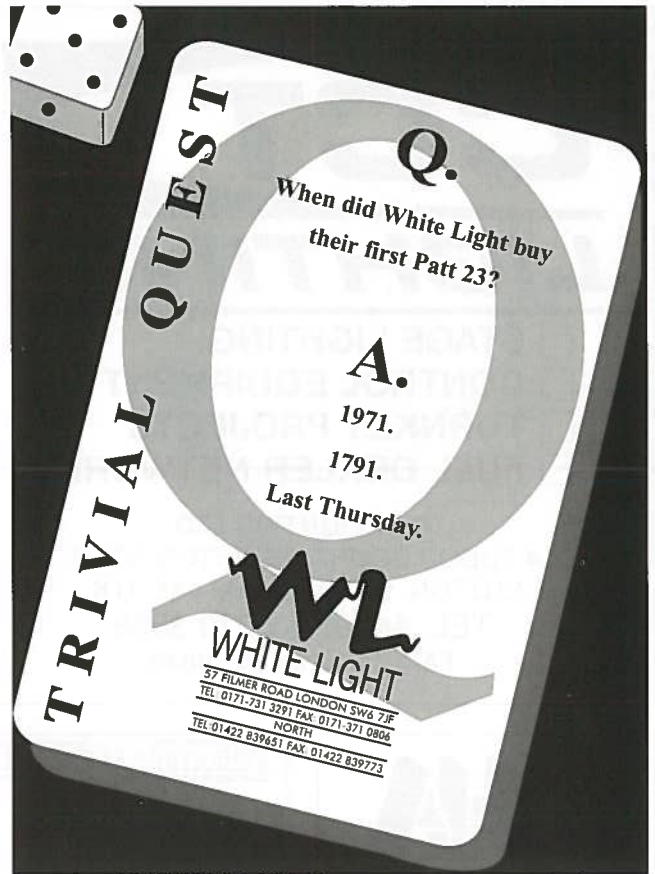


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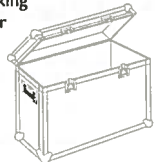
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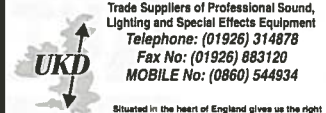
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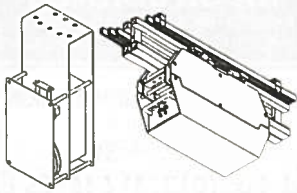
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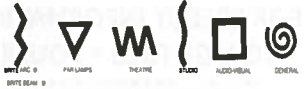
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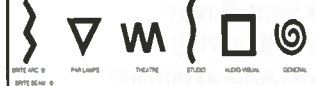


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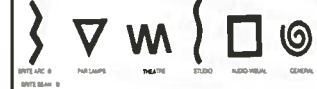
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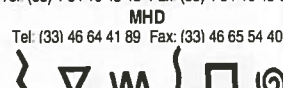
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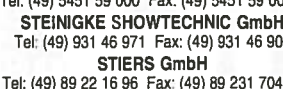
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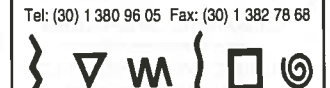
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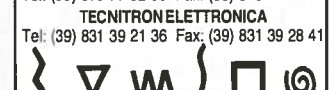
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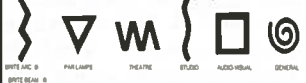
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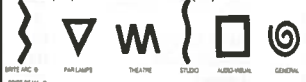
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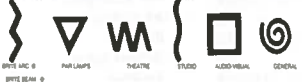
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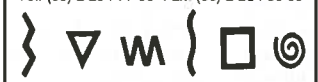
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VIEWPOINT

David Rose and Richard Cresswell on the Internet

It doesn't need you anymore - you need it!

Two years ago the hype started about the Internet. Now the hype has stopped. The papers still have pull-outs and ten page articles, TV and radio have an ever-increasing number of programmes, but they are no longer about how it will change your life and how the 'information superhighway' is going to be the future for business. The slant has changed; the articles are now about how to get on to the Internet and how to use it. The hype did its job, the Internet was like a party that needed people and companies in sufficient numbers to make it work. The fact is, now that is has the people, the Internet doesn't need you anymore - you need it.

Any company looking at the Internet has to cut through the hype and preconceptions and look at what it can offer them - and at what cost. The decision to participate is a business one, and it has only recently become viable. To make any decision about the Internet you need to know what it is, what the benefits are, who the audience are, how much it costs and how you go about it.

When people talk about the Internet, they are usually talking about a part of it called the World Wide Web. This is the easy-to-use side. It gives the user a screen like a view into a magazine with pictures, sound and even video. People publishing on the net have what is called a site, which has an address or 'URL' like an extended postcode. The site is made up of a collection of pages onto which you can put whatever you like. The first page is called a 'welcome page' that acts as the introduction and index to your site. Clicking with a mouse of any underlined text or highlighted pictures (called Links) can take the user to another page on the site or to another site on the other side of the world. Your site can include your catalogue, technical data, company profile, examples of work you have undertaken or whatever is relevant to your business.

If used correctly, the Internet can provide you with a 24-hour accessible showcase for your company and its products or service. It gives you an efficient way of doing business. A traditional sale involves a customer having to find out about you from advertising or word-of-mouth. They then phone you to find out if you sell what they want, and will usually either want you to fax information if they are in a hurry, or may want a catalogue or other product information to be sent. Eventually they (hopefully) place an order. The Internet way of doing things starts with the customer doing an



David Rose (left) and Richard Cresswell are joint managing directors of Navigator Systems Ltd, a company specialising in computer software for the entertainment industry. Educated at opposite ends of the country, both gained degrees in Electronic Engineering and have since worked for over ten years in the lighting hire industry. Additionally, Richard has acted as an electronics and computing consultant for many of The Times Top 100 UK companies, whilst David is an authorised computer network consultant. They are both devoting a significant amount of time to the rapidly expanding World Wide Web authoring section of their business and can often be found rummaging through the Internet into the early hours of the morning.

Internet search for say 'widget adapters' or by going to a related site and looking for the 'widget supplier' section. They click on a link and are taken straight to your site where they can find out about your company, check you do the right-sized widget, can supply it in pink, and then fill in an on-screen form for more information or to place an order. This is happening now and is not just for large companies, but possible for any company.

In the example here, the Internet has provided advertising, instant access to information from your company and a way of taking details or an order, without any expenditure on time, postage and telephone calls. You may still want the personal contact, so you may want to take the order by phone, but you have cut out the time-wasting preliminaries. If you are looking at expanding your exports, remember this information is available worldwide and your site never closes. By the mutual linking between sites, you can also pick up the passing trade from other related sites. Another less quantifiable benefit is the perception held by your clients that you are a go-ahead company - even if they don't know what the Internet is. An e-mail or web address at the bottom of an advert or fax header can do wonders

for your image!

The Internet used to be the domain of academics and programmers, but this has changed. Computers now play a part in all our lives; we have high street computer shops and computer superstores and pages of their adverts in newspapers taking the space previously only affordable by car manufacturers. The advertisers aren't trying to push the Internet now, they are fighting for a share of the growing market.

Internet service providers who are the gateway between a user and the Internet are reporting growth rates as high as 18% per month on a subscriber base of 40,000. This growth will accelerate faster with the in-built facilities of Windows 95 and November's launch of the low-cost BT residential Internet service. The total number of users in the UK is unknown, but it is estimated that worldwide there are 30 million users. The only thing we know for sure is that the readership of Internet magazines in the UK is around 100,000 and the total number of users is several times that number.

The remaining questions cover the cost and how to go about it. To have a site stored on the web costs between £100-£400 per year. The greater cost is that of authoring the site. A typical authoring rate is £50 per hour for the design of the site. The process is quite similar to designing a brochure or catalogue, except that what the user sees on screen is controlled by a computer language called HTML, rather than laid out with a DTP programme.

It is possible to do this yourself, but it requires a blend of programming and artistic ability and a lot of time. As a rough guide, a consultant may be able to create a small four or five page site in a day, but a large site may take several weeks, depending on its complexity.

There are no adverts in the Yellow Pages for 'web authoring services' as yet, so finding a consultant can be quite difficult. You can either buy an Internet magazine, find an advertiser, ring them up and ask them to talk plain English, instead of jargon - most of us can if we try, or better still, you can simply ask PLASA.

THERE WILL BE DEMONSTRATIONS OF THE INTERNET THROUGHOUT THE PLASA SHOW IN LONDON ON PLASA'S OWN STAND - A254

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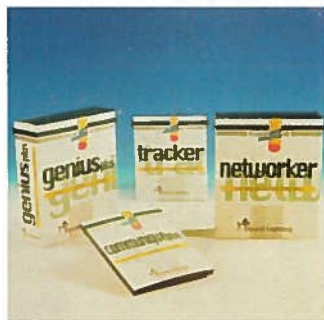
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