

# LIGHTING+SOUND

*International*



AVID BOWIE IN CLOSE-UP: THE SONY JUMBOTRON STARS AT THE BIG TWIX MIX AT BIRMINGHAM'S NEC

- Nights at the Circus: from Las Vegas to London with the Cirque du Soleil
- L+SI Exclusive Feature: Liverpool Institute for Performing Arts
- Tasty sights and sounds at The Big Twix Mix
- The beginning of The End - London's latest nightclub
- Intimacy in the round with Simply Red at Wembley Arena
- Profile: how Philips are making things better...

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**JANUARY 1996**

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# LIGHTING+SOUND International

JANUARY 1996

VOLUME 11, ISSUE 1

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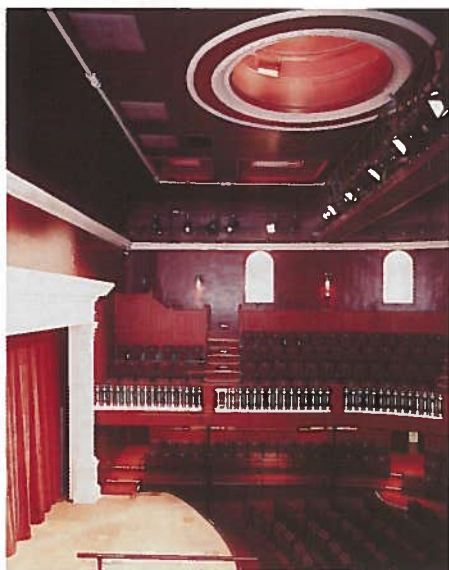
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**ABC Membership has been approved pending first audit for the period July 1995 - December 1995**

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

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## LIPA Exclusive

As L+SI went to press, The Liverpool Institute of Performing Arts (LIPA) was opening its doors for the first time to welcome students to its range of performance technology courses. The full story of LIPA is covered exclusively by L+SI in a major feature starting on page 49.

For the stage engineering, lighting and sound contractors, ASG, the project at LIPA has contributed to the company's continued success in Liverpool where they recently completed a £250,000 contract in St. George's Hall with special timber rostra units to replace the demountable floor to the Grand Hall. Also in Liverpool, ASG have recently completed a contract of similar value at the Philharmonic Hall for the supply of stage lighting and sound equipment.



The Paul McCartney Auditorium at LIPA.

## LDI Group Sold to K-III

Pat Mackay, founder of the New York-based LDI Group of companies, which includes the annual Lighting Dimensions show, Lighting Dimensions and Theatre Crafts magazines, the web site and week-end workshops, has sold the company to US communications company K-III for an undisclosed sum.

K-III is a diversified Fortune 500 media and publications company which has a portfolio of consumer and educational titles. Pat Mackay will continue to manage the Group for the initial period.

## TP Nat West Tower



Theatre Projects Lighting Services was responsible for the dramatic Christmas lighting of London's landmark Nat West Tower, currently in the course of rebuilding after the bomb devastation of a few years ago.

With the Tower still a building site, TP crew boss Jonathan Wood and his team faced a difficult task. The lighting specification, designed by Eddie Camplin of Lighting Design Ltd, called for 30 lengths of Optikinetics' Arcline, 18 High End Systems Dataflash strobes, 16 AR 500 architectural luminaires and conventional lighting including 169 Par cans and 12 outdoor Pars.

## 1995 - Bumper Year

1995 proved to be a landmark year for PLASA. The early part of the year saw the consolidation of the merger with the Sound and Communications Industries Federation and by mid-1995, no fewer than 92 of SCIF's former members had joined PLASA. By the end of the year, the total membership had swollen to 388.

The links were further bolstered by the purchase of the Sound+Communication Systems title which PLASA relaunched in April and which has already gained a firm footing in this competitive market.

In April PLASA set up its own web site on the Internet and the information covering PLASA members and services has grown so quickly, that the PLASA pages now total just under 300.

The signs are good and the industry seems to be enjoying a period of growth and investment. Let the good times roll...

## Millennium Initiative: Central Role for PLASA



With the British Music Fair joining PLASA on the same dateline at Earls Court 1 in September, it is hoped to announce further developments in the near future. "At the same time, we will be issuing a general invitation to the industry to come up with any ideas that we might be able to incorporate to ensure the PLASA Show and parallel activities and events are the acknowledged centre of world entertainment and presentation technology by the year 2000," said John Offord, who is joint chairman of the Initiative with Jonathan Goold, managing director of P&O Events Ltd.

PLASA'S INTERNET ADDRESS IS <http://www.plasa.org.uk/plasa/> TAKE A LOOK

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## AdLib's Bootleg Sale



Given the current resurgence of interest in The Beatles, it is hardly surprising that lookalike tribute band, The Bootleg Beatles, sold out virtually every venue on their high profile autumn/winter UK tour. For their most recent trek, the band invested in their own PA system as supplied by AdLib Audio of (you guessed it) Liverpool.

Powered by eight C-Audio amplifiers, the Bootlegs' DF Series touring system was designed by AdLib's Dave Fletcher and Andy Dockerty, and features four-way cabinets loaded with JBL and RCF components. Provided within the system were four stacks of the DF2 loudspeaker system, a Soundcraft 8000 32/8/2 desk, an AdLib multicore system, Klark Teknik crossovers and graphics, a Behringer MDX 2400 compressor, Alesis MEQ 230 graphics and Midiverb effects, plus a full range of microphones.

The band's front of house engineer, Alan Lynch said: "I must have used every system around, but the DF Series system is, pound for pound, the best in the country."

Mark Cunningham

## HELL DMXPort

Howard Eaton Lighting Ltd has sold five DMXPorts to Glantre Engineering for the Teatro Real, Madrid.

Part of a major refurbishment of an old opera house, the DMX data installation has been designed and installed by Glantre Engineering in co-operation with their Spanish partner, Chentrol Espanola. The DMXPorts are built in to facility panels which are distributed around the theatre, and will be driven by eight DMX Multiways, which are opto-isolated buffers.

## PA on the Web

PA Installations have announced that their product catalogue and copy information is now available on the World Wide Web, at <http://www.sreact.co.uk/pa.html>

## Studiotec supply RCCL

Studiotec Ky of Espoo, Finland, has signed a contract to supply and install the show sound and lighting systems for two Royal Caribbean Cruise Lines cruise ships, MS Grandeur of the Seas and MS Enchantment of the Seas.

Equipment includes Apogee Sound and EAW speakers, Crown amplification with EQ control, tc electronics 1128/6032 moving fader EQ control, Lexicon and Eventide effects processing, ETC dimmers, Wybron Autopilot automated fixture performer tracking system and a Jands-Hog controller will control the moving lights.

A Richmond Show Control System will control sound, lighting, stage mechanics, video projection, smoke and pyrotechnics.

## ONE HUNDRED YEARS AGO THIS MONTH

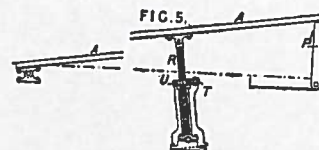
British Theatrical Patents  
1801-1900

Patent No. 1626, 23rd January 1896.

As any theatre architect knows, the key to a good theatre is good sightlines. This patent came up with the idea of adjustable sightlines, a mechanism whereby the slope of the auditorium could be adjusted as required. It could be operated by either hydraulic jacks, screw jacks or counterweights.

This abridgement is an extract from the forthcoming book 'British Theatrical Patents, 1801-1900'.

1626. Horsfall, W., and Berry, R.  
Jan. 23.



*Floors.*—The floors of theatres, music halls, schoolrooms, &c. are pivoted centrally or at the ends so that they can be tilted to allow the people at the back to have a good view of the stage or platform. In the arrangement shown in the Figure, the floor A is tilted by a series of screws B working through worm-wheels U operated by screws T on a transverse shaft. Pivoted legs or struts P support the floor in an inclined position. The floor may be tilted by hydraulic jacks, or by a winding drum operated by a worm and wheel, and may be balanced by weights and cords.

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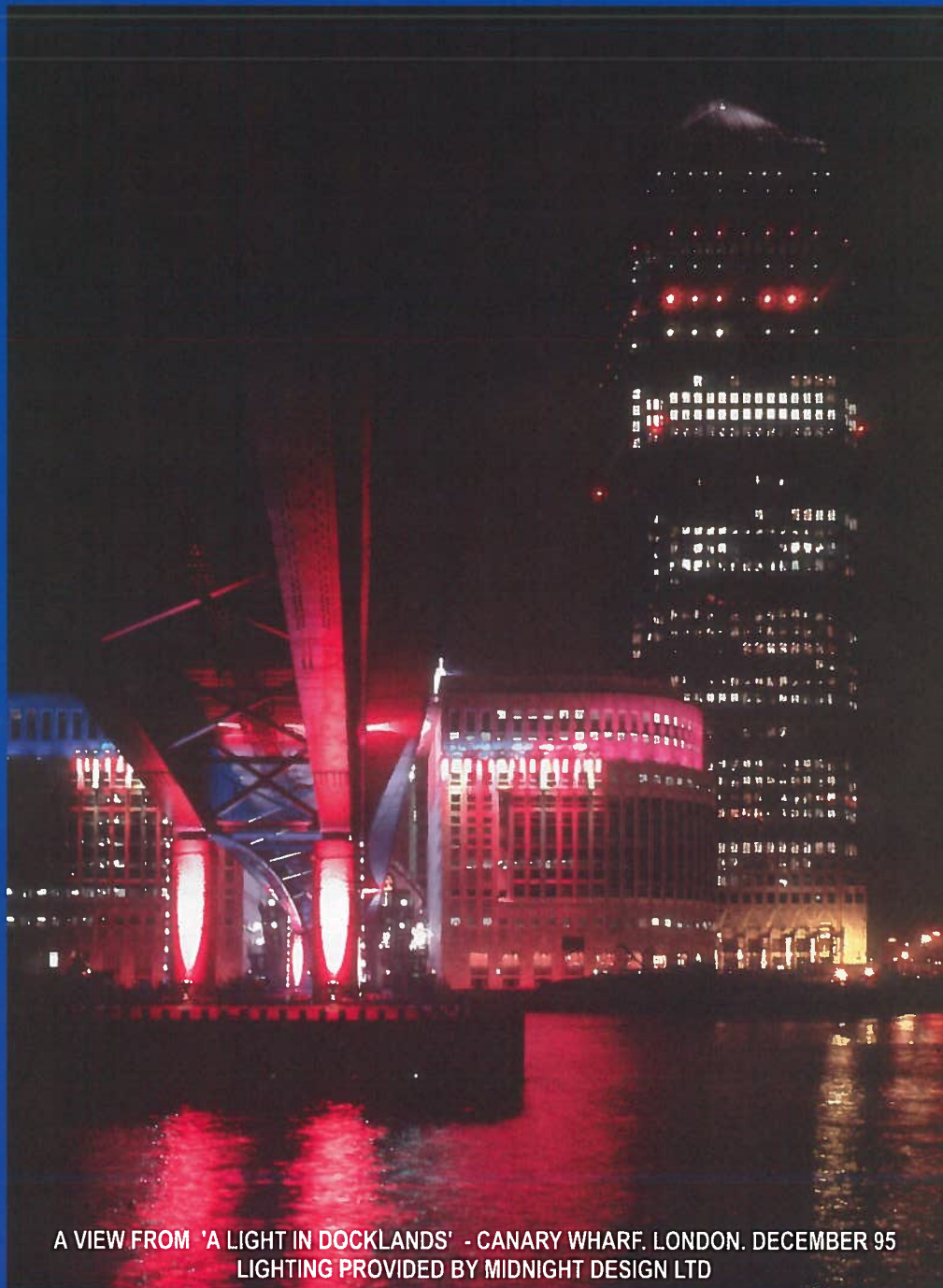
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## Crest of Wave '96

The World Audio Visual Entertainment Fair (WAVE), a new exhibition encompassing every aspect of the entertainment industry, will be held at the Bangkok Convention Center from February 15 to 18, 1996. The Fair will occupy two floors of the Convention Center and there will be over 200 exhibits.

The organisers anticipate thousands of visitors will attend the exhibition daily, including many with specific purchase plans. In addition to professional lighting and sound equipment, WAVE '96 will also feature musical instruments and accessories; duplication and broadcasting equipment; television, cable TV and radio stations; recording companies; entertainment publications; and consumer audio-visual products.

For further information, contact Texcons Pacific Co in Thailand, telephone +66 (662) 950 6601.

## HZ Far East Business

Hz International Ltd has secured business from their new distributors Cube Corporation, based in Japan, valued at more than £100,000. This will effectively be doubled shortly when an existing American arm of Cube Corporation commences its own operation with Hz.

Cube Corporation president, Mr Toshi F Shiroyama, recently spent a week in the UK with Hz discussing his proposals and viewing the manufacturing processes, after which he concluded the visit by sealing his first order.

## Studio Successes

**Elstree Light and Power, the film and TV location lighting specialists based at Millennium Studios, have just secured the lighting contract for Hotel Babylon. Produced by Planet 24 for Channel Four, this series is a replacement for The Word, and is being filmed at Mentmore Towers, the home of the Natural Law Party!**

**The continued growth of Millennium within the commercials market is marked by the shooting of a Maxwell Tapes commercial by BBC Outside Broadcast Resources on Millennium's X stage.**

**Production rehearsals for East 17 and PJ and Duncan have just concluded, making way for Swinger. Produced by Landseer Productions for BBC2 and The Arts Council, Swinger is a contemporary dance piece adapted for TV by Graeme Miller and directed by Ross Mac Gibbon.**

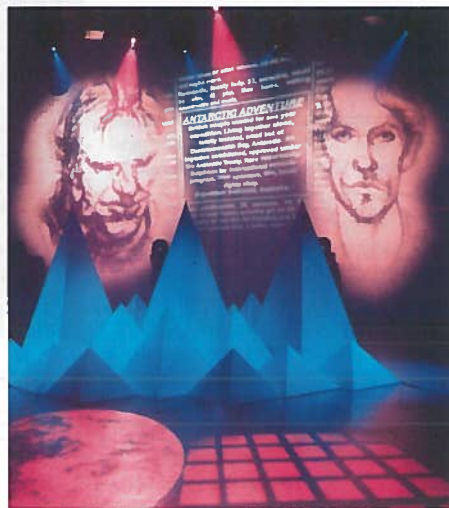
## Belfast Live

Belfast's first dedicated live music venue, The Empire, opened at the end of 1995. Owned by Wine Inns, it will be an influential presence on Northern Ireland's entertainment scene, which has commissioned audio systems supplier PSD Electronics to fit out the new venue.

The company installed a Martin Wavefront 8 system, with mid-highs flown left and right and bass cabinets built in around the stage. The high SPLs and constant directivity allowed PSD to keep the installation simple, but effective.

The system also meets the strict environmental regulations that govern the 600-capacity venue which is situated in an old church, and features not only stained glass, but also six chandeliers and an old bar which was in service for many years in a Texas brothel! The theatre-type interior is beautifully designed and decorated in sympathy with the old listed building.

## VL6 Gobo Investment



One of the advantages of automated luminaires has been their capacity for immediate reconfiguration. The introduction of the Vari-Lite VL2 spot luminaire extended this immediacy to gobo images: through the simple device of a nine-position hub, into which differing gobos can rapidly be inserted, the luminaire is easily adapted to a custom configuration.

Such was the success of this feature, that in the more recent VL6 spot luminaire, this approach has been refined; there are now two independently controlled wheels, each with 12 positions, allowing configuration with up to 22 gobos or colours. A bonus of this two-wheel configuration is the potential for two gobos to sit in the beam simultaneously. Thus, by moving the focus from one gobo to the other a dissolve, or morph effect is achieved.

To emphasise the ease of such customisation and to anticipate much greater demand for custom gobos, Vari-Lite has made a considerable investment in the development of the Vari image process-gobo creation via laser ablation - and has established a 'Vari-Imaging Studio' to process custom gobos and manage the collation of a gobo library. Custom images can be submitted either as hard copy, to be scanned and digitised, or digitally, via disc or E-mail. The processed image is then downloaded to a 75W Nd:YAG laser, which removes (literally vaporises) an opaque metallic coating from the glass gobo substrate.

The benefits of the process are manifold. All gobos are processed on glass, so there is no need for 'tagging'. The process is rapid - when necessary, finished gobos can be produced within hours of receipt of artwork. Apart from opaque coatings, dichroic film can be removed from colour filters to create white images on a coloured background, or vice versa. Finally, 'raster' or pictorial half tone images can be created.

Such has been the success of this process that during the previous year, Vari-Lite Europe Ltd alone has processed over 500 custom designs.

The facility has also led Vari-Lite to establish a library of 110 images, consolidated for both the VL2 and the VL6 spot luminaires. Images include simple shapes, geometric break-ups, clouds (both stylised and naturalistic raster images) tree and leaf break-ups and finally a selection of coloured gobos. These designs are available for purchase, or access to the complete library is available for a supplement to the luminaire rental charge.

Vari-Lite has worked closely with DHA Lighting Ltd to ensure full access to the entire range of the DHA catalogue and library designs - over 500 further designs. DHA is also fully equipped to manufacture custom designs on metal and on glass for both the VL2 and the VL6 luminaires.

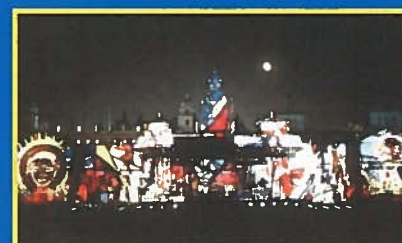
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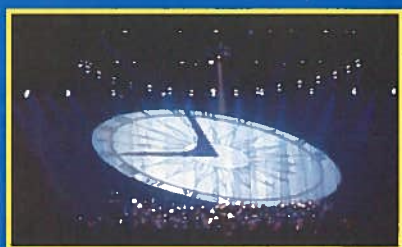
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## An Inspector Calls



In recognition of many years service as ALD secretary, chairman Rick Fisher welcomes Liz Lomas as a 'Fellow of the Association'.

Lighting designer Rick Fisher, chairman of the Association of Lighting Designers, gave a highly informative and entertaining talk to a number of the Association's members at London's Garrick Theatre recently, on his design and redesign of the lighting for the award-winning *An Inspector Calls*.

With set and lighting at his disposal, Rick gave a detailed tour of the current production, discussing the ideas and aims behind the design with around 45 ALD members - one of the ALD's largest attendance figures to date for an event of this kind.

After the session, members were invited to the Theatre Royal, Drury Lane, where, amidst food and drink and the usual story-swapping that goes on at such occasions, Liz Lomas was made a Fellow of the Association for her many years of service as association secretary.

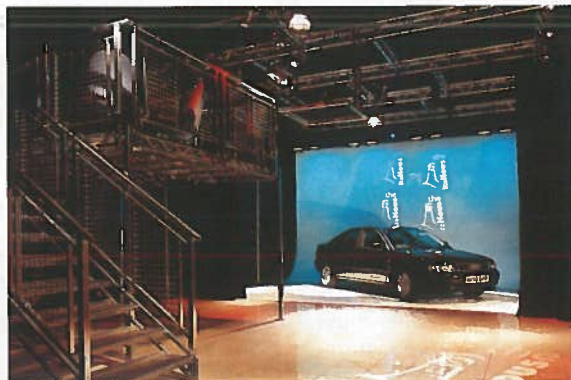
## TPS Litehouse

An entirely new multi-media presentation centre combining state-of-the-art audio/visual systems with professional conference facilities has been launched by Trade Photographic Services, to meet the growing demand for a cost-effective one-stop venue in the centre of London.

Spanning three floors, with each floor dedicated to a specific function, the Litehouse provides the ideal setting for conferences, presentations, photography and advertising shoots, product launches and festive events.

Situated on the ground floor, the 1,000sq.ft marble-decked presentation studio features a 48-channel light and sound system with video projection, complete 'black-out' facilities and photographic cove, together with a mezzanine floor for use as either an observation or meeting area.

By providing an intimate meeting/reception area on the second floor and formal boardroom with full audio-visual facilities on the third and top floor, with in-house catering throughout, the Litehouse is suited to either small groups or larger corporate requirements.



## ShowSpots

The Moving Light Company has announced the purchase of a further 50 ProSpots to meet increased demand within the UK rental market.

The majority of The Moving Light Company's present stock of ProSpots, manufactured by PanCommand and acquired in 1994, are committed to long-term theatrical projects in London's West End, including Jerry Herman's *Mack and Mabel* at the Piccadilly Theatre and Tommy Steele's *What a Show!* at the Prince of Wales Theatre.

White Light and The Moving Light Company recently supplied a complete lighting rig, including 18 ProSpots and 400 conventional lights, to the UK's first professional production of *Mack and Mabel* (see *Asleep in the Stalls*, L+S Dec 95), which transferred to the Piccadilly from the Leicester Haymarket. A ProSpot rig supplied by The Moving Light Company also features in the current UK tour of Richard O'Brien's *The Rocky Horror Show*.

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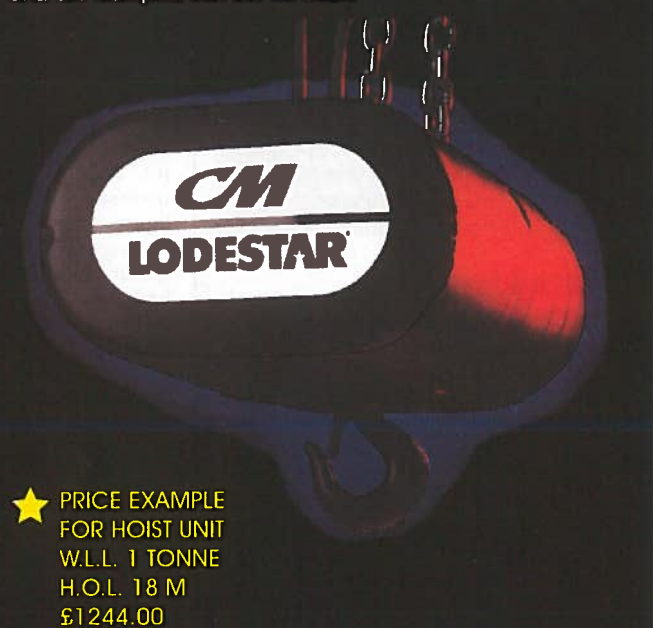
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## Affentour Action

Marius Müller-Westernhagen is one of the megastars on the German rock scene and his recent Affentour was one of the most expensive productions to tour the country - perhaps exceeded only by that of the Rolling Stones.

Over 60,000 fans turned up to each of the 15 open-air concerts across Germany. The brief for Marius Müller-Westernhagen to set designer Mark Fisher was for an integrated look. Thus, Fisher created a 'black box' resembling an oversized theatre stage, with a larger than usual apron. To prevent the height of the black box



from appearing optically overweight, a suspended walkway running across the stage was integrated into the design at mid height. This served as an additional performance area for both the singer as well as for a trapeze artist, and was connected to the stage floor by a spiral staircase.

A further catwalk, approximately 30m long, ran above the audience from the main stage to the mixer tower, whose roof also served as a performance area. Incidentally, two identical stages had to be built by Show Co and Bhnenservice Augsburg to accommodate the tight scheduling, which didn't allow for a single stage to be dismantled and reassembled between performances.

A Sony Jumbotron videowall was positioned centrally beneath the main walkway and directly integrated into the performance on the stage in order to centralise the main field of view for the audience.

Patrick Woodroffe as lighting designer and Günter Jäckle as lighting director were responsible for the lighting design. Woodroffe dealt with conception and co-ordination, while Jäckle was responsible for material selection, detail planning and technical realisation. The man with overall

responsibility was production director Gerd Knüttel from Rocksound/Media Design in Hannover, supported by Tobias Kühnel of Rocksound as production manager.

Although conventional lighting was used on many occasions for spectacular scenes, the lighting on the tour was dominated by intelligent lighting, notably 24 Golden Scan 3s, eight Superscan Zooms and 63 mixed Vari\*Lites. These were supplemented by a Hardware Xenon projector, 20 3kW strobes from Diversitronics made available in modified form by Feiner Lichttechnik and seven Super Trouper followspots, complemented by four Shadow HMI 1200s installed on the stage walkway.

In the mixer tower there were two MA Lighting LCD controls with 60 and 120 channels respectively, as well as a Scancommander plus Extension from MA. The Vari\*Lites were controlled by a dedicated Artisan.

Flash-Art pyrotechnic experts from Bielefeld adding the finishing touches by including a stunning pyrotechnic stage waterfall - an 18m wide silvery torrent of fire plunging 8m into the depths, and, without exaggeration, the optical highlight of the finale.

## New Year Link-Up



On the stroke of midnight on New Year's Eve Subvition and VLC performed the first live video link-up between two Dance events for Dreamscape - one at the Sanctuary in Milton Keynes, the other across the country at the Bath and Wells Showground. Video and sound were sent via an ISDN link from two Pictoretel 4000 video conferencing systems, allowing for images to be mixed from two cameras at each venue.

These images were run through Panasonic AV-5 mixers so that live images could be mixed with Subvition and VLC's Dreamscape graphics. A Barco 5000 and 8000 were used to project these images onto two large videoscreens allowing 12,000 people at both venues to usher in the New Year together. If thousands of people can be linked in '96 what of the future? Will New Year's Eve 2000 see people travelling to parties in Moscow down ISDN lines . . . Subvition and VLC are already planning for it.

## Sunset Strasse

*A new production of Sunset Boulevard opened in the Rhein Main Theatre in Germany in December, with a host of British companies involved.*

Theatre Projects were the main suppliers of lighting equipment which included 17 DHA Light Curtains and six Robert Juliat 2.5ks, whilst Stage Technologies provided automation systems for the show. The company designed the system for the original show, which opened in London in 1993, and worked with the same production team at the new venue. The equipment, which includes 26 winches, 40 axes controls, one Acrobat! control desk and one Juggler! control desk controlling an 8.5 ton house, underwent trials in the UK before being installed.

Another British company, Howard Eaton Lighting Limited, also worked on the production recreating the silent film sequence in which Norma Desmond watches her old silent movies. To do this, HELL manufactured a copy of a 16mm cine projector and used a DF 50 fogger to create the haze needed to make the projector beam visible.

The company was also commissioned to refurbish a number of old film lights for studio scenes and manufactured copies of old units which are no longer available. A fibre optic star cloth was also supplied as was a range of HELL products, including KK effects, relay racks and newly designed followspot dimmers with digital read outs.

The HELL team also provided and installed the wiring and lighting built in to the mansion.

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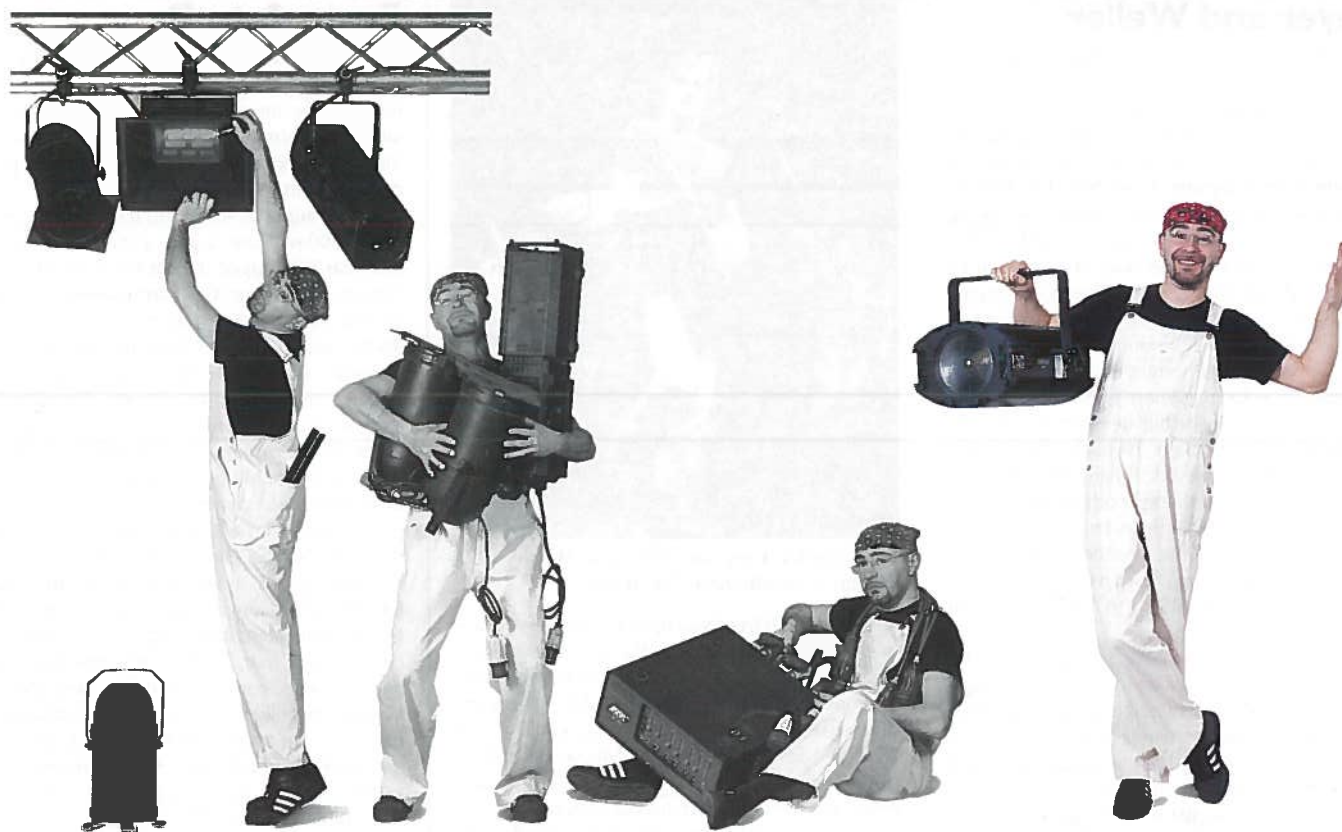
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# FLY

## Meyer and Weller

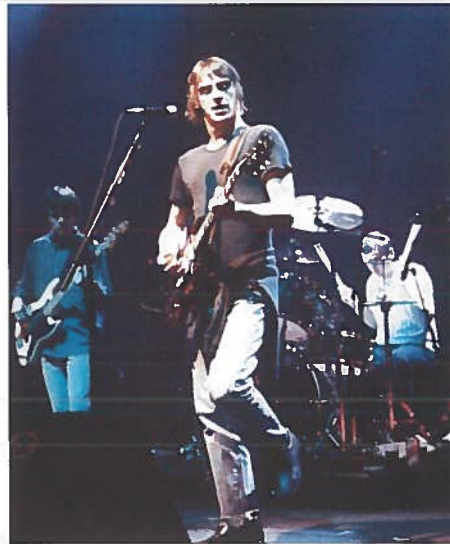
Meyer PA systems have always had a reputation for innovation, and it's not unusual to see their cabinets augmenting other PA systems, particularly for enhancement of the vocal sound. The new MSL4 is part of a whole range of self-powered cabinets launched by Meyer, following in the tradition of innovation and being geared for vocal reinforcement, but at the equivalent of US\$9,000 per box, we might not be seeing (or should that be hearing?) a lot of them.

Canegreen, long time exponent and rental supplier of Meyer equipment, have, however, taken the plunge and bought enough cabinets to constitute a system. When I asked managing director Yan Stile why he had been prepared to dip so deeply into his pockets, he said: "They're the best thing I've ever heard. I listened to them in comparison tests and there's nothing like them".

In essence, the cabinet bears comparison to the MSL3 in performance and intended usage terms, but only just. Frequency response is from 65Hz (10Hz lower than the MSL3) to 18kHz from just two drivers - a 12" and a 2".

Amplification, from a 620W per channel Mosfet amp, is built-in, as is an automatic voltage selection system called Intelligent AC, designed to cover fluctuations between 208-235V in the European version, and a two-way corrected crossover. Despite the component content, the weight and space saving from the reduced number of drivers actually makes for a cabinet weight of just 82kg and almost half the height, with the same footprint as the MSL3. The elements of weight, size and space saving, matched to performance, make this system worth contemplating. The system's first outing for Canegreen was on the seemingly open-ended Paul Weller tour.

Sound engineer Ange Jones has only recently been converted to the Meyer way. When Ange started mixing for the band three-and-a-half years ago, Paul Weller had his own vintage 1970's C3 system. He has, in fact, taken out a mixed system, adding DS2s and the 650 sub-woofer, as per Meyer's recommendation. As this was a bass-heavy combination, Ange did try sound-checking the band *without* the DS2s, but as he explains: "I found there was an unacceptable loss of weight at the bass end." On the plus side, he found several



Paul Weller tries out the new Meyer MSL4 system at Humberside Ice Arena.

advantages: "It frees you up because everything is in phase with itself, due to the time alignment in cabinet, and if you're flying the cabinet, you don't lose power through the speaker cable." There are, of course, obvious physical bonuses from the all-in-one design, notably reduced consumption of truck space and less need for on-stage space, especially with regard to loss of amp racks.

I heard the system in action at the Humberside Ice Arena in Hull. In terms of an acoustic environment, this arena can be likened to the delight of finding a decomposing frog in your half-eaten soft centre chocolate. Why anyone would want to recreate the Whitley Bay Ice Arena (which it closely resembles), 20 years after the original disaster, is quite beyond me. Remedial action has been taken, and the underside of the roof is lined with a thick blanket of soft fibrous material, but this has done little to reduce the brittle, bouncy sound from the walls. Furthermore, the hall appears to have an unrealistic audience limit - the sell-out 3,700 crowd barely came two thirds of the way down the rink, so the atmosphere was wanting.

It's a long room, relative to its width (there's little in the way of bleacher seating for the ice hockey games) and has a surprisingly low roof for a venue of this type. Ange didn't fly a delay cluster, as beam clamps are required - he would have been wasting his time anyway, as the sound at the back of the room was, in fact, better than almost anywhere else, because the slap was least noticeable from the back wall and the level was more than adequate. However, it is worth noting how easy it would have been to fly the MSL4s: with just 10 amps per cabinet needed for mains, and with signal from one of the matrix channels of the Yamaha PM4000, remotely positioned speakers are simplicity itself. As Ange commented: "In terms of arraying fill speakers into discreet locations, this set-up is easy, even sending a completely separate mix is no problem."

Paul Weller has a distinctive, smoky voice, not unlike Stevie Winwood in his Blind Faith days, and the whole band style is redolent of the classic blues era. The mix is uncomplicated - just a little reverb here and there - allowing the instruments to stretch and fill the gaps. Despite the inherent dangers of the room, Ange was able to achieve the high pressure level and clear definition between all the instruments, as is the typical characteristic of Meyer systems. Such clarity can sometimes be unforgiving, but not in this case.

Steve Moles

## From A to B

A B Consultancy have continued their rapid expansion plans this summer. Following a hectic few months installing sound and lighting (from small systems to major rigs) at University Students' Unions, the company has changed its name and moved to new premises.

Now trading as ABEE Ltd, the company have a new 2,000 sq.ft unit. Lighting equipment specified this year has ranged from a set of six Martin Pro 805s to a set of four High End Systems Cyberlights, several Pulsar Masterpieces and a Jands Event 48/96. Sound supplies have included numerous C-Audio amplifiers, effects processors, Spirit mixing consoles; a 48 channel Soundcraft K3 console (supplied to Warwick University) and assorted microphones. Of particular note is a recent series of Martin Audio speaker installations in student unions across the country.

The largest installation so far is Bournemouth University's 'The Old Fire Station', a new venue comprising a live music/dance area with adjoining bar downstairs and a restaurant with bar upstairs. For the main area, Abee specified a sound system consisting of four F1 mid-high cabs and four F2 bass speakers, complete with two dedicated MX4 system controllers. Installed in the restaurant and bar areas is a total of 20 EM15 bar loudspeakers and in the DJ booth, two EM15 DJ monitors.

ABEE Ltd can now be contacted at 14 Cavans Way, Binley Industrial Estate, Coventry CV3 2SF, telephone: (01203) 653900.

## Min Jin Mics

Korean violin prodigy Min Jin Kim recently made her showcase appearance in London aided and abetted by Audio Technica.

Prior to using the Audio Technica 4033s, Min Jin was not a fan of microphones, believing them to add impurities to her sound. However, according to sound engineer Peter Kiely: "Following the recital, Min Jin told me it was the first time her violin had sounded just as she wanted - a fact I put down to my use of the 4033s."

## Canford Export Success

Canford Audio plc has announced substantial increases in sales and profits. Group turnover rose by 23 per cent in 1995 to £12.3million and pre-tax profits rose by 17 per cent to £781,000.

The strong performance was fuelled by a surge in export sales. These rose more than 50 per cent to over £3.5million pounds, and now account for over 26 per cent of turnover. In the last year more than 70 countries bought Canford products. Over two thirds of the company's exports go to the European Union, and a fourth European sales office was opened in September in Munich to join the company's other operations in Brussels, Dublin and Strasbourg.

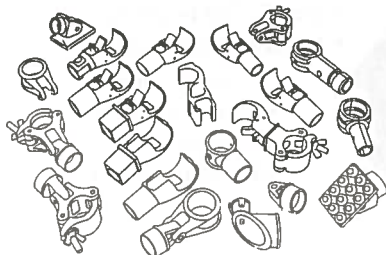
The company has invested heavily in the past year, doubling the size of its European HQ in Washington and increasing staff by over 20 per cent. There are plans for additional European offices over the next 12 months.

In recognition of their export achievements, the company has won the 'Barclays Northern Business Export Award', and were also runners-up in the 'Company of the Year Award' for all-round excellence.

These accolades came at the end of the year in which the company achieved ISO 9001.

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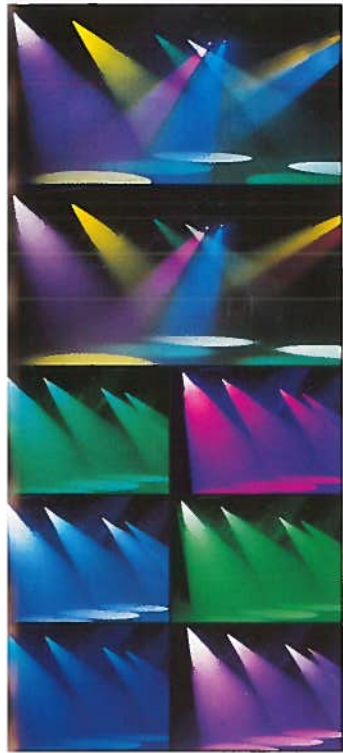


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## IAAPA Rides On

L+S's roving reporter spotted several PLASA members at the 7th IAAPA Show (International Association of Theme Parks and Attractions) held in November in New Orleans.

Mostly en route for LDI '95 in Miami which followed immediately afterwards, they were amongst 20,856 other visitors to the annual event which occupied 350,000sq.ft in the New Orleans Convention Center featuring impressive exhibits of the latest technology and entertainment equipment for the burgeoning theme park industry.

It is a pity for those who need to attend both this show and LDI that next year's IAAPA will take place again in New Orleans from 19th-23rd November, whereas LDI '96 will be in Orlando. Guess where IAAPA goes in 1997? To Orlando, naturally!

## Mark IV Seminar

**Mark IV Audio recently held a two-day Pro Sound seminar at the Maritim Conference Hotel in Darmstadt, Germany. The seminar attracted over 140 delegates worldwide.**

## New Year Contacts

The new year has brought about a number of expansions and relocations. Below are the address changes we have been notified of:

*Sound Dept* have moved into a new 4,500 sq.ft facility. They can be reached at 19 Blacklands Way, Abingdon Business Park, Abingdon, Oxon, OX14 1DY. Tel: (01235) 555622.

*Sennheiser UK* are now located at 3 Century Point, Halifax Road, High Wycombe, Bucks HP12 3SL. Tel: (01494) 551551.

*Specialist Lamp Distributors (SLD)* have moved from their Camberwell premises to larger ones in Croydon. The new address is 30 Factory Lane, Croydon, Surrey CRO 3RL. Tel: 0181-240 0050.

*Reflex Sound and Light Systems Ltd* has moved premises. The new address is Reflex House, Lowton Way, Hellaby Industrial Estate, Rotherham S66 8RY. Tel: (01709) 701977.

*Beyerdynamic* can now be contacted at 17 Albert Drive, Burgess Hill, West Sussex RH15 9TN. Tel (01444) 258258.

*PSL* are now at 9/10 Redesdale Court, Forest Grove Business Centre, Middlesbrough, Cleveland TS2 1RL. Tel: (01642) 254225.

*Oskar Lapp Ltd* has opened new premises on the London Road Trading Estate in Mount Vernon, Glasgow. Tel: 0141-764 0666.

*Nexo France* has opened a UK office. Nexo International are at 2, Lyon Road, Walton-on-Thames, Surrey KT12 3PU. Tel: (01932) 886007.

*SGM Elettronica* of Italy have moved to new premises and can now be contacted at Via Pio La Torre 1, (zona artigiani Pirano), 61010 Tavullia, Pesaro, Italy. Tel: +39 (0721) 476477.

*Vari-Lite Holdings, Inc*, the holding company for several well-known entertainment service and technology companies, has changed its name to Vari-Lite International Inc.

From 22nd January, *Zero 88 Lighting Ltd* can be contacted on central telephone and fax numbers. Tel: (01633) 838088 Fax: (01633) 867880. The sales department has moved to new premises at Norman House, 97-99 London Road, St. Albans, Herts AL1 1LN. The showroom and training centre, quality and accounts departments are now at the company's existing premises at Usk House, Llantarnam Park, Cwmbarn, Gwent NP44 3HD.

## Grand National



The National Club, in north London, has recently undergone a major refurbishment operation, following its closure in 1993 and its delayed re-opening caused by licensing complications.

Avitec were asked to propose an in-house installed system for live use. During the two year impasse, they revised their specification for the live sound and stage lighting (in conjunction with Vincent Rice Design) and proposed an upgrade to their existing lighting rig and new lighting in the Dome Bar disco, as well as re-utilising their formerly installed Dynacord speaker system in the Dome Bar.

The lighting rig upgrade included the addition of chasing neon outlining much of the Trilite rig, replacing the centre effect with a Griven Helios 1200 DMX, adding eight Griven Maire 'fan beam' effects, two Griven 'Smile' units, four FAL Multi-tunnels and four Griven Magicscan 575 intelligent heads. The control system was upgraded to DMX control via a Pulsar Masterpiece 108. The rig was raised three metres to create better sightlines to the stage area, and to meet the requirements set by National Heritage and the architect.

The Dome Bar installation re-used some items from the main rig, with Trilite trussing placed between the pillars under the 'dome' curve of the balcony to support the fittings. These included two Optikinetics Solar 575s with Solar systems, and four Meteor Clublight 250 intelligent heads controlled by the Pulsar Masterpiece 48. Also installed is a Hardware Xenon 5kW slide projector, along with a Solar 575/Solar system, both projecting onto a Harkness rear projection screen.

For stage lighting 12 Par 64 eight-bars, along with six floor aero bars (Par 64 ACLs) and floor Par 64s, driven from 72 channels of Anytronics DMX dimming packs and controlled by a Celco Aviator T180, were installed. Avitec specified a Le Maitre Genesis G300 smoke/haze machine and Griven MSR 1200 followspot for stage use.

The sound system consists of two flying clustered arrays, each containing six Martin Audio F1 MH, horn-loaded mid/high cabinets which are combined with 16 F1 B horn-loaded bass cabinets and driven by 12kW of C-Audio amplification. For the disco front end, Avitec used Vestax PPT-5000 turntables along with Vestax CD-33 twin CD and a Cloud CXF mixer. A 40-channel multicore is provided between stage and FOH mixing position to allow visiting bands to utilise, via their FOH mixer, the installed sound system.

## DeeWeld to stock CM

DeeWeld Ltd of Chester will become stockists of the Columbus McKinnon Lodestar theatre hoist. The hoist is manufactured in Canada in accordance with ISO 9002-1994 and complies with the EU Supply of Machinery (Safety) (Amendment) Regulations 1994. All hoists will now be stamped with the CE Mark.

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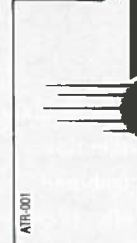
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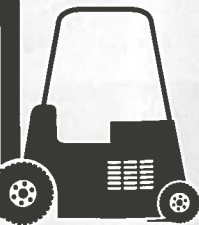
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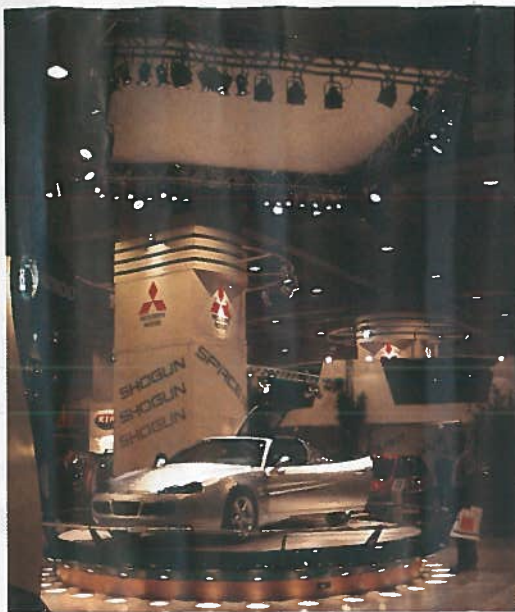


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## UK First for White Light



White Light has won the contract to supply the exhibition lighting rig to South Korean car importer Daewoo in a 12 month agreement which makes the first use of Source Par lamps in the UK. A total of 57 lower energy 575W lamps, developed by US-based ETC, recently made their debut at the London Motor Show, followed by the Scottish Motor Show in Glasgow.

Daewoo promotions manager, Nigel Unwin, said: "The lighting supplied by White Light has contributed to a very impressive display. We are particularly pleased with the energy-saving benefits of the smaller-size Source Pars."

## People News

Harman Pro has announced the appointment of **Mike Bartlett** to oversee a new group of companies comprising Turbosound, PDL and the newly acquired amplifier manufacturer, C Audio.

Clive Green & Co Ltd has augmented its management team with the appointment of **Mike Mann** as head of sales in Europe. Formerly product marketing manager at Soundcraft, Mann's track record spans both the live sound arena and console technology.

Soundcraft is expanding its presence in the Far East, recruiting **Adrian Bailey** to spearhead the sales drive in this region. Adrian, formerly with Neve's turnkey operations, has spent many years in systems design and sales for the broadcast and recording industries.

Mushroom Lighting have appointed **Alex Johnson** as general manager for their new London office at Tower Bridge. Johnson, who previously worked for White Light, will be running the company's new London showroom.

**Derek Gilbert** of Glantre Engineering was one of four recipients of the 1995 TCI Awards, presented by Theatre Crafts International at a recent ceremony held at the Players Club in New York. The TCI Awards are held annually to honour the accomplishments of people who have made outstanding contributions to the entertainment design and technology industry.

After three years of late-night study, **Salman Bhatti**, Lighting Technology's group financial controller, has passed his MA in business studies.

**John Turpin** has joined Holmes Marketing & Distribution Ltd after 10 years at Arri GB in both their camera and lighting divisions. He will be responsible for the management of Chimera Lightbanks, K5600 Lighting and Century Precision Optics.

**Jane Hewett** has joined Northern Light's Edinburgh sales team. Previously with Blacklight, she will be in charge of new business and liaison with suppliers and customers.

**Mike Coster** has joined Midnight Design as hire manager. He was previously employed in the technical department of the ICC at Birmingham.

## Towards the Millennium

Under this rather pretentious banner, 100 British directors and 20 from the rest of Europe, met at Trinity Hall, Cambridge in December. The first Forum for European Theatre Directors organised by the Directors Guild of Great Britain was primarily a talking shop, as might be expected, but it was leavened by workshops and talks given by leaders in the field.

After a typically messianic opening address on the first evening from wunderkind American director Peter Sellars, the conference proper got under way the next morning with a panel in which Jude Kelly from West Yorks, Patrick Mason from the Abbey, Suzanne Osten from Unga Klara children's theatre in Stockholm and Gabor Tompa from the Hungarian theatre in Cluj, Romania, talked about their work and their aspirations.

Jude Kelly set some of the theme for the coming discussions with her suggestion that artistes should be driven by their own demons - or lack of them. In the face of some pessimistic comments from the floor, she also declared that directors of state-funded theatres, like herself, had a duty to be 'institutional optimists'. It was all too easy to be depressed by lack of funds or lack of public response; nevertheless, theatres were funded, responses were there to be provoked.

Ian Brown of Edinburgh's Traverse confessed to being in a schizophrenic state. On the one hand, the corporate sponsors he was forced to woo were coming unwillingly to his theatre and staying to applaud. On the other hand, he had the feeling of having spent eight years building a theatre that nobody really wanted. Comfort came from Hamish Glen of Dundee, whose aggressive programme of price reductions had increased the local audience from 13 per cent capacity to 73 per cent.

This schizophrenia was a marked feature of the weekend. On the one hand, directors were worried about the decline in both funding and audiences, whilst on the other there was steady talk - sometimes from the same people - of new Lottery-funded buildings, new companies, new initiatives of all kinds. On the Saturday afternoon delegates had the chance to take two out of a selection of six practical workshops: the RSC's John Barton unravelled Shakespeare and David Freeman of Opera Factory conducted a music session.

More adventurous fare was available in the shape of a Meyerhold workshop from Alexei Levinski, one of the few teachers still able to recreate his biomechanic training exercises. Wlodzimierz Staniewski of the ground-breaking Polish music-theatre group Gardzienice demonstrated the use of rhythm in performance, while Johan Simons from Holland and Kirsten Dehlholm of the Danish group Hotel Proforma both introduced part-staged site-specific work. Simons' contribution was a happening in the college kitchens, whilst Dehlholm more ambitiously showed the possibilities of adding lighting and soundscapes to the anthropological museum and the Cambridge Union.

At the evening's banquet, Joan Littlewood was presented with a lifetime achievement award by Michael Bogdanov, who also took part in the next day's wind-up discussions. Inspiration was on offer, too, from Peter Brook in a televised address from Paris.

Not everyone felt the conference was a success - in particular the overseas visitors wondered aloud why they had been invited to what seemed to them an introspective, parochial event. But for a first effort that brought together both experienced and fledgling directors to share experience on equal terms it was certainly good enough to bear repeating next year.

There was even a subversive suggestion that the next of these events might include representatives of other disciplines - actors, writers, and who knows, perhaps even technicians.

Ian Herbert

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## ABTT Open New Offices



The Association of British Theatre Technicians launched their new office and meeting facilities to an invited group of industry personalities on 11th December. Based at 47 Bermondsey Street, near London Bridge Station, the smart new reception area is shared with The Stage newspaper, who occupy the rest of the building, and in addition to office space, the library area serves as a council meeting and function room.

Chairman David Wilmore welcomed guests and paid tribute to Catherine Comerford, managing

director of The Stage, for their support. In the picture above, L+S's John Offord garnered a group of guests for a photocall to celebrate the occasion. Pictured below (left) are Jenny Straker, ABTT administrator, and David Wilmore (right) with the new director of the Theatres Trust, Peter Longman and retiring director John Earl. Pictured below (right) are the redoubtable Fred Bentham with Geoffrey Joyce, ABTT development consultant, former executive secretary Ethel Langstreth MBE, and council member Bill Graham.



## Shiki Sound

The Shiki Theatrical Company of Yokohama, Japan, has purchased two new Cadac J-Type mixing consoles from Clive Green & Co Ltd. The desks are for two new productions of the musical *Beauty and the Beast*, which opened in Tokyo and Osaka in late 1995, featuring Shiki's own sound design.

The J-Types will complement Shiki's existing E-Type and A-Type consoles on the company's wide-ranging repertoire of musicals. These include *Phantom of the Opera*, *Cats*, *Rikoran* and the Kabuki-style version of *Jesus Christ Superstar*. The J-Types are identically specified, with 45 inputs, 12 subs/24 matrix groups and 10 programmable routing modules.

## C-Audio Countdown

C-Audio's XR series, which launched the Cambridge-based company into the high powered amp market, have been chosen by Marquee Audio to power the 17k JBL system recently installed in The Rocket Theatre, University of London.

The XR 3801 has also been installed into Oscars in Longleat, West One in Welwyn Garden City, The Venue in Burton on Trent and students unions at the City University, London and Bournemouth University. The XR3801 is also the choice of John Henry Enterprises and SWB Products, where they are proving to be a reliable addition to touring systems.

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## Club Oasis Opens

Leisure Resources International have completed another club installation, hot on the heels of their recent Terminal 396 project for University Union Cardiff, this time an 800-capacity dance club in the heart of Crawley, West Sussex.

Located in a warehouse on an industrial estate, most operators would consider the site ideal, with few neighbours and plenty of parking. However, the local council insisted on a 0dB ambient level at the nearest residences - a mere 500m away. LRI acted as liaison in conjunction with an independent acoustic consultant, to ensure that the requirements of the EHO were met in full. As a consequence, the lighting rig - almost 12m across - is free standing and the stage area is filled with rubble and de-coupled from the external walls.

The whole installation is on a long term lease-rental from Martin Rental, which includes both lighting and sound. The club is due to be opened by Latoya Jackson in mid-January.

## Entec Choose d&b

Middlesex-based Entec Sound and Light has, after careful evaluation, purchased a d&b audiotechnik 402 system.

Simon Johnston of d&b said: "The growing success of the 402 System in England reflects the impact the product has had elsewhere in Europe. It is very flexible, easy to transport, handle and set up as well as producing a robust sound - all the key points in a buying argument. We are very pleased that Entec have invested in this system and are glad to welcome them to the growing list of d&b owners."

## Mushroom Tower Bridge Opening



Mushroom Lighting has opened its new 2,000sq.ft office and warehouse at Tower Bridge, London, to service the growing number of customers in the conference exhibition and event markets. The company also plan to expand their dry hire division as a service to other companies. Pictured above at the opening are Zoey Allington, Ian Robson, Andy Bedborough, Alex Johnson (who will be the general manager of the Tower Bridge office), Paul Butler (MD of Mushroom Lighting), Paul Simpson, Jo Carpenter and Harold Waldeck (general manager of ICRC - Industrial & Concert Rigging Company - France).

## Jands Help Times Square Ball to Drop

New Year's Eve is a time for celebration across the globe, but this year Jands were celebrating a special triumph, as their new lighting console, the Jands-Hog, was chosen to control the massive 7kW Xenotech Britelights which created the spectacular effects for the ball-dropping extravaganza in Times Square, New York City.

The ball-dropping ceremony is one of the highest-profile television events of the US year, and features an aluminium ball, five feet in diameter and heavily laden with effects, dropping from a 70ft pole on the stroke of midnight. Jands report that the ceremony was executed without a hitch, marking the end of a very successful year for the company.

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## Clothes Show Live



photo: Dave Irwin

The Clothes Show Live is now an annual event held at the Birmingham NEC, and during its recent six day run, it played host to over a quarter of a million visitors. The majority of the NEC was taken up with individual stands and stalls, but the centre-piece of the event was the Catwalk Show, staged in the vast NEC Hall 12, host to some of the major touring rock concerts.

To handle the demands of such a performance, TV lighting director Stan Snape employed an impressive arsenal of automated equipment supplied by Meteorlites. The workhorse of the rig was the Vari-Lite VL5 colourwash. In all, 72 were used, mainly on a large truss suspended over the 'downstage' end of the catwalk. These were supplemented by some 40 1200 MSR Cyberlights and a similar number of Par lights with colour changers.

Two major moving elements designed by Unusual Rigging were included in the rig. The first of these was the central spine of the catwalk, which could be raised heavenwards to reveal a slit trench bisecting the remaining stage and providing an entrance from below. This 'trench' was lit from within by Pars, and from the underside of the flying catwalk 14 of the Cyberlights were hung. The second moving element was four large pantograph units, the tops of which were suspended from (and moved along), four radial truss sections. The lower end of these each supported three Cyberlights, which swooped over the audience to park at any height over the stage, or were retracted back when the scene needed to be opened out.

Commentary from the presenters was via radio mics, as was the pick up from the featured guest 'live' performers, with each scene having its own musical score recorded on CDR and flown in on cue. The whole assemblage was mixed on a DDA CS3 16-channel console FOH and relayed to eight speaker clusters flown from the main truss. Speakers and amps were supplied by Stratford Acoustics, and comprised 16 Meyer UPAs supplemented by 14 of Stratford's own mid-high cabinets and 14 of their co-axial wedges. There were also 16 2x18 subs installed underneath the raked seating.

Orange Hand Productions designed and ran the Menswear Stage with a lighting rig supplied by Meteorlites. A videowall built into the back facade relayed live pictures and snatches of commercials. Sound was supplied by SSE and comprised six of their BetaMax cabinets, with two EV MTL2 subs hidden beneath the stage. Moving Images designed the Sportswear Stage. Here the sound was handled by Dave Walker Sound, whilst lighting designer Richard Dale created a striking series of effects from a few Parcans and some very well chosen colours.

Martin Knight

## Laser Course Launched

Thames Valley University, in association with Laser Creations International, have launched a new four-day course for those wishing to gain a grounding in the creative use and safe control of laser light for laser show presentations and special effects.

The course is aimed at those already working in the audio-visual or nightclub industries, who would like an introduction to using laser display/projection. It will cover basic theory of coherent light, basic laser technology, active and passive optics, controlling simple laser beams, incorporating graphics, planning and designing a laser show and production of a laser show synchronised to music.

A key element will be the emphasis on Health and Safety aspects when designing laser shows and an examination of the criteria for correct PM19 completion. The course will also provide an overview of more advanced laser technologies in media and entertainment. Accredited by the University as a 'half module', successful completion will provide 7.5 credit points towards level 1 of an undergraduate degree.

Further information is available from Leon Williams at Thames Valley University, telephone (01753) 697719.

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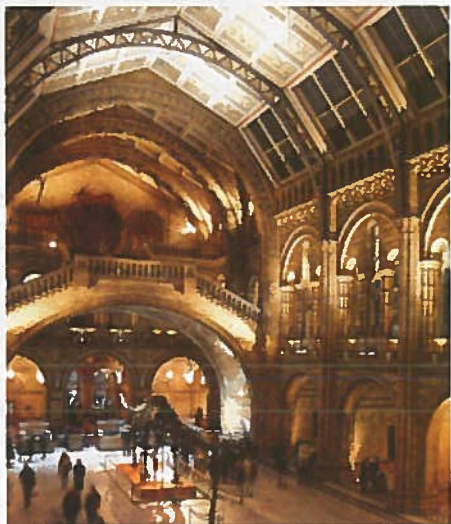
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## Natural Light



Visitors are seeing The Natural History Museum's Central Hall in a new light, after the completion of a year-long project which complements the architecture of the famous building, designed by Sir Alfred Waterhouse and opened in 1881.

The lighting in the Central Hall has been replaced with a system consisting of up-lighters to illuminate the vaulted ceiling of the main entrance, architectural lighting in the main hall and a whiter light to bring out the gold and green colours of the botanical ceiling panels. Lighting designer John Bullock explained: "We've tried to be true to the spirit of the Victorian architecture and we have spotlighted the major structure so that visitors can discover the smaller features for themselves."

The new energy efficient system has manual and automatic switching (master control by BMS), plus dimming on all feature lighting.

## USITT Conference

The USITT Annual Conference & Stage Expo will take place from 13-16 March 1996, at the Tarrant County Convention Center and Raddison Plaza Hotel, Fort Worth, Texas. Over 3,500 visitors are expected to attend.

For further information contact USITT in New York, telephone +1 212 924 9088.

## Magical Laser Effects

Laser Magic, of Seaford in East Sussex, are currently supplying a range of new services, including Stereoscopic laser shows, which produce the effect of laser images appearing up to five feet in front of a special silver projection screen.

Two additional services which will be available this year are a solid state laser video projector with no moving parts and a 3D video system which projects any video format in space, without the need for projection screens, creating an image that appears to hang in mid-air.

## Crest at Olympics

An impressive array of Crest amplifiers are to be installed in the new Olympic Stadium being constructed for the 1996 Summer Games in Atlanta.

A total of 142 Crest power amplifiers will drive the permanently-installed system, all under NexSys control. From the professional Series, 88 model 4801s, 27 model 7001s, six model 4601s and nine model 8001 amplifiers will be used. Nine FCV440s and two FCV220s comprise the rest of the Crest equipment list, with a singular 1501A amplifier to drive the nearfield monitors.

The multi-purpose facility will be at the centre of the action when the games begin on July 17th this year. The system will provide audio for a variety of events during the Olympiad, as well as future Major League Baseball seasons when the division-leading Atlanta Braves move in for the '96 season.

## Gøgler Appointment

Gøgler Lys based in Aarhus in Denmark have been appointed as the exclusive distributor of the Ludwig Pani range of projection products for Denmark.

The contract commenced on 1st January 1996, and the company take over from the previous distributor, Audilux, whose relationship with Pani began in the early 1970s.

## Internet Live

Just before Christmas, PLASA's Internet provider, Pavilion, published statistics of accesses to the PLASA World Wide Web site, dating back to the middle of May.

The figures, broken down into source countries and type of institution, were, we are pleased to report, extremely encouraging. They show that the number of people around the world accessing the PLASA site has grown from 1,185 during the month of June last year, to a massive 6,147 in November. The report for the week ending December 2nd showed that in that week alone, the site had been accessed almost 240 times every day on average.

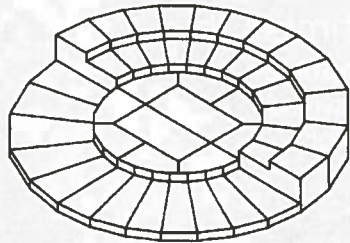
November's record figures show that out of the 6,147 accesses, 1,604 came from commercial sources in the United States, compared with 449 from UK commercial companies. In total, the site was accessed from 34 different countries during November, the highest number (other than the USA) coming from Finland (202), Sweden (152), Canada (148) and Australia (90).

- New to the World Wide Web is the **ProStudio & Live Audio** site, published by World Wide Business Communications. From the main index, the user can access news, product reviews, a cross-referenced directory and information from individual manufacturers and suppliers. The product profiles contain hands-on appraisals of audio devices from microphones and MIDI units through to high-level production mixing consoles. Take a look at <http://prostudio.com> or alternatively follow the link from PLASA's Home Page.

- Also new is EurOnline, the electronic version of the European Business Catalogues. Here, you can have your company represented with a home page and catalogue in five different languages. Look at <http://www.euronline.fr/homepage.html>, or e-mail [euronlin@europages.com](mailto:euronlin@europages.com) for further information.

Lee Baldock

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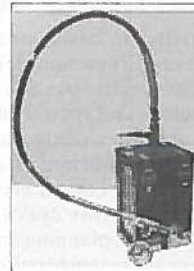
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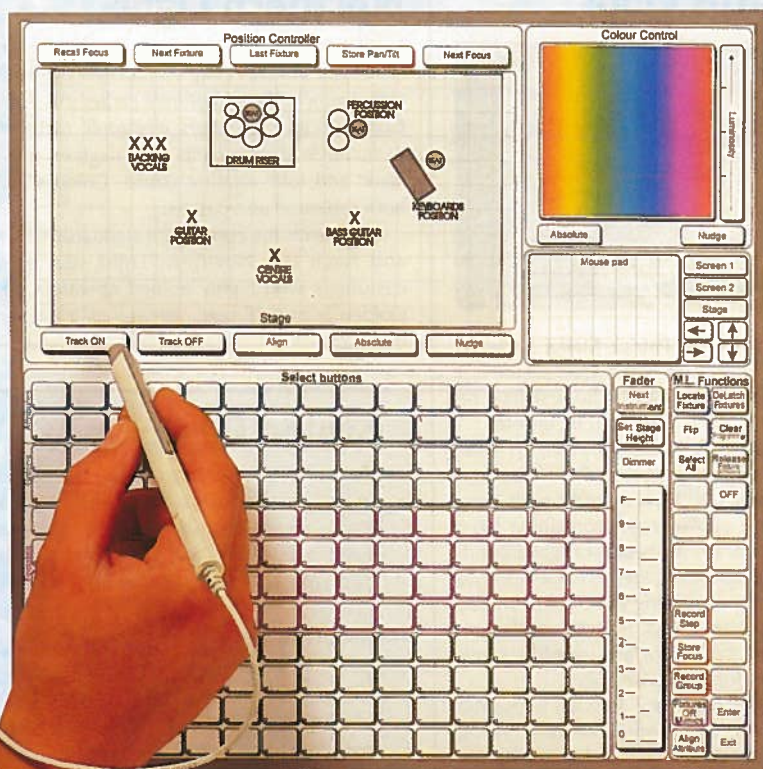
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The XY tracking allows you to move as many lights as you wish as one - representing huge time savings when it comes to preset focuses.

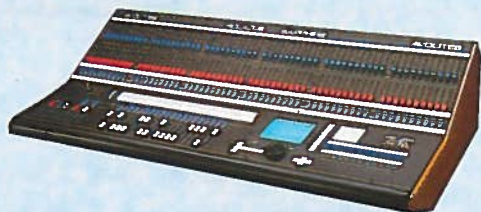
More importantly, you can now 'follow-spot' performers ...it has already been used successfully to track ice skaters, and it's only a question of time before this function becomes a commonplace 'live' requirement in all types of performance.

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.

Massive amounts of time can also be saved in colour mixing. Virtually all moving lights offer colour mixing that is powerful but extremely difficult to manipulate manually. However with the 4D tablet you can build up a complete palette of colours, within minutes, without having to touch a wheel.

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## Musical Treasure Trove

Sensible Music has been hard at work in the Ukraine running the Komora chain of shops, which have grown out of a joint venture between Jeff Allen, managing director of Sensible Music, and former Ukrainian musician Oleh Repetsky (now general manager of Komora). The first outlet was opened in Kiev in 1992 as a pro audio MI shop with a recording studio. Since then, the venture has expanded to a total of five shops.

The company has now started to look further afield to other CIS states and has also organised an exhibition. The International Music Fair, held in 'The House of Ukraine' in Kiev, was attended by a number of well known manufacturers.

Komora has become so successful that it can now boast some of the leading organisations in Ukraine and surrounding countries as its customers, including Radio-Glas (Odessa), the National Opera, Kiev conservatory, Kiev Municipal Orchestra, the National Symphonic Orchestra and state TV and radio. Plans are underway to open a further outlet in the Ukraine and to make the Music Fair an annual event.

## CSI take on Effects Co

As from January 1st, all Effects Company products will be marketed through CSI in France. Daniel Giroud, director of CSI told L+S: "We have been talking to The Effects Company for some time and are delighted to finalise this exclusive arrangement. The company's products have a good reputation in France but until now have been under-represented. We shall be promoting the complete range heavily throughout Europe."

## Avolites Maintain The Status Quo!



Despite the fact that LD Patrick Marks (pictured above left) has worked for Status Quo for the last seven years, the current tour is the first time he has specified an Avolites Diamond II console.

The rig consists of 24 VL5s, 18 VL6s, 10 4-lite Moles with colour changers, a myriad of Pars and ACLs and plenty of UV. Three moving pods hang in the roof-space above stage, containing large mirrors inside for bouncing beams of light around. Upstage of the backline are five Genie-style towers with frames containing VL5s. These imbibe the stage with a classic rock 'n' roll 'roadhouse' look. Strobes are built into false amplifiers and backline cabinets for a surprise effect.

Once Patrick had made the decision to use the Diamond II, he programmed the desk using WYSIWYG software to simulate his lighting rig. He anticipated that it might take the five days to learn the console, but it actually took less than a day. Consequently, he came away at the end of that period with the core of the show programmed before production rehearsals.

## No Limits for Northern Light

Northern Light now boasts Scotland's largest rental stock of Clay Paky's brand new Golden Scan HPE. Launched at SIB, Rimini earlier this year, the Golden Scan HPE offers electronic focus and a wider angle standard lens of 23 degrees, plus four static and four rotating gobos. Colours include both saturated and pastels.

In line with the company's standards of service and back up, Northern Light can provide customers with highly trained operators for the Golden Scan HPE units, as well as a full service back-up.

## Stolen Equipment

The following equipment was stolen recently in the Maldon/Heybridge area of Essex: two C-Audio ST600 amplifiers, serial numbers CA5179, CA5180, four ElectroVoice SX200 speakers, serial numbers 950881710, 956821678, 950821869 and 950821871, four Concept custom bass packs, a Rane AC22 crossover unit, serial number 070000. A quantity of lighting equipment, stands, cables and cases was also taken.

Would anybody with any information about this equipment contact PC 1736 Dean at Maldon police station, telephone (01621) 852255.

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## SIEL Expansion

SIEL 96 (the 14th International Trade Show of Equipment and Technology for Entertainment and Leisure Venues) and the 11th Theatrical Services Exhibition will take place in Paris at the Exhibition Centre, Porte de Versailles, from 11-14 February 1996.

SIEL and the Theatrical Services Exhibition expect to welcome over 300 exhibitors who will be showcasing their latest equipment and services for the entertainment and leisure industries. The show, which attracted 27,000 visitors in 1995, now intends to reinforce its role as a focal point at which people can meet, establish contacts and exchange ideas and information.

In addition to the three existing sections - theatre and the performing arts, professional sound equipment and discotheque equipment - this year's show will feature two new sections to cater for developing market trends: a security section, including services such as fire prevention, video surveillance, alarm systems, access control, and security personnel, and an audio-visual section, presenting the latest equipment for the entertainment industry: video projectors, giant screens, video discs readers, film and slide projectors, projection screens, audio-visual receiving and broadcasting equipment.

In addition, there will also be a performing arts exchange for artistes and companies to promote their shows to potential buyers, and a cycle of round tables and conferences on topics linked to new trends and regulations within the industry, for which the agenda is currently being prepared.

To obtain further information on SIEL 96 contact Aube Jeanbart at OIP-SHOWAY in Paris, telephone 33-1 45 22 35 40.

## Fostex Roadshow



SCV London's recent UK sales and marketing campaign promoting the new Fostex DMT-8 digital multitracker offered dealers nationwide the opportunity to be the first to see the DMT-8 in action. Armed with a 54" TV, a truck-load of AV, sound and support equipment and six crew members, SCV London headed off to the Spittal O'Glenshee in Perthshire, Scotland, and proceeded to enjoy a hectic, but fruitful six-day tour which finished in Guildford, Surrey.

The mid-week venue was the Earl of Bradford's residence, Weston Park House in Telford, Shropshire. Here, dealers were invited to sit in on an AV-assisted presentation by SCV's Robert Morgan-Males, following which, UK product manager Mark Perrins, together with session guitarist Geoff Beauchamp, provided a live interactive demonstration of the DMT-8 in use.

At the end of the week, the company reported that tour targets had been practically doubled, giving the Fostex DMT-8 a leading position in the evolving digital multitracker market. To date, the DMT-8 is continuing to arrive in large shipments to supply outstretched demand.

## NJD Copyright Dispute

Following NJD's recent success against 'Beglec NVSA' of Belgium, for the illegal use of NJD photographs, NJD has now received payment from a Mr R Grodzik, of Bradford for another 'breach of copyright' dispute.

Mr Grodzik wrote an article in the June 95 edition of Electronics Today International magazine, which contained a circuit belonging to and being the copyright of NJD. An apology was published in the magazine's December issue.

Kevin Hopcroft, MD of NJD, told L+S: "We are now considering action against two companies who have copied lighting products. We accept that most companies bring out their own versions of popular lines, and no one really objects, provided the version is different enough to be regarded as an alternative approach. However, we will not tolerate direct copies with just cosmetic changes and will fight to keep what is rightfully ours!"

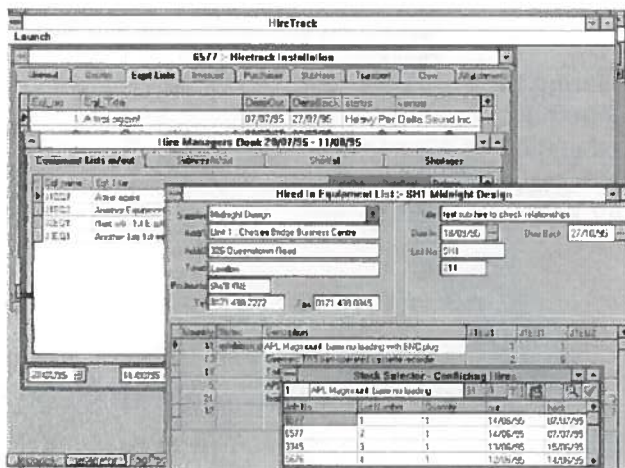
## Quested Buy-Out

The Harman Pro Group has announced that it has divested itself of Quested. Steve Revill, formerly managing director of the Edge Group, has successfully negotiated a management buy-out of Quested, best known for its range of high quality studio monitors.

Based in the UK, Quested joined the Harman Group in September 1993 as part of the acquisition of the AKG Group, which included the Edgetech Group of companies, Turbosound, BSS and PDL.

# Hire Track

## Hire Software



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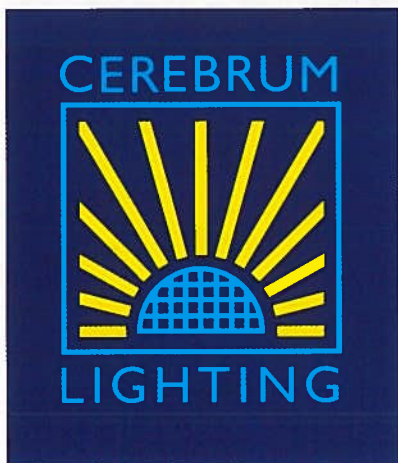
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**Maltese Multi-Media**

A unique digital multi-lingual tracking system, which enables the story of Gozo - a delightful Maltese island - to be told in eight different languages simultaneously, has been completed by Sarner International Limited.

Sarner was responsible for designing and installing what is believed to be the most advanced system of its kind in Europe. The attraction is designed over 17 individual rooms through which visitors make their way. As the visitors enter, each room comes to life with pre-recorded sound and light programmes. On completion, the room returns to a state of suspended animation, awaiting the arrival of the next group of visitors, when the process is repeated.

The audio for each room is available in eight different languages, and the technology used enables each group to be tracked in such a way that the appropriate language is transmitted wherever that group goes next. Therefore, up to eight groups of differing language can enjoy the programme at any one time.

The technology used incorporates a touch screen which controls the system and also identifies the location of each group. In addition, high quality multi-channel digital audio replay is used, holding several hours of storage on re-recordable PCMA drives. The system features a high degree of flexibility and is fully re-programmable on-site.

The system currently has 17 minutes of audio storage time for each of its eight channels, which can easily be upgraded to 55 minutes per channel by increasing the size of the PCMA drives. This also means that additional languages can be added as they are required, whereas earlier systems could not be upgraded. Furthermore, the lighting, projection and other effects are all automatically controlled by the system to split-second accuracy.

**Curtains for Saigon**

White Light has supplied a state-of-the-art set of new digital light curtains to the hit musical Miss Saigon at London's Theatre Royal Drury Lane.

The digital light curtains with their integral colour scroller and motor were developed by DHA Lighting for the New York production of Miss Saigon after using more traditional light curtains with scrollers for the original London production.

The DLCs are controlled by Light Talk software, run on a Macintosh computer. This software offers full control over the DLCs with a tilt resolution of 0.1 degree and completely independent timings. The Macintosh is then triggered by a DMX channel from the in-house Galaxy desk.

The purchase of these 20 units, along with 10 units for next year's production of Tommy and the tour of Copacabana, means that White Light now owns 45 DHA digital light curtains.

**Safety First**

A group of individuals from organisations actively involved with safety in the entertainment industry (e.g. ABTT, AETTI, PLASA, NEC and RSC) met recently to address the issues of national representation, harmonisation of standards and dissemination of information on safety matters, all of which have been causing concern for some time.

The meeting agreed that there was a need to establish a national body, to be called the National Entertainment Safety Association (NESA), whose objectives are set out below. Consequently, a working party has been set up to progress this initiative without delay.

The immediate aim of NESA is to publish a directory of those organisations and individuals who are involved in, or have an interest in, safety and health in the industry, so that an effective central communications base may be established.

It is also intended to produce a newsletter of informed guidance and a diary of events (seminars, exhibitions and training courses) on safety matters and to which contributions on topics of interest may be made.

Organisations/individuals are requested to send full details of contact names, addresses, tel/fax/internet numbers and any further information for either the directory or newsletter to L+SI as soon as possible.

This is a unique opportunity to establish a lead body on safety and health in the entertainment industry and all interested parties are encouraged to make a contribution to this initiative.

**AIMS**

*To use all practicable means to promote a safe and healthy environment in all types of entertainment premises and at live performance events in the UK*

*To involve all organisations active in the entertainment industry in that process*

*To provide a medium to inform all those working in the industry of relevant issues and legal responsibilities*

*To provide informed guidance on specific issues, in consultation with the HSE*

*To provide a platform from which to lobby government departments and statutory bodies*

*To create an open association to which employers' organisation, trades unions, national and local government, statutory bodies, professional and trade associations can affiliate and contribute without restriction*

*To confirm the support of the Department of National Heritage, Arts Council, Health & Safety Executive, Association of Metropolitan Authorities, Association of District Councils and other relevant bodies*

*To ensure that all activities are covered either by the most appropriate member organisations or targeted working groups from relevant organisations*

*To publish a directory to enable member organisations and individuals to readily access information relevant to their activities*

*To issue a regular, informed, professionally produced newsletter, which organisations may acquire at cost and distribute to their members*

*To promote the publication of guidance on general health & safety management and may acquire at cost and distribute to their members*

*To liaise with international bodies to develop international conformity*

## Luck of the Irish

Lighting Design Associates in Dublin are enjoying a busy period according to manager director Andrew Leonard. He has recently finished the Ford Fiesta launch, and the lighting of a Visitor Centre at Aras an Uachtarain, home of Irish president Mary Robinson. The New Year will see the company involved in further projects, including the opening of the Music Centre in Temple Bar, the AIB Better Ireland Awards on RTE and the touring design of Brendan O'Carroll's 'The Course'.

## LLM LD Forum



Just under 50 lighting designers and technicians from all over Norway assembled in Oslo in November for the third LysLandsMotet (LLM).

LLM originated as a forum where lighting designers from could get together to discuss issues on union membership, employers, etc. In time, it became a meeting point for anyone working with professional lighting.

The LLM provides a facility for lectures, courses and discussions, and DMX was the key issue of the recent conference. Under the title 'DMX: advantages and disadvantages/transition to the Ethernet future', panellists Peter Ed (Strand Lighting), Yngve Sanbo (AVAB) and Jarle Henriksen (Compulite) led the session.

The conference included a site visit to NRK (Norway's Broadcast Company) where, in addition to studio and control room tours, discussions were held on the art of television lighting and an evaluation of CAD drawing programmes was offered by NRK.

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## MTV Awards

Despite the impression of being 'loose' and 'out of control' so often conveyed by pop industry awards shows, they are usually extremely well thought out and expertly co-ordinated. The MTV Europe Awards is certainly one such event.

Eight bands performed during the two hours of the show, each with their own back line and a completely different stage set. When you consider the restrictions of the venue, this was no mean achievement. The Zenith, in Paris, is no theatre: it has no fly bars, and no revolving stage to facilitate quick changes. To compound this further, all of stage left was devoted to the monitors of Clair Brothers' feedback supreme Ed Dracule.

No less than six Ramsa 840 consoles, with all their attendant graphics and compressors, filled an area the size of the main stage itself whilst there were three Yamaha PM 4000s FOH. It was no surprise then that production manager, Steve Iredale, took a more certain route for set-change stage hands, by bringing in 24 Stage Miracles from London. His decision was vindicated during dress rehearsals when a couple of the local hands - added into the team for a touch of diplomacy - managed to knock over most of Richie Sambora's guitar stack.

The stage set itself was enormous, spanning the full width of this arena-type venue. The main stage was dressed proscenium-style some 12 metres across, and the wings were of similar width. Designed by Michael Minas, each of the three areas - main stage and wings - played distinct roles. To the left was the podium area where winners would receive their prizes and embarrass themselves with unrehearsed acceptance drivel.

This area was backed by a huge wall, pierced by hundreds of stars, and with a crescent moon cut through its surface, between podium and stage, a 3 x 3 Digiwall video screen relayed the 'clips' of the nominees. The stage right wing was dominated by a bigger Digiwall (4 x 4) set high in a mirrored frame, while beneath it, a small cliff of chiffon scarves provided a suitably gauche backdrop for the cross-dressing, but resolutely masculine Jean Paul Gaultier, compère sans pareil.

When band change-overs took place, an Austrian drape (from Arrow Rigging and painted beautifully by Dave Perry in a Harlequin pattern), completely masked the main stage. For the television viewer, a wide shot of the whole thing was rare and, on anything less than a 27" tube, indistinguishable. As this was first and foremost a TV show, this mattered not one iota, but for the 5,000 or so in the live audience, the whole set appeared pleasing and well integrated.

A well-deserved pat on the back is also due to Scena, who built the set at incredibly short notice, to John Cadbury, for taking the set co-ordinating role and doing just that, and to Mark Armstrong and his team of riggers, who, in just three days, figured out how to - and then did - hang the whole thing.

On the subject of rigging, both the set and the lighting was hung from truss and motors supplied by LSD (lighting contractor for the show) - one and a half articulated lorry loads to



MTV Europe Awards: the distinctive set designed by Michael Minas.

*"LD Allen Branton's team was assembled for one element - the ability to think on their feet."*

be imprecise - plus additional motors and truss from Paris-based SORI (SOCIET Rigging), operated by Nigel Gibbons. With such a large set, lighting was by

necessity equally huge: most of the 200-odd Vari\*Lites (100VL5s plus a mix of VL4s and 6s) were squeezed in over and around the stage, as were the 50 LSD Icons.

Designer Allen Branton still found room for some conventionals amongst this automated arsenal, 20 six-lamp bars of Par 64s and 10 eight-lamp sets of ACLs, liberally sprinkled around the auditorium. The mixed 14-person lighting crew was captained by LSD's Michael O'Connor. I single him out as he took the decision at fit-up to put the all dimming and mains distribution systems up on the house catwalks above stage. A severe pain in the arse for the crew - dirty, dark and awkward, as well as hot as hell - but having all the cable runs going up to the roof instead of running down to the stage freed up a very busy stage area.

Allen directed his show from the vision control truck, and has a team of two operators to enable him to do this. Tom Beck, who operated audience lights and called spots (five truss-mounted Lycians and six 2kW Troupers in the house), worked from a Celco 90-way, while Harry Sangmeister coped expertly with both the Artisan and Icon consoles.

Allen's team was assembled for one element - the ability to think on their feet - as became clear when Harry explained their MO: "Although we know the basic set design some weeks in advance and produce a basic plot, much of the lamp positioning is determined on site."


This was especially true for much of the audience light and especially for the effects lighting on and through the set. The main stage, for example, had a solid rear wall, with many narrow horizontal rectangular slits cut through it. Lighting from behind utilised not only a number of different sources, but the lamps themselves were rigged at several different heights to vary the exit beam angle as it passed through the slit. A variety of scenic backcloths used at various times to overlay the back wall meant that no one set look was ever repeated and neither were the lighting effects used with it. Added to this, there is the human-reaction element: "I programme right up to showtime, and if we think of something during the show I'll add it in live on air," explained Harry.

As you can gather, planning and preparation is there but, a lot of it is, by necessity, done at the last minute. And the winner is . . . **Steve Moles**

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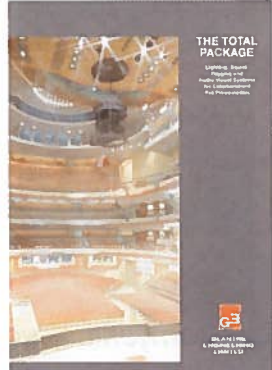
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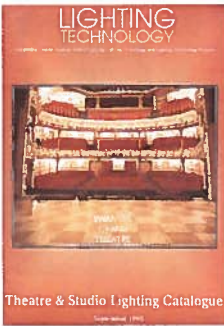
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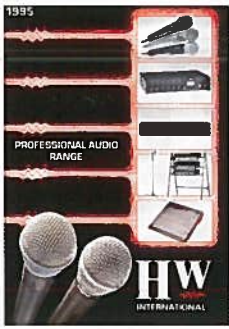
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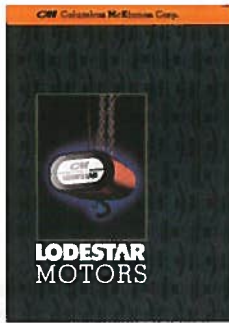
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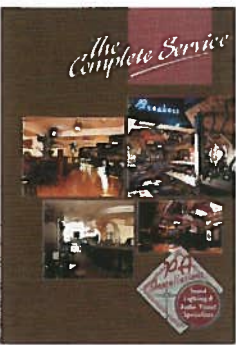
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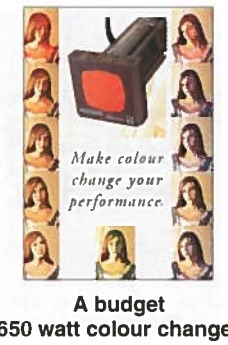
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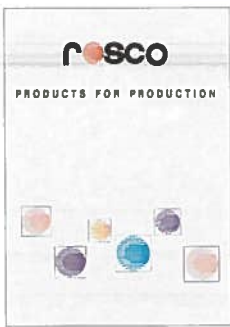
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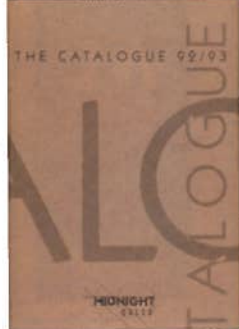
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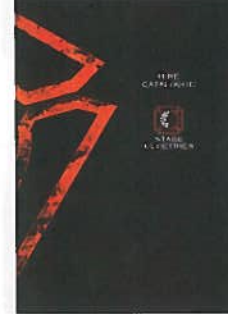
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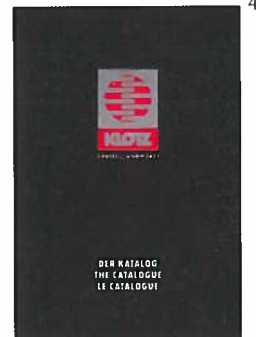
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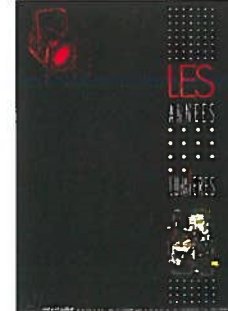
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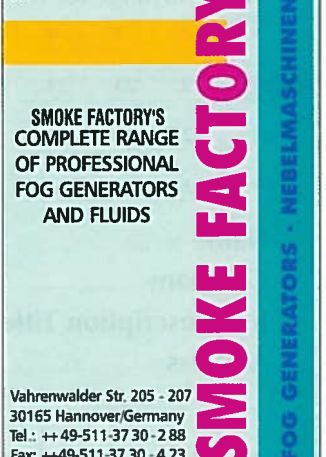
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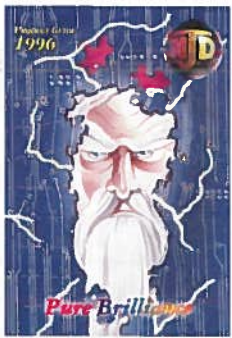
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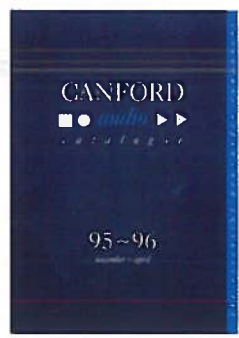
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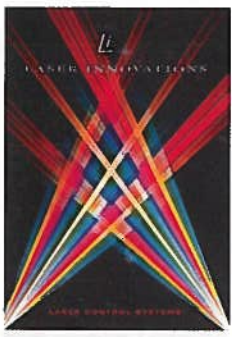
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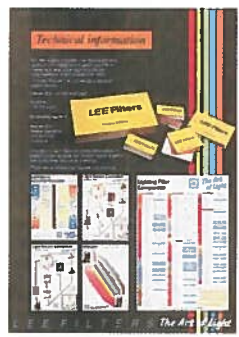
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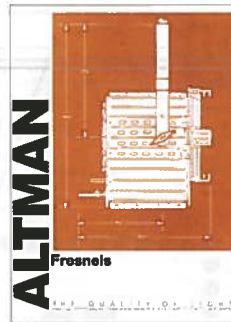
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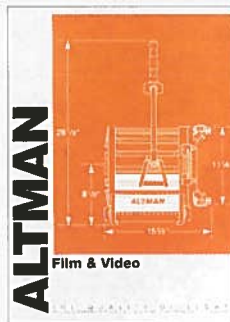
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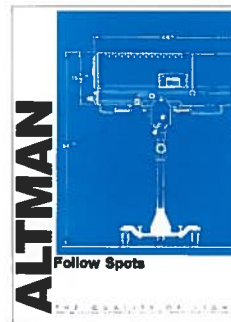
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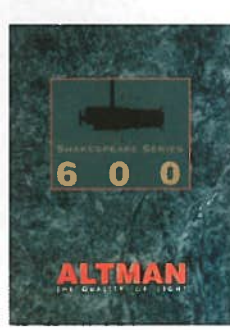
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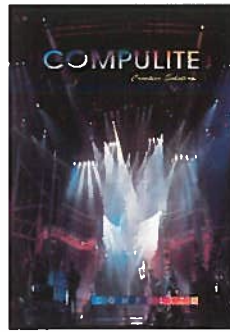
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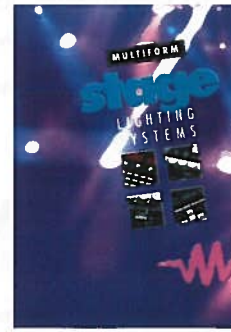
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# WEIRD AND WONDERFUL

*Circus as you've never seen it before. Rob Halliday reviews the technical feats that make Cirque du Soleil a truly innovative and imaginative night out*

I don't think I'd ever heard Editor John Offord get excited before. Interested, yes. Keen and enthusiastic, certainly. But never, before that phone call, out-and-out uncontrollably excited. "Cirque du Soleil. Brilliant. Coming to London. Have to cover them," tumbled out, with a few more superlatives thrown in for good measure.

Cirque du who? Bear in mind that this was two months ago, before the company's sensational appearance on the Royal Variety Performance. And before the press and advertising blitz that has accompanied their arrival at London's Royal Albert Hall. Feelers put out amongst friends and colleagues confirmed the company's existence, but singularly failed to provide any description of what they did. Even the company's press advertising singularly failed to describe what they are all about, relying instead on celebrity superlatives: "a wonderful experience" (Bill Clinton), "a thrill for every age" (Steven Spielberg), "reinvented my imagination" (Harrison Ford).

The biggest clue is, of course, in the title. Cirque . . . circus, maybe. The other clue the title seems to give, that the company are French, is less accurate. They actually hail from the other side of the Atlantic, from Quebec in Canada. And though these days they play across a truly international stage, their origins were small - a collection of street entertainers, stilt-walkers, fire-eaters and mime artistes. That collection was somehow pulled together into a loose-knit organisation called Cirque du Soleil by Guy Laliberté in 1984, thanks to inspired funding from the Quebec government, of a kind unimaginable by any arts group in this country, let alone one so far from 'mainstream' theatre. This enabled the fledgeling troupe to feature as part of the celebration of 450 years since the country's discovery. Bolstered by that initial



success, and with further government funding, the company launched an 11-city tour of Quebec under an 800-seat Big Top. The seating capacity grew to 1,500 as the tour expanded, firstly to cover the rest of Canada, then southwards into America. Company legend now has it that the US leg became a matter of 'to live or die in LA', without enough money to fuel their trucks for a return journey to Canada if they failed. Capacity crowds ensured that they didn't, and subsequent tours covered more of the US, Europe and Japan.

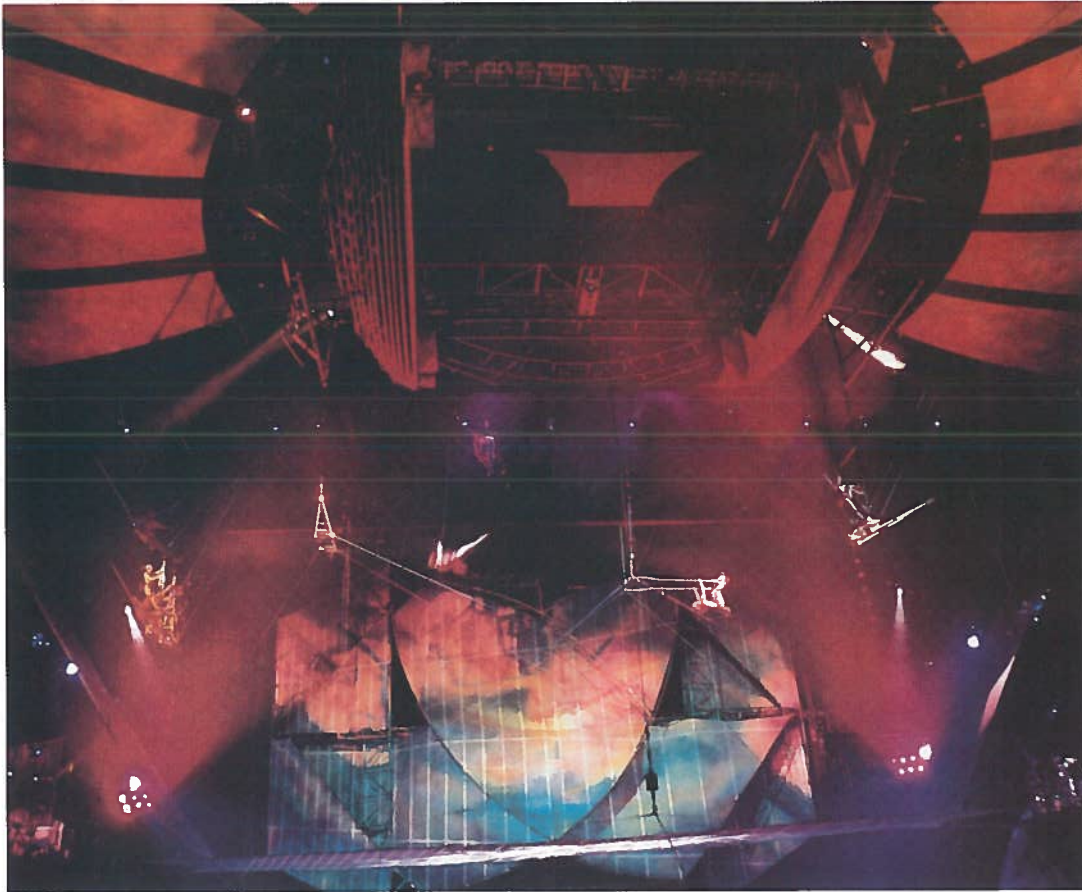
Which still doesn't actually explain what the company do. Well, yes, it is circus - but circus as you've never seen it before. The first thing to forget from the traditional British perception of circus are the animals - Cirque has none. Then forget the draughty, smelly, saw-dust strewn performance ring, and the seemingly random collection of acts. Cirque du Soleil's approach is to take the finest of traditional human acts - jugglers, high-wire acts, trapeze acts, even clowns - and blend them together into a whole, linked 'performance'. While their shows are, to some extent, still just a collection of different performances, those performances are taken beyond what you might find in 'traditional'

circus by ensuring that the performers are not all just circus people: Cirque staff scout the world looking for circus acts, dancers, street performers, gymnasts (some Olympic veterans), and other entertainers who might fit the Cirque style and bring them into Cirque shows. There is also an attempt to give the evening an overall theme to bind the acts together. What really separates Cirque du Soleil from traditional circus, though, is the technical team: the designers of costume, set, lighting and sound. Dominique Lemieux's costumes are usually the first thing people notice about the company, since they often feature in promotional material and photographs. Trained at National Theatre School of Canada and Montreal's Concordia University, Lemieux has now created the weird and wonderful inhabitants for four Cirque shows - Nouvelle Expérience, Saltimbanco, Mystère and Algeria. The characters range from giant, playful babies with enormous nappies to bungee jumpers in feathers, looking like abstract birds as they soar through the air, to bestilted devil-incarnates, to mysterious pole-climbers with backwards facing heads. Her work is an inspired mix of traditional circus, science-fiction, and fantasy. It is completely unique, and is the basis of Cirque's style - to the extent that it is probably more important than the set designs.

For Algeria, Mystère and Saltimbanco, the set designs have been the work of Michel Crête. The shows feature abstract floor paintings, Saltimbanco's being much, much brighter and more colourful as befits the show's style, which is closer to a raucous straight circus than the more abstract Mystère. Both shows also feature background structures - a huge twisting, turning metallic 'sky' in the Vegas show, and a sculpture of circular glass panels in Saltimbanco. Both shows have a strong synergy



**Saltimbanco: bright gaudy colours and costumes that immediately say vaudeville have arrived in all their glory at London's Royal Albert Hall.**



Above and below: *Mystère*, inspired by Homer's *Odyssey*, is a mix of traditional circus, science-fiction, and fantasy.

between set and costume colourings - in Saltimbanco, this allows characters to almost become camouflaged on the floor at times. But the set designer's work is to some extent limited by the need to leave the space open for the aerial acts.

Neither costume nor set would really work without the two elements of 'glue' that bind Cirque performances together - the lighting and the sound. The lighting design is in the hands of Luc Lafortune, who has been working for Cirque since his graduation from theatre college and lighting their shows since 1986. Colleagues describe him as the 'best-kept secret in lighting', because the vast majority of his work has been for Cirque - and that work is outstanding. Yet his involvement with the company and, indeed, with lighting design, came about almost by accident. As he explains: "I studied to be a psychologist, then figured 'it's interesting, but I cannot tell these people how to live their lives if I'm not even sure how to live mine'". Instead, he enrolled on a theatre arts course, aiming to be a set designer. "I figured it was the last opportunity I would have to do something I really wanted to do. In the first year I met a guy who was also a first year student of set design. He was great - he designed complete environments whereas I just stuck to the script and made cardboard houses with doors and windows. It quickly became obvious that my career as a set designer wasn't meant to be - although I had the desire, I didn't have the instinct that was needed."

Instead, Lafortune became assistant to the electrician on a college production of Brecht's *Threepenny Opera*. His role on the show was to be the telephone patch boy, re-patching dimmers during the show, but "I quickly realised how lighting could influence perception - that you weren't just illuminating,



but determining how people see. And that's when I really got into lighting."

Gilles Ste-Croix, now one of Cirque's directors, was also a student at the college. Lafortune explains that even then the ideas behind Cirque were being formed, with their emphasis on design and theatrical-style presentation coming from the theatre-based background of the people involved. "Gilles knew that they were going to start this thing up and they didn't have any expertise, so he figured he'd go to university and learn." The company was formed the year Lafortune left and, by chance, he ended up working with them. "I applied for jobs - but four years at university didn't really look much on a resumé. The only reply I got was from Cirque du Soleil!"

He spent a year on the road as Cirque's lighting technician, then a year as board operator serving the independent lighting designers the company was using. Eventually, "I said to them you're not going to find anyone

able to light circus in Montreal because we don't have a circus tradition like Europe - so why not let me try!"

In the years since, Lafortune's palette of equipment has moved from his original 48 rented Parcans to the thousand-plus dimmer rig currently lighting *Mystère*, the permanent show the company now have at the Treasure Island hotel in Las Vegas. His approach to the task has also evolved - as I explained earlier he has been lighting shows for the company since 1986, but ask him when he started being their lighting designer and the reply is a quick "two years ago" followed by a laugh. "That is when I started understanding the essence of light, the idea that it is supporting the action and influencing the perception of the spectators."

But even with a clear understanding of what lighting can achieve, lighting for a Cirque show is difficult, especially because of the way the company create and rehearse their shows. Lafortune, for example, has the rare privilege among lighting designers, of being involved from the moment a show is first discussed. At that point, the creative team are trying to find a common 'theme' for the show -

*Mystère*, for example, was originally inspired by Homer's *Odyssey*. The aim is not to find something that the production will adhere to rigidly, but rather to find a common 'link' for all of the artistes to work with.

In the case of lighting, the theme is there to ensure that Lafortune is thinking along the same lines as his fellow designers when he has to create images quickly - since, despite the long gestation periods for shows, the way they are created means that the lighting team still often find themselves racing against the clock. "Although I'm involved from the early stage, the show will still be a work in progress by the time we get inside the tent or theatre. And the moment you get into the house, things happen. People go out on stage and all of a sudden you find that your original intention for the show has taken a new direction, and you have to be able to follow that."

That requirement for freedom, and so versatility, combined with the long lead-times required by commercial projects such as those in Vegas, where the theatre was created with Cirque in mind, means that the initial lighting design will not be all that precise. For *Mystère*, he "played safe - a back wash with colour changers, a front-of-house wash, side wash, maybe three or four gobo washes and then specials just about anywhere that we could hang an instrument, so that the moment we needed something it was there." The versatility of his rigs has been increased by his use of moving mirror lights. *Mystère* originally used Clay Paky SuperScans, and added five SuperScan Zooms during the dark period during Vegas' pre-Christmas quiet spell.

Lafortune has to be able to have a rig which can be adapted quickly in this way, because the performances he is lighting are dynamic - while you can ask an actor to stand still while you focus a special on them, asking a bungee cord performer to pause in mid-flight is harder. The nature of the acts also impose other challenges



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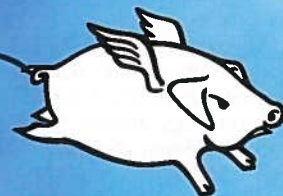
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Cirque du Soleil's tented encampment.

on the designer - from a creative point of view he is having to deal with huge amounts of space, in three dimensions rather than just at floor level. And from a practical point of view, he has to consider the artistes's safety. "Sometimes we can't achieve everything we want because it affects the performers - a particular light might be causing a shadow which means that they can't see a bar properly. You can't understand that unless you get up in the air and look at it from their perspective." Which isn't to say he's averse to trying. "Many of our performers don't come from theatre backgrounds and so don't understand what lighting can do, so I'll bring them into the house to show them what we're trying to do."

The remarkable thing is that, despite these 'limitations', Lafortune manages to create work of incredible beauty that has established a house 'style' for Cirque, though he dismisses suggestions that he has an identifiable style. He claims to prefer the options provided by different angles of light, rather than just relying on colour, since he is wary of colour because of the different reactions it can provoke. *Mystère* technical director Don Maclean does qualify this by saying that he is expecting a Lafortune Blue from Rosco any time now, and certainly Lafortune's work shows him to be a true master at mixing and blending colours, often using unusual combinations to stunning effect. In fact, there only seem to be two things he doesn't like: pre-rigged Par bars ("they are just for convenience. Lighting is not about convenience"), and standing still as a designer. "When we put the new routines into *Mystère* in December, it was two years since I first lit the show and my style has changed. The lighting for the new acts is in a different style and they stand out to me. Maybe the audience doesn't notice, but I do." When his schedule permits, he will make a return visit to Vegas to attend to this problem.

While creating his designs, Lafortune likes to work closely with his team, and to make sure that they are as much a part of the final show as the on-stage artistes. Shows are re-lit on the road by lighting directors chosen because of their care for the show. And they are run by board and followspot operators who take their own cues from the performers and musicians and run them manually, rather than relying on a show caller and a 'go' button.

But the designs are still clearly his, and are remarkable. They show that Lafortune really is the best kept secret in lighting, perhaps because Cirque without him would be a poorer Cirque. But the secret surely cannot be kept for long. Not that there would be any shortage of people wanting to try to step into his shoes.

Technical people who see Cirque shows always then seem to want to work for them. And for a few lucky individuals, that dream comes true. One of those is sound designer Jonathan Deans. Ex-Autograph, Deans found himself in Vegas working on the Siegfried & Roy show at the Mirage Hotel, following his contribution to the seminal musical *Time* in London. While in the States he found himself talking to some people with jackets proclaiming 'Cirque Something'. At first he wasn't greatly interested. "We got on the same plane and they said where do you live? I said LA, and they said 'we have a Cirque in LA down in a tent' and I thought great, a tent," he explains in his mock-sarcastic tone. But Deans went and saw the show, *Nouvelle Experience*, and "sweated in my palms, thinking 'how much do I have to pay them to be part of this'.

"Afterwards they said 'did you like it' and I said 'yeah', trying to be cool." More discussions followed, resulting in Deans being taken on-board to design the first production of *Saltimbanco*, the show which the company have brought to the Royal Albert Hall in London where it is designed by François Bergeron, whose background ranges from musicals such as *Dreamgirls* to permanent installations like *Niketown* in New York and who also served as Deans' associate on the epic *EFX* at Las Vegas' MGM Grand hotel. "Cirque are now doing a lot of shows, and the division seems to have become that I do the more permanent shows while François gets the tent, which is great fun." Fun isn't the first word Bergeron uses to describe the tent, where he is "always having to fight against plastic, canvas and a metal floor," but he says it with affection, and enjoys the open sound produced that seems to wrap-around the spectators.

The contribution of Cirque's sound designers is as deep as those of their lighting designers. The sound designers work through the long creative period, an approach that Deans describes as "an amazing way to work - hard for everyone, but an incredible imagination drive.

You just create things as you go along. When you put a new production together, everyone throws things in - you can be in a situation where you're doing that with an audience, trying something that might crash and burn or might be successful. It's a great learning experience." The role of the sound designers is to work with the composers and musicians to help shape the sound of the specially-written scores, and to specify and install the system that will let them bring that score across with a maximum of clarity and impact. The resulting system varies from show to show, since the designers prefer to design to what they need rather than around specific equipment.

Aside from musical clarity, the most obvious part of Cirque's sound style is their fascination with changing the position of sound and moving it around the performance space. With the performers moving around so quickly, Deans feels that the sound has to move with them. "There used to be a sequence in the show with people juggling triangular hoops. We had the sound running up and down the speakers in the sky - not so that anyone would necessarily notice, but just to add some dynamic to the sound."

Early Cirque shows attempted these effects manually, but Deans' constant experimentation with moving sound around on other productions, and his dissatisfaction with available solutions, eventually led him to team up with Steve Ellison to produce products to provide the control they needed - and so form Level Control Systems. *Mystère* features the current analogue LCS system which has 16 inputs, 8 buss outputs and an 8 x 4 matrix controlled by an Apple Macintosh. This allows the operator to draw a 'route' for the sound around a speaker system, then leave it to the computer and its accompanying desk to figure out how to make the sound follow that route. It is put to great use in the show for whipping drum and wind sounds around the audience, as well as for more subtle shifts which help focus attention to particular areas of the stage.

Deans is already looking forward to his company's new digital system, which will also be able to handle EQ'ing and delays internally, allowing these parameters to be easily controlled and altered as well. "The idea is that it is a tool which doesn't limit you - you can lay the palette out exactly how you want, rather than being something like EQ that you just plug in and make work." The problem that he is now running up against is in controlling all of these parameters, and he admits that he has been looking at how others tackle the problem. Deans is a man with irons in many fires, yet even this self-confessed workaholic clearly feels a special attachment to Cirque, enjoying coming back to see the shows and feeling refreshed when working to introduce new acts into existing shows.

Of course, designers never work in isolation and the designers involved with Cirque du Soleil are no exception. Detractors - usually those cynics who haven't allowed themselves to enjoy a Cirque show - call the company a 'corporate circus' and, from a business point of view, they're right. The start provided by public money has created a self-funding company with a C\$50million budget. The press hand-outs boast that they employ 600 people on three continents, and that 110 people tour with *Saltimbanco* alone - of which just 45 are performing artistes. The rest include six cooks, a teacher and a physiotherapist.

The reason is simply that Cirque has chosen to do as much as possible in-house. Part of this decision is a matter of economic sense, which

says that rather than paying outside contractors to build scenery for their shows it would be more sensible to create their own scenic workshops. The same is true for the costumes: a workshop in Canada creates most of them, though some, notably those for *Mystère*, are now being made (and re-made; some of the acts can get through 12 sets of a costume per year) by teams employed locally. The extra finance that these workshops can bring in during the brief periods that they're not working on Cirque shows is also welcome now that the company is self-financing, rather than dependent on government subsidy - though the Canadian and Quebec governments remain inordinately proud of their offspring, judging from their notes in the company's programmes.

More important than money is trust - something that is vital when the final product involves people performing all kinds of stunts using custom equipment or ropes attached to truss. As Don Maclean, technical director for *Mystère* in Las Vegas notes: "Trust is extremely important, and knowing the kind of people you're working with and counting on, goes a long way." For that reason, all of the rigging for Cirque shows is carried out by an in-house team of 'artistic riggers', who work with the performers throughout the creative period and once the show is open or on tour.

The actual performances usually involve a delicate mixture of the stage crew and other performers: the company's legendary bungee acts, for example, require the trapeze from which the performers launch themselves to be cleared up and down with pin-point timing. For this kind of operation, other performers are used. "For each artiste that you see, there is another artiste that you don't see operating the trapeze - really they are pairs that work as one," Maclean explains.

Which isn't to say that the technical crew aren't fully involved in the creation of the show: with the show created as a whole, Maclean's practical side notes that "production for Cirque is extremely intense and expensive in time, money and energy. When you make a call for a working rehearsal, you don't just call the artistes, you call all the musicians, all the tech staff - it's a full show crew from day one." The result is that the crew are much more involved and committed to the show than is sometimes the case - in the two-and-a-half years since the Las Vegas show opened, only four people out of a technical staff of 55 have left.

## THE SHOWS AND VENUES

### ALGERIA

Though there are three Cirque du Soleil shows currently in existence, *Mystère's* residence in Las Vegas and Saltimbanco's visit to the Albert Hall means that only one show is currently maintaining the company's tradition and playing in a tent. That show, Algeria, is currently rounding off a North American tour, and will then spend the rest of 1996 in Japan. The show is once again designed by the tireless team of Michel Crête, Dominique Lemieux and Luc Lafortune, with the sound design by Guy Desrochers.

### MYSTÈRE - LAS VEGAS

Cirque du Soleil's first visit to Las Vegas initially appeared to be in their usual fleeting style, with a tent pitched outside the Mirage Hotel. But the tent remained for a year and Cirque became hot property, pursued by the many producers who make up the self-appointed entertainment capital of the world. For a while it looked as though a deal would be struck with the legendary Caesars Palace. But the eventual



Above, lighting designer Luc Lafortune and below, sound designer François Bergeron.

victor was Steve Wynn, the man credited with single-handedly reviving Vegas's fortunes when he opened Mirage, the hotel with the volcano on its front door. Wynn was building a new hotel, Treasure Island, and Cirque were booked as the hotel's headline act, with a 1,500-seat showroom theatre built especially for them.

Or so legend has it. And while the showroom now has many features of a Cirque tent, with seating curved around a wide, deeply thrust stage, and the show plays to an average capacity of over 99%, it is clear that the money men weren't always quite so confident: Don Maclean, technical director for the show, notes that the concrete slab beneath Cirque's seating is poured with a design for traditional Vegas banquet seating and the theatre could easily be converted back to a proscenium stage. Happily that hasn't been necessary, and the showroom is resplendent with Michel Crête's light-coloured roof, designed to invoke a tent both visually and acoustically. As Jonathan Deans explains: "From the word go, we were able to work with architects on the acoustics. There's a great thing that happens with the tent because the audience can all hear each other, so they respond to each other. Most Vegas showrooms overdo the acoustic for the speaker system, but the audience can't hear each other and it kills the show." Deans thus laboured to keep parts of the floor and certain walls hard, working with an acoustician to achieve the lively sound that is now a feature of the venue.

The Vegas showroom provides Cirque with more technological 'toys' than their other venues. The stage, for example, contains a main stage 36ft x 36ft lift and three forestage 10 ft x 36ft lifts included both from practicality for the hotel, and Cirque's desire to work with bringing acts up from below floor level - something not possible in a tent. Above the stage is a hydraulic flying system based around four 100hp motors that drive 21 line sets. There are also 14 additional winches tilting and moving the 'sky' scenic unit, dropping drums and climbing frames in and out, and opening and closing the sliding baffle roof structure to allow performers through. The automation is operated by a team of three - an operator in the control room, a 'dead man' monitoring the lifts, and a rover who can investigate problems and troubleshoot.

For lighting, the theatre has just under 1,000 ETC Sensor dimmers, and is pre-wired for another 500 should the need arise. The dimmers are used along with their

fault-diagnostic system, which proved useful during the summer. Maclean explains: "Because of all of the air-conditioning systems in town, the power company has large capacitor banks which kick-in to raise the incoming voltage. Our system is designed to run at 135v, through custom transformers, so that we can use the Sensor's voltage regulating function to maintain 110v output even at the end of a 400ft cable run. When the capacitor banks kicked-in this summer, we discovered that there had been an error in someone's calculations between the various transformers, and we were getting over 140v. Fortunately, the dimmers warned us before any permanent damage resulted." The dimmers drive a mixture of sources, including Par cans and Source 4s, and are controlled by a Colortran Compact Elite desk, which the lighting director Jeanette Farmer and assistant Tom Hanlon like for the

hands-on control it provides. The moving lights in the rig, Clay Paky SuperScans and SuperScan Zooms, are run from a Compulite Animator by Christian Choi while the 'manual' moving lights comprise four Lycian Starklites and two Xenon Super Trouper followspots. There are also four HMI Panis with film scrollers, supplied by Production Arts and operated from a PC by Kirk

Mortenson, for the projection sequences.

A second Colortran desk, this time an Encore XL, has a slightly more unusual role - controlling the seven liquid nitrogen low-smoke machines (three from Rope Landmark in Chicago, four from SFX in Texas), and the Rosco 1600 smoke machines and RealFX cracked-oil foggers, all of which have DMX converters or relay systems. The board was brought in mainly for the Nitrogen system, which gives the best effect when run full until the floor and air above it are cooled, then rotated to ensure that the best tank temperature is maintained while reducing nitrogen consumption. Cirque's twice-daily performances use around 300 gallons per day from an 11,000 gallon storage tank that is refilled about once a month - Maclean reckons that by this means the lighting desk paid for itself in just one year.

Lighting the show is remembered by Luc Lafortune as one of his greatest challenges, because of the combination of politics, long lead-times and a new environment involved. He arrived on August 20th, 1993, and didn't leave again until January 15th, 1994. The time between started as 72-hour weeks, and ended up as 108-hour weeks, "drinking way too much coffee!" As well as lighting, Lafortune also had to integrate projection into a show for the first time. After much searching, he stumbled across Canadian photographer Pierre Desjardins, who soon fell into sympathy with Cirque's visual mentality, producing abstract images by developing his work in unusual chemicals.

In terms of sound equipment, the company were provided with what Jonathan Deans describes as a 'flagship system'. Based around a 60-channel Midas XL3 desk, signals are taken from the live band and singers and Sennheiser radio microphones on some of the performers, and fed out through Lexicon 300 reverbs, Crown amplifiers and Electro-Voice Deltamax loudspeakers arranged as delayed front fills with a separate delay system firing from the rear of the auditorium. Extra speakers are fitted to the moving 'sky' scenery, mounted in custom-built brackets that allow the speakers to remain in the correct orientation as the sky





Another scene from *Mystère* at Las Vegas.

tilts and turns. Some small Apogee units are dotted around the front of the stage to pull the sound down from the very high flown speaker positions. A Ramsa desk and D&P 11s are used for the band's monitor mix, with every musician having their own mix. The design is completed with the Level Control Systems desk and Macintosh, which has the venue's complex speaker system mapped onto its screen, and so allows Deans, or operator Kim Sandholt, to quickly draw complex sound movement paths, used to great effect in the finale number as wind and instruments whip around the auditorium.

Elsewhere, the theatre offers many of the same problems found in theatres everywhere - inadequate storage space and lack of flexibility. But Maclean knows that it is just a "Chinese finger puzzle - where you can put it all together, but you just need to have everything in the right order". The difference between this show and the tent shows, though, is that most of those real people remain hidden; you are less aware of the mechanics of the acts, especially the aerial acts and the standing frames which can be raised from the basement rather than wheeled on; the result is a show that is less circus-like, but much more magical.

The set and costumes help this; the scenery is dark and brooding, especially when washed by 6k HMI Fresnels coloured deep blue. For much of the show the floor itself is invisible, covered by swathes of low-lying nitrogen fog that rise and fall as the performers soar above. Costumes take their inspiration from science fiction and fantasy - pole climbers with reversed heads, giant demons on stilts - but these are balanced by a human element in a giant baby who runs rampant throughout the show. The lighting demonstrates a mastery of colour, but also of the true 'art' of lighting - controlling where people look. Aside from costumes and theatrical performance style, the real difference between Cirque and conventional circus is the fluidity of the production. It doesn't stop. There is no ring-master boring you while the scene is changed; that role is filled by other artistes who, held in their light, distract you while a transformation happens. Suddenly there are six bungee jumpers hanging from the roof, or an angled trampoline has been set, and you have no idea how it got there. There is never just one

image - even if your eye falls away from the act in progress, Cirque ensure that you have something to look at.

Despite his fears about a clash of styles, Lafortune's work on the show is a triumph. He colours and controls the space magnificently, closing down to a tight, hard-edged circle for the two strong men, opening up with ripples on the roof, or making the whole space explode with strong backlight up through the smoke as the lifts drop down into the basement. The SuperScans are used both for big sweeps out into the audience as the performers re-arrange themselves, and as specials with a colour temperature that allows them to stand out sharply from the tungsten lamps.

His triumph is matched by that of Jonathan Deans' sound, which carries across René Dupéré and Benoit Jutras' music with complete clarity, yet with all of the energy that the show, at times, demands. And, of course, by the performers, who range from 'very good' all the way up to 'completely staggering'; performers who can scale vertical poles as if they had no weight, then slide down them but bring themselves to a halt mere millimetres above the ground; trampolinists jumping past or, seemingly, through each other; trapeze artistes catching each other by their finger tips, each jump more daring than the last. *Mystère* looks set for a long, long future in Las Vegas. Unlike some Vegas shows, it deserves it.

#### SALTIMBANCO

Saltimbanco actually pre-dates *Mystère*, created as it was in 1993 for a North American tour. It subsequently headed Cirque's move into Europe, as they established a second base in Amsterdam. The show has been touring Europe in a 2,494-seater, 50 metre diameter, 25 metre high tent that takes a team of 90 people to erect. But when the time came to consider a visit to Britain, some doubts seem to have set in. On their only previous visit to the country, Cirque had problems. A rented tent, a less-than-ideal location on London's South Bank, over-confidence in their own reputation following their success elsewhere and, almost certainly, Britain's notorious reluctance to accept that anything with a foreign-sounding title might be good, all conspired against them.

For their return visit, they have taken a different approach. Why not take a building that looks a bit like a domed tent like, say, the Royal Albert Hall, and mount the show there! In conjunction with Harvey Goldsmith, that's exactly what they've done.

Of course, making the transition from tent to hall was never going to be easy, especially in a hall as difficult as the RAH. The biggest problem the creative team faced was the height of the hall's seating - in the tent, the audience sits on one raked level, in the hall there are four levels of seating to contend with. The hall's limited backstage space also meant that the equipment used by the various acts had to be brought on-and-off from different places.

To accommodate this, the set was slightly re-designed. It still featured a main 'ring' area, built up from the Hall's arena flooring, but the section upstage of that which houses the band was re-raked to slope upwards and outwards to improve sightlines and to allow equipment to be rolled directly on-and-off stage. But the gaudy floor with its brightly painted butterfly image remained, as did the collection of coloured glass circles that sit above the band, and the main circular truss that supports the aerial acts and part of the lighting rig. Installing this required extra steelwork in the Albert Hall's roof; this holds a main black rectangular truss which supports the main speaker rig and the circular truss, which is then tensioned off to any available part of the building. Backing the stage was a wrap-around cyclorama that looked very low until you realised that its height is normally limited by the downwards curve of the tent's roof. But even with that slight oddity, the overall result was to make the normally cavernous hall feel surprisingly intimate.

The look of the show is more 'human' than *Mystère* - bright gaudy colours and costumes that immediately say vaudeville or, indeed, circus - appropriately enough, since Saltimbanco is old-Italian for street performer. The circus theme seems to be taken further, through the make-up and prosthetics, almost as if the intention was to take Cirque's troop of beautiful people and make them look like the curiosities of circus and fairgrounds of old - the midget and the bearded woman are here symbolised through giant noses, blank faces or stretched heads. Without all of the facilities of the Treasure Island showroom, the mechanics of the circus are also revealed, with the performers pulling ropes to lift or move trapezes, but fitting perfectly with the style of the show. Some of the acts may be superficially similar to the acts in the other shows, but the actual content is completely different. And in this show, the company seem to take themselves less seriously: a stunning strong-man performance quickly debunked by two clowns, or a bungee routine immediately upstaged by two anarchic punks in a passing nod to formal new-circus rivals Archaos.

Luc Lafortune's lighting rig backs this theme with a surprising variety of colours, from bright, gaudy ambers through to a range of green Par backlights and toplights. "My assistant said 'I don't like the green' at one point," Lafortune recalls. "I said 'you're not paid to tell me you don't like it, but to explain why you don't like it'. He couldn't, so it stayed." And it works, adding a mystery to some of the acts, while successfully toning down the floor's colouring. There is no open white in the rig; scenes that need bright white light are given it by mixing all the other colours.

The Albert Hall rig is based on the usual rig from the tent - predominantly Fresnels and Par cans, some topped with scrollers - with a

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re-designed front coverage from the Hall's gallery positions using extra Par cans and 2k Silhouettes. Perfectionist as ever, Lafortune isn't completely happy with the result, feeling that he is less able to keep the audience's focus completely on the stage because of both bounce from the Albert Hall's off-white interior (rather than the dark blue of the tent), and the extra throw from the lighting positions he is using. And those changed positions meant that extra rehearsals were scheduled, just to allow the performers to find new reference points in the lighting rig. The rig is run from 144 ways of touring dimming, driven by a Compulite Applause with Compulite's moving light wing controlling the SuperScans. Operator Nol van Genuchten is full of praise for this combination, feeling that it gives him the best of both fixed- and moving-light control.

Lafortune also uses lighting from within the action, most notably the 'human Vari-Lites' - four performers who each have a huge, question mark-shaped hoop of metal with an M16 profile curving over their head. By twisting a handgrip the lamp can be made to tilt, by turning their bodies, to pan; the opening of the show has these four entering through the audience lighting themselves, then twisting the lamps upwards to light performers in the truss. They are a great effect with which the lighting designer is clearly still delighted, even after three years.

And while Lafortune is delighted with something old, sound designer François Bergeron is delighted with something new - the show's new venue. "I was a little worried by the Albert Hall because it is so big, and I thought it was going to be like other stadiums. But the sound turned out better than I expected, with some spots in the show sounding very good

indeed." Surprisingly, given the the difficult reputation of the Hall's acoustic, he feels that it was easier to deal with than the tent. "The only problem was that it was our first go here - the tent is difficult, but after six years we have developed a few tricks for dealing with it. The sound here is different - it's more immediate because it doesn't get carried around in the same way as it does in the tent."

The rig engineered by Hans van Wegen, is based around Apogee loudspeakers, a mixture of AE8s and AE5s forming the main rig with six AE2s normally used for the surround system and six AE12s under the musicians. For the Albert Hall, 30 extra AE8s were added to the grid and truss and four AE5s to the surround system. The speakers are driven by Crest amplifiers (a mixture of 8001s, 7001s, 6001s and 4801s), fed from a 48-channel Yamaha PM4000 mixing desk supplemented for London by a Midas XL88 8x8 matrix. Inputs come from Sennheiser UHF radio mics, AKG headset mics and an assortment of Shure, E/V, AKG and Sennheiser conventional mics. Reverb is provided by a Lexicon PCM-80 and five Yamaha SPX-990s, with delays generated by seven BSS TCS-804s, and there is a separate monitor system based around a Soundcraft SM48 desk.

Once again, a computerised surround control system has been installed to allow sound to be routed around the hall, in this case using two LCS matrix driven from a Macintosh Powerbook laptop that handles around 60 cues during the course of the evening. This is the one area where Bergeron feels the Albert Hall audience lose out to those at the tent, because of the difficulty of getting surround sound into all of the boxes. And the technology is used to different effect from *Mystère* - there it was epic. Here it is used playfully, even for comedy; the

show's main clown act is a semi-mime - a mime who generates his own sound effects. In one sketch he throws an imaginary rope out into the audience, with associated whistling sound. For one particularly epic throw, Bergeron and operator Patrick Martin take the sound and whip it round the hall as the performer and audience watch the rope's flight. As with so much else in a Cirque performance, it is the timing between the performer and the sound that makes the gag work.

Whether Britain takes to Cirque du Soleil this time remains to be seen. In the opening moments of the first performance at the Albert Hall they were certainly unsure - especially the audience members who were dragged on stage and into the action, an occupational hazard of being a Cirque spectator. But it didn't take long for applause, then cheering and finally foot-stamping to break through. On the official first night, the audience demanded, and got, four encores. Extra performances were soon being planned.

If Britain doesn't take to it, it's Britain's loss. Cirque is international - in part because they use little spoken language and so don't have to overcome that barrier, in part because their skills can be appreciated the world over. It's not old-style circus, and that upsets some people but clearly not the six-and-a-half million people who've enjoyed the company's performances since 1984 - or the many more who will enjoy them in the future, as they finish a new rehearsal space in Montreal to help with the process of creating shows and prepare to launch a new production later in the year.

They are a must-see company. They feel like a must-work-for company. John Offord may not get excited all that often but boy, when he does, is he right!

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# LET IT BE LIVERPOOL

*John Offord explores a major new creative scene in Liverpool with a pre-opening visit to the 'old school' of Beatle Paul McCartney as the Liverpool Institute for Performing Arts*

There are few more inspiring things than being inside any building that feels intrinsically warm and right for its purpose. Despite the final remains of builders' rubble and more than adequate quantities of dust as far as the painting teams were concerned, just three weeks away from its first student intake, the Liverpool Institute for Performing Arts on Mount Street already had the feel of an energy-charged scheme about to come into full life. I did the hard-hat tour with chief executive Mark Featherstone-Witty, whose early eighties dreams for music industry training drew him to Liverpool more by coincidence, than design.

Established in 1825 as the Liverpool Institute and School of Art, the magnificent home of the newly-opened and much heralded Liverpool Institute for Performing Arts had one big thing in its favour when its doors as a boys school closed in 1985 - Paul McCartney had been a former pupil. Couple an idea with a building and a name - Paul McCartney, lead Patron - and you've got something going for you. Expand on this with The Schools for Performing Arts Trust (the Featherstone-Witty part of the equation) and determined interest from Liverpool City Council, and most of us would say you've worked out a very successful project formula.

But we also know, several years and £14 million later, that it isn't just as easy as that, and despite the big-name attachment, hours and hours of patient background work and behind-the-scenes lobbying are equally essential if the story is to be brought to a successful conclusion.

From Mark Featherstone-Witty's point of view, the sequence of events that brought him to Liverpool began in London, almost 15 years ago. "In the early eighties we became aware



**Paul McCartney and Mark Featherstone-Witty - the energy-charged partnership behind LIPA.**

that there needed to be some sort of training available for what you might loosely call 'versatile performers'. It was at a time when Britain was emerging as the leading musical theatre nation in the world, and it was amazing that, despite the amount of very high quality training available, it was still segmented into particular areas of discipline.

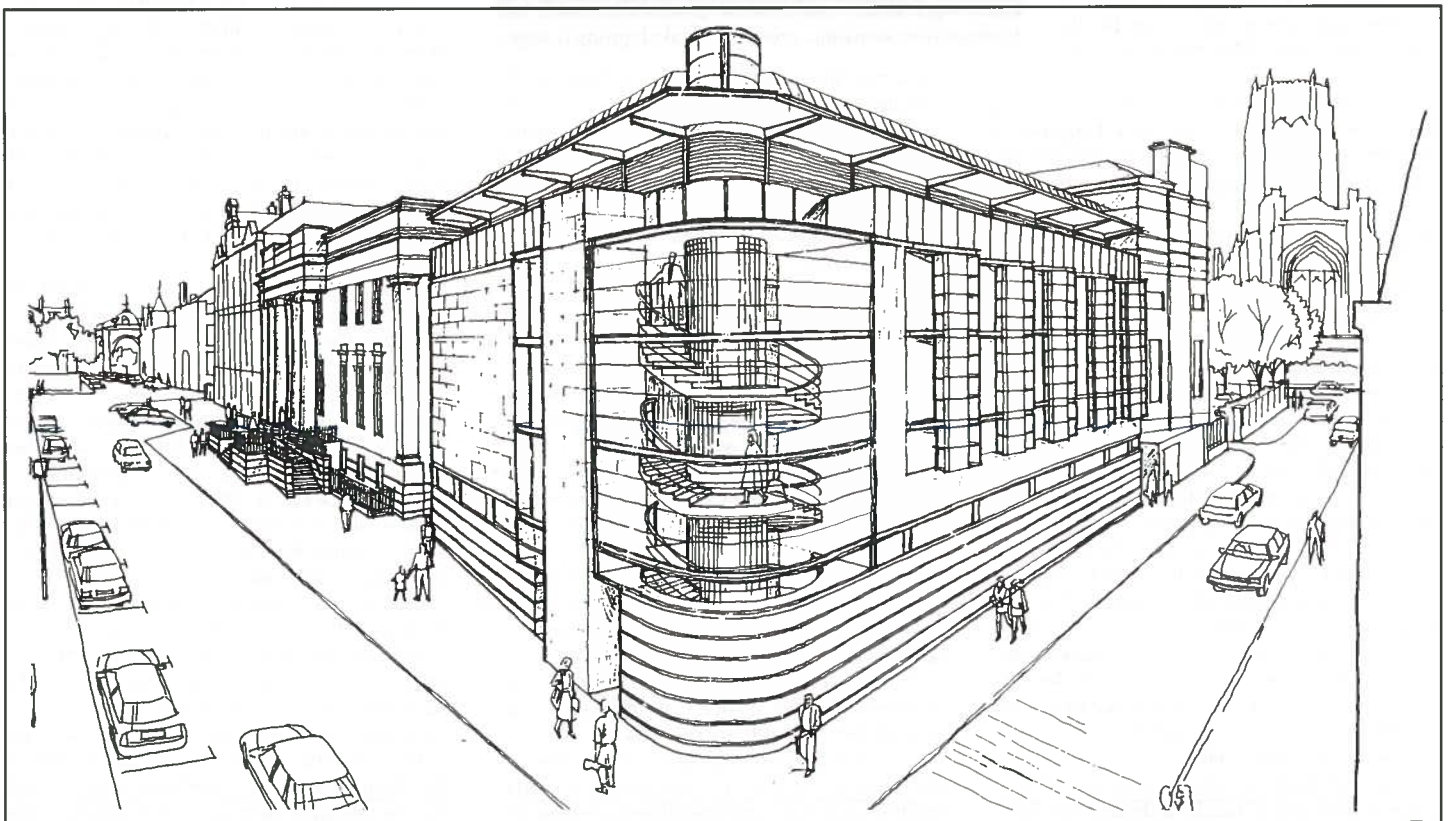
"There was little or no dedicated training for the music industry as such, and there was the feeling that artistes didn't realise they were entering an 'industry'. By that I mean there was, and still is, very little awareness generally that the British entertainment industry is one of the most viable industries we have. We are the fourth largest exporter of music in the world,

and in terms of our overseas earnings, it is our second most important export. But the facts remain largely unsung and the people involved largely unrecognised.

"Artistes themselves are often unaware and unprepared for the world of enterprise and managing a business. If you ask them what they have learnt, most of them will say 'well, you know my manager's absolutely terrible,' and so on. Another factor is that people change jobs a great deal before they end up in their main situation. Also, when the general public go to see a performance they tend to associate it with the performers because that's all they see, but in employment terms it's the tip of an iceberg.

"I feel we need to open peoples' minds out, and it's a very simple thing to do. Just as the credits go past at the end of a film, we need to persuade people to look behind the scenes. What we want to achieve at LIPA is to provide an environment where people can specialise in a number of fields, but at the same time receive a broad-based training which will give them a longer, greater and more pro-active career."

Featherstone-Witty started his campaign proper in 1985 and began talking to people in the industry. Leading record producer George Martin provided one of the most receptive ears and through the British Record Industry Trust and a little help from Richard Branson they raised funds for their first school - the BRIT School - and Mark Featherstone-Witty set up The Schools Performing Arts Trust. During the campaign, Paul McCartney had been contacted and although the reply to a request for help with the London-based scheme was a 'no', an important adjunct carried the information that if they wanted to turn their attention to Liverpool, they should get back in touch.





The beautifully rebuilt and renovated 550-seat Paul McCartney Auditorium.

In 1989 Paul McCartney and Liverpool City Council independently approached the Trust and within a very short time a feasibility study had been delivered, deliberations had taken place, and McCartney officially launched LIPA at a press conference prior to his 'Let It Be Liverpool' concert in June 1990.

By mid-1991 Liverpool had won some of Michael Heseltine's Department of the Environment £350m City Challenge money and was chosen as a 'pace-maker' authority, with the Council adopting Liverpool City East as an area where they wanted to create some flagship projects. They decided to spend £600,000 on re-roofing the Institute building and earmarked £3.4m for the LIPA project. Paul McCartney put over £1m on the table.

"We had to start from there," continued Featherstone-Witty, "and put together a business plan and go out into the industry for support. Our biggest music industry donor was EMI and after a second fund-raising lunch in Brussels and lengthy negotiations, we secured the support of Grundig who are giving us 1m Deutschmarks a year for four years.

"The rest has come from a variety of donations, including £2m from the lottery, although we applied for £2.7m. Despite this, there is still another £3m to be raised.

"Paul McCartney's involvement with LIPA - and nobody should be under the illusion that he is a soft touch - has obviously done a tremendous amount for the credibility of the project, and we could not have achieved what we have without his association. He has helped with everything from fund-raising through to our guest lecture programme, and he has also helped us out of tight corners when people have not come up with the level of support they had originally promised. However, he has always been careful to point out that this is not a career change for him, and that he is still a composer and performer.

"He maintains a strong interest in our programmes and all heads of department have



Another view showing curved and main lighting bridges.

explained their particular plans to him. As the building work has progressed he has shown an interest in such things as the colour schemes and graphic presentation. He also has a great deal of interest in the food we serve and how we serve it. I suspect that if all goes well and he finds it an enjoyable experience he will come back for more!"

There has been no shortage of takers for the various courses in LIPA's first programme with all available places heavily over-subscribed. I asked Paul Kleiman, the Institute's head of performance design, how they were setting about linking the courses to the requirements of the entertainment world at large.

"The main question, once we are operational and all the hype about being a 'Fame' school (i.e. all-dancing, all-singing, no-thinking) dies away, is what sort of knowledge, understanding and skills will entrants into the performing arts and entertainment industries require - whether they be performers, managers, designers or technicians.

"LIPA has a particularly wide focus on the live performing arts. This encompasses our undoubted strength in musical theatre and music production and a keen interest in developing areas of performance art, multi-media work and installations where the

collisions of art, performance and technology produce some very interesting results.

"One of the unique features of our work is its dual emphasis on developing and applying inter-disciplinary creative skills, alongside the acquisition of technical, enterprise and management skills. Our students should be able to communicate and, in some cases, cross the great and sad divide between the so-called 'creative', 'administrative' and 'technical'. We want all our students to be able to ask and, more importantly, to answer questions such as 'What do I want to create? What do I need to achieve it? How can it best be done?'"

The direct and essential links between LIPA and the industry are many and various. The six Advisory Boards (one for each degree route) consist of professionals and leading practitioners. The beautifully renovated 550-seat proscenium theatre and the new flexible 200-seat studio theatre will be run as venues for performances, exhibitions, demonstrations, conferences, and promotions. This will involve directly the Enterprise Management students as part of their training and students from other disciplines - most particularly the design and technical courses.

LIPA is also actively pursuing partnerships with commercial and industrial organisations in the UK, the EU and internationally in relation to the development and delivery of some of its courses, and a number of organisations are already involved. "It is already a beta-test site for Yamaha," continued Paul Kleiman, "and High End Systems of the US, who made a substantial donation of their Cyberlight units to us, have offered their experience and expertise in the design and delivery of some of our courses. These partnerships are not only of great value in themselves, but they also recognise that today's LIPA student will be tomorrow's practitioner and end-user.

"We are also involved in a European Union forum which is developing a single European-wide technical production course which will consolidate the differing notions of technical and stage management that exist within the Community.

"It is important to emphasise that as a university sector college offering honours degrees, LIPA has to maintain a particularly fine balance between its academic and vocational roles. In order for those degrees to be valued and to be of value, it is essential that we are able to provide our students not only with the skills and competencies demanded by an increasingly competitive industry, but also with the knowledge and understanding that can underpin and help forge a successful career."

Facilities for students at Mount Street are extremely comprehensive and, in addition to the main Paul McCartney Auditorium, include the attractive Studio Theatre and two performance rehearsal studios. There are numerous practice rooms, three sound recording studios, various electronic and other music studios, a large scenic workshop, a learning resource centre with library, listening booths and information technology facilities and various design studios including a dedicated CAD studio.

David Collier, projects director of ASG Stage Products, based in Ashton-in-Makerfield in Lancashire, has been at the forefront of the LIPA project from the beginning and in 1993 the company were commissioned to work alongside the project architect David Watkins of Brock Carmichael Associates and the rest of the design team. ASG have been involved with the co-ordination and process of design of the

fly tower, preparation of specifications for the technical requirements for stage engineering, lighting and sound equipment for the Paul McCartney Auditorium, Studio Theatre and two rehearsal studios.

"At the commissioning stage the project was two years from completion," explained David Collier, "although the pressure was on in order to submit the relevant design work which would enable the project to go out to tender. The initial design brief was somewhat limited, yet fairly open in order to maximise and provide the usual required flexibility of the relevant spaces. As an institute for performing arts, the emphasis was on education and training in all areas of performance and stage management.

Following the 12-month design period, ASG secured the contract with Balfour Beatty Building Limited for the supply and installation of all theatre stage engineering equipment, front-of-house lighting bridges, stage lighting, dimmers, controls and luminaires for the separate performance spaces; also for the supply and installation of the voice evacuation system and communications, facility panels, patch bays and associated wiring and commissioning to the main dance auditoria.

"The main theatre, just announced as the Paul McCartney Auditorium, is the central and focal point of the venue and has seating for 550 within its horseshoe-shaped space, with the stalls seats removable to allow for in-the-round and other performance forms. The main stage has a conventional 8.5m x 5m proscenium opening and the fly tower provides for typical stage use with a full complement of flying equipment, safety curtain, maintenance grid, loading, fly and LX galleries. Although the stage depth is limited to 6m, the stage apron with a further demountable thrust stage can enlarge the performance space as necessary."

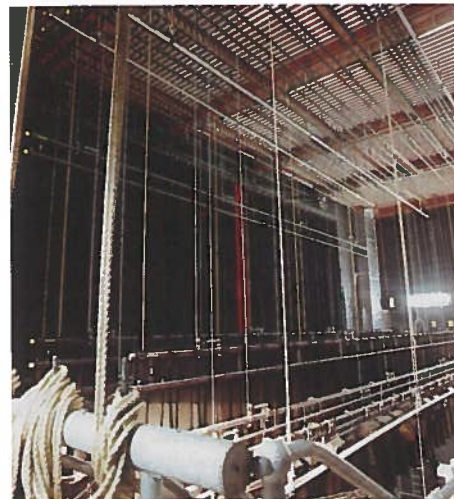
Front-of-house lighting positions and access were the topic of major discussion, as David Collier explained. "As a listed building, various characteristics and features of the auditorium had to be retained and limitations on loadings had to be overcome. For these reasons the ideal choice of lighting bridges was initially ruled out, whilst various other options were contemplated, such as ceiling traps, fixed bars, raise and lower lighting grids - all of which were suitable for lighting, but with restricted access for focusing, etc. At the end of the day it came back to bridges, and considerable effort was made in order to facilitate their installation in a way that would be safe, workable, and architecturally and structurally acceptable.

"Following several meetings and various configurations of bridges in an attempt to avoid obscuring the roof lights, a compromise was achieved with the decision to incorporate a curved wall bridge running around the complete horseshoe of the auditorium, combined with a main bridge spanning the full width. The end result has proved to be very successful and more than satisfactory to all concerned, and although the bridges have become a main feature of the auditorium's structure, their impact has been considerably reduced due to the meticulous design and finishing.

"In addition to the lighting bridges we have made provision structurally and electrically for the installation of a future motorised lighting bar or truss within the roof void, which will be located over the demountable thrust stage. This will become a permanent feature and will certainly enhance the front-of-house and in-the-round lighting. Small removable lighting



The entrance area: a listed building, the Institute boasts some stunning architectural features.



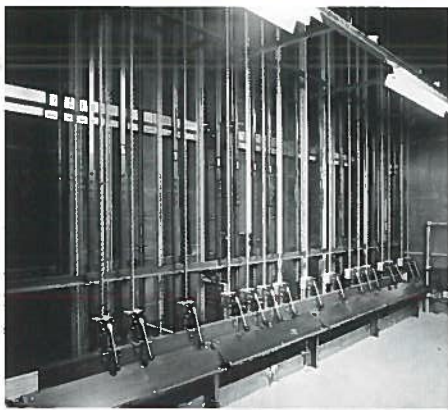
A view within the main stage fly tower.



Rehearsal Studio 2 showing lighting grid and perimeter drapes.



The flexible 200-seat Studio Theatre showing lighting grid and retractable seating.



Counterweight fly gallery, showing the counterweight sets.

bars are also fitted to the balcony front for side lighting to the thrust stage.

"The main stage is well equipped with a rigid safety curtain, perimeter curtains to three sides, 17 single-purchase counterweight sets, six rope hand-line sets and three hand winches, with motorised option, for stage lighting bars. Under-gallery lighting ladders on tracks also assist in providing the stage with a wide range of options for a variety of performances which students will need to become familiar with by the time they leave the Institute. The stage floor is located approximately 3m above basement level and has been designed in order to facilitate future stage traps."

Stage lighting dimmers comprise 120 Strand Lighting LD90 2.5kW and a 24-way LD90 non-dim rack and these are located in a room below and behind the stage. The circuit distribution provides 118 individual dimmable circuits and 24 designated non-dim circuits distributed to the auditorium roof void, front-of-house bridges, balcony front and main stage galleries and low level. A DMX circuit ring also provides the facility for control of colour scrollers and intelligent lighting units.

House light dimmers comprise two LD90 dimmers and three 7.5kW Multidim units. In addition to the main performance lighting control console, various Strand Lighting Outlook control stations provide ultimate control over three groups of house light fittings.

"With regard to the stage lighting controls, the client analysed the various systems on the market and eventually chose the Strand Lighting 430 console with up to 200 channels of various software," explained David Collier, "the main attraction being the system's integrated ability for controlling moving lights."

An initial total of 156 luminaires includes Strand Quartet, Prelude and Cantata units, Coda 1000W floods and two CSI followspots which will be available for various areas within the venue as required.

"Sound, communication and voice evacuation systems proved to be a long-discussed and interesting topic," continued David Collier. "ASG, with assistance from Ed Draycott of Playlight Audio in Manchester and sound consultant Paul Covell pioneered the initial proposals from the client's brief. ASG were to provide the system infrastructure with the supply of facility panels, patch bays and equipment racks, where the actual sound equipment ultimately became part of a sponsorship deal with Harman Pro Group who have been involved with the project from the early stages and who have worked closely with Marquee Audio.

"Audio consultant and data cable specialist Sam Wise of Sam Wise Associates with Andy Baker of Marquee Audio Special Projects played



LIPA's imposing entrance is a gateway from the past that leads to a technological future.

a key role, initially employed by LIPA to specify data cable, CCTV, telephone systems and to assist with design work on the recording studios. With the necessary interlink with the other performance space, the sound and reinforcement system and voice evacuation systems were to be expanded and integrated with other services. Designed by audio consultant Same Wise, ASG, via Playlight, manufactured and installed the sound and communications facility panels, patch bays and audio equipment racks, the voice evacuation system and the stage manager's desk."

Located on the first floor, the two generously-spaced rehearsal studios both have sprung floors, an internally-wired lighting grid, full blackout facility, curved perimeter/cyclorama track and provision for analogue and digital lighting control systems. The stage lighting equipment comprises 24 channels of Strand Lighting Act 6 dimmers, 40 ways of cord patch facility, and a Strand 24 channel LX 2-preset analogue control desk.

The Studio Theatre measures 15m x 10m, has a sprung floor, mirrored walls, a three-sided gallery with removable seats, retractable seating, an overhead modular internally-wired grid 5.7m above the floor, blue wool serge perimeter curtains, projection screen and video projection facilities. A full sound and lighting system, combined with fine architectural finishes and decor, all go to make this area a superb and splendid flexible performance space. Stage lighting equipment comprises 72 Strand Lighting LD90 2.5kW dimmers and a Strand Lighting LBX control console with a whole range of software.

By May of 1996 LIPA will have five fully equipped sound recording studios. Jon Thornton, head of sound technology, takes up the story: "From the outset it was decided to equip these to a fully professional standard, not only in terms of equipment, but also in terms of acoustic, ergonomic and systems design." The five control rooms, with acoustic design by Harris Grant Associates, all serve as general purpose facilities for track laying and mixing for music, but some are also geared to more specialist areas. For example, one room is geared towards audio post-production and sound to picture work, another possesses a foley stage in its live area, another allows for multi-format surround mixing, whilst another is biased towards music mixing and post-production.

"Console choice in each room reflects these



Paul Kleiman (left) of LIPA and David Collier of ASG, pictured with the stage manager's desk.

needs," explained Thornton, "as well as offering a range of different architectures. The two 'entry level' studios are based around traditional non-automated split consoles, with the other rooms based around large and small format in-line consoles, a digital console, and a choice of automation systems, including VCA, moving fader and total recall."

This variety of applications and technologies is driven directly by the curriculum of the Diploma of Higher Education in Sound Technology that LIPA runs. "The course strives to instil in its students both a depth of technical knowledge and skill and a breadth of experience in many application of sound design and engineering," added Thornton. "The design of the infrastructure of the studio systems also reflects the needs of the LIPA curriculum in a broader sense. An important part of the teaching philosophy at LIPA is to encourage cross-fertilisation between disciplines. For example, students studying music will be expected to collaborate with students studying sound technology, enterprise management, acting and design, to produce fully professional products. These could be live performances, commercial CD releases, musical theatre productions - the applications are limited only by the student's own imagination.

"To help them, the building is cabled in such a way as to allow almost any performance space to be easily patched to any other for audio, video, communications and data. Any recording studio, for example, can be patched to any space to allow the recording of almost any conceivable performance. Common multi-track tape and hard disc recording formats throughout the building also allow easy portability of projects from area to area."

As you are reading this piece, students will be using the facilities of the Liverpool Institute for Performing Arts for the first time, and the dreams and years of planning will have become a reality and within the near future a model for entertainment industry training - driven on by the huge attachment in people's hearts to Liverpool as the centre of the greatest period in popular music Britain has known.

Paul McCartney said in the introduction to the original LIPA prospectus that he wanted music and the performing arts to be part of the exciting changes that were taking place in the City of Liverpool. He also wanted to bring life back to his old school. On Monday 8th January 1996 both ambitions came to fruition.

And the first-ever Monday morning reaction from chief executive Mark Featherstone-Witty? "The start of LIPA is like the birth of a child. You know what's going to happen, but you are amazed and surprised when it does!"

And from the first student through the doors? "Quite simply, it's amazing!"

## LIPA: A CONSULTANT'S VIEW

*LIPA is one of the most exciting projects I have ever had the pleasure of working on, and comes in not one, but several packages. Firstly, it is inspiring to participate in a project where an exciting vision is kept in front of everyone. LIPA does actually have the potential to be different - combining technical, artistic and administrative trainees into real-life structures for a two to three year training programme. It can be a hothouse for synergistic talent building. The hardest part for the lecturers will be staying out of the way while instilling discipline and structure to a maelstrom of some of the world's best young talent!*

*For us, it also provides the opportunity to help create a technical environment where those of a like technical bent can see, experience and use good quality engineering. To this end, Sam Wise Associates, together with Andy Baker of Marquee Audio Special Effects, have striven together to design and install excellent systems at various levels of cost and sophistication.*

*Too often the educational environment for theatre and sound specialities has settled for mediocre quality when part of the whole job might be to set standards which those of its graduates who end up as systems designers could emulate. Here, we have had the opportunity to contribute to and direct this principle.*

*It has given me the personal enjoyment of using almost every talent and skill I have built up over 25 years in the audio industry. At LIPA we started with the design of wiring infrastructure from theatres, to recording studio, to radio and TV suites. Included were the MATV systems, datacoms and telecoms networks, analogue and digital recording environments, theatre sound and comms and cables of many types and functions linking the whole complex together. We have also had input from studio planning and auditorium acoustics.*

*Moving from consultant into the role of systems engineers for the contractors, Marquee Audio, we have been able to try out lots of ideas formed in the misery of trying (as consultants) to get theatre open to a reasonable quality standard. Some ideas have proved excellent - others will return to the rubbish heap where they belong.*

*Now, we hope for the opportunity to continue our contribution by assisting in the areas we know best - to help train some of the future audio professionals in both live and recorded sound arenas. As departmentalisation tries to take over, I hope LIPA will hold to its vision and say no! As financial pressure attempts to squeeze it into mediocrity, again I hope it will say no!*

*I hope it keeps up the struggle so that in a few years it will be known as one of the best places in the world for talent to develop - with employers screaming out for LIPA graduates, and improving the quality of our diverse professions in the UK. Thanks to LIPA for giving me and my team the chance to share this challenge.*

**Sam Wise - Sam Wise Associates**

## LIPA COURSES IN BRIEF

**The degree programme at LIPA is the product of a five year consultation process involving leading figures from all sectors of the entertainment industry, LIPA's European partners, Liverpool John Moores University and other training providers worldwide.**

**LIPA runs two courses. The first, a BA Honours Degree Course (three years) consists of a core programme from which students are allowed to specialise via one of six alternative routes: acting, community arts, dance, enterprise management, music and performance design.**

**LIPA's Diploma in Higher Education (two years) is also a modular course consisting of two options: Sound Technology or Production and Performance Technology.**

A D M I R A L

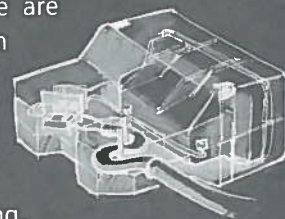
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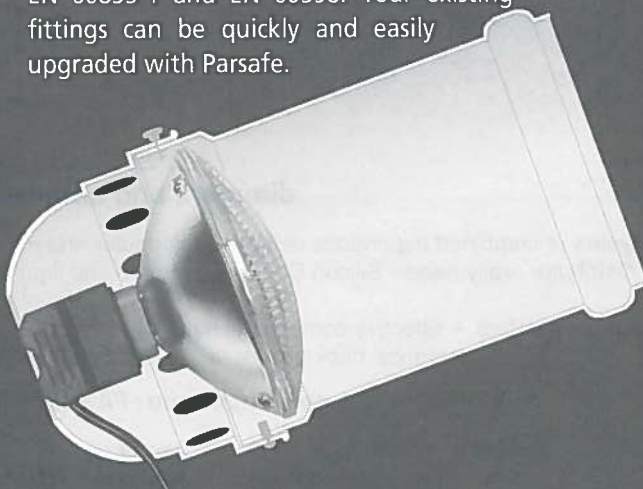


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# BEHIND STEEL WALLS

*London's hottest new nightclub, The End is a dream come true for owner Mr C of The Shamen. Mark Cunningham talked to him about the heavyweight sound and light systems which provide the futuristic vibe*

Much like Doctor Who's Tardis in the middle of a quiet mews, the presence of The End in London's tiny West Central Street is a mysterious sight. Set within a row of dreary back-street buildings, the shiny steel and glass outer visage of the capital's most happening dance venue would be more at home in Gotham City, and at first sight appears slightly threatening. But with a vigorous weapon search regime guaranteed to make Heathrow's security appear lax, one is assured of a trouble-free night out.

The face behind the club, which was launched with a bang on December 2nd 1995, is the DJ from The Shamen, Richard West a.k.a. Mr C who, from his early days behind the turntables in 1987, dreamed of running his own club. It was during the heady days of acid house in 1988 that he first met future partner Layo Paskin, and the seeds were sown for the beginning of The End. "It was a little while after The Shamen became successful when Layo told me that his architect father needed to develop a property so that the owners could lease it on, maybe as a club. Layo felt that if there was anyone who could pull it off, it was me."

## **CONSTRUCTION & DESIGN**

C had already earned an enviable reputation as a party DJ in London and became interested in the prospect of possibly fulfilling his main goal at last, while capitalising on his growing popularity. "As soon as I saw the premises I was blown away. In the vaults, which used to be a nineteenth century post office, the floor was only the same height as the bar is now, so we had to excavate two metres down to get the height in the main vaults. The idea was to make it into an open-plan dancefloor, but the two vaults were separate and we had to pump a ton of silicone concrete into the ceiling to make the breakthrough without the building falling down."

The gods were on C's and Paskin's side as, by way of a complete fluke, both vaults were naturally acoustically tuned to 100Hz, resulting in minimal, if any, bass loss. C comments: "You can be sitting in a room right above a set of speakers and not really feel the heavy vibrations. As soon as you go downstairs the sound hits you hard, but we don't get any complaints from people nearby, even though we are pumping out frequencies that would normally offend neighbours."

The End was designed by Douglas Paskin of Paskin Kyriakides Sands, the architect behind a number of successful recording studios. In conveying a futuristic, high tech and modern image, C and the Paskins have fashioned a club which transmits all of these qualities, while appearing strong, solid and serious. Even the bar has a look that could be 50 years ahead of its time (it is actually not too dissimilar to the bar in Star Wars). "It was important to give the impression that we were not building on weak foundations and that a great deal of thought



**The Soundcraft D-Mix 1000 with the BSS Omnidrive and graphic EQs looming overhead.**

went into the club, rather than just putting a sign above the entrance," says C. "When you come to the door, you are immediately impressed by it all. As you are drawn in and down the stairs into this subterranean club, a great feeling of anticipation comes over you."

## **DELIVERING THE FEELING**

It may be a new club, and C admits that there are several aspects to be addressed before he feels he can rest easy, but the sound and

lighting systems arguably form the best nightclub specification in London, if not the UK. Many elements were inspired by the equipment C toured with as a member of The Shamen, such as the Thunder Ridge speaker system supplied by Sonix Concert Sound. "As a DJ I have played around the world on all the best rigs, including Martin, ASS, Turbosound and JBL, but the first time I heard the Thunder Ridge speakers I just couldn't believe a rig could sound that good!

"For clarity I don't think anything can touch the system - they are almost hi-fi, and that's what we need in this club. After working with The Shamen, I also booked a Sonix rig for the Legendary Drop parties and Plink-Plonk record label showcases that I did in London in 1993. We would have a 10kW RMS rig in a room that held 400 people and a 5kW RMS rig for a room of 200 people, and they kicked out amazing sounds. Although those rigs were just wheeled in for one day, ID magazine reported that the rig sounded better than the Ministry's. So, for me, there is no other choice of sound system."

Alastair Morton, designer of the Thunder Ridge boxes, was consulted and specified PSL (PIC Systems Ltd) amplification to drive the Thunder Ridge rig at The End. "I simply told Phil I wanted Thunder Ridge and that people should walk in here and say we have the best nightclub sound system in the world, and be physically blown away by it. And that is exactly what is happening. So my own specification was based in sensations rather than numbers, and it was for Al to go away and, in collaboration with Thunder Ridge technical director Tim Harnden, design the actual installation. I knew it would be in the region of 20-25kW, which is too big for that space, but it means we never have to whack it up to its maximum."



**The interior of The End - a long way from its origins as a nineteenth-century Post Office.**

Bristol-based Thunder Ridge's involvement with C has its origins in The Shamen's Synergy Production shows in 1989, when the band decided to take a Sonix Concert Sound rig on the road. Phil Lowther of Thunder Ridge comments: "Mr C really liked the Sonix system and when his dream came true to own a club, he wanted the same equipment installed. So the boxes he has in the club are identical to the touring system, only they were recently renamed Thunder Ridge. We have supplied the rig for the Jazz and World Stage at Glastonbury for the last three years, using an almost identical front-of-house system to that at The End."

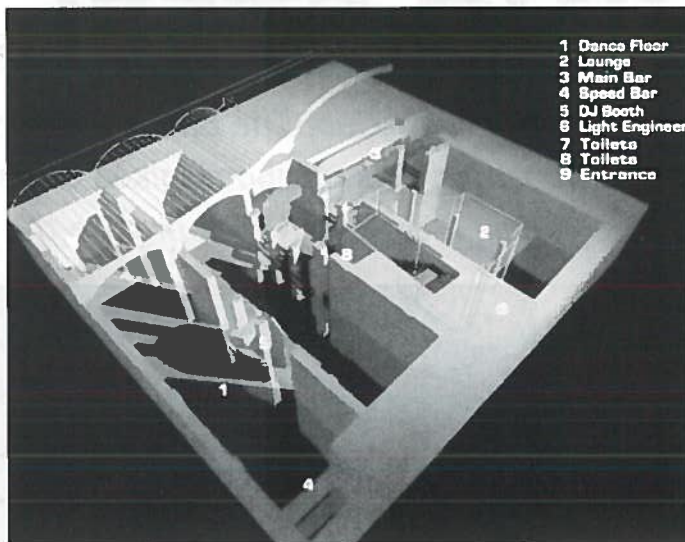
At the end of each of the two main vaults in the club are six of the main double concert stacks, formed from four 2 x 18" bass bins, two high packs with two 12" drivers on expeditious torpedo flares, two 2" drivers and three bullets. In the chill-out zone, there are boxes of the same design with four 2 x 18" bass bins with two half-size high packs.

The choice of PSL amplification to drive the system came through Lowther's purchase of the company's high wattage, compact amps last spring. "I've known about PSL for about two to three years and I was very impressed with the performance of the amps I bought, so when it came to fitting this club with amplification, PSL was chosen as the supplier of 21 power amps (eight Vp 2016s, nine Vp 1620s and four Vp 1216s), and they have also given us tremendous support during installation."

Formed five years ago, after outgrowing its 1,500sq.ft Bristol premises, the company moved last year to Middlesbrough, where all of its manufacturing, sales, marketing and demonstration activities are consolidated inside a 6,000sq.ft building. PSL now manufactures around 800 amplifiers each month for selling into every major European country, North America and China.

"Financial support and the blossoming North East music scene were major factors in the move," said sales and marketing director, Roger Skuse. "PSL believes it can promote itself and the North East to their mutual advantage. We are very keen to get involved with North East bands and we are going to create a fully-equipped rehearsal studio which bands and singers can use free-of-charge to develop further musical activity in the region."

"The one thing that PSL needs is a higher profile and we have already begun to generate that through installations in venues such as Stringfellows, the Astoria, Sticky Fingers and the Hard Rock Café. The End is probably the number one nightclub in London at the moment and in my mind that speaks volumes for the quality of our product."



Still at the 'tweaking' stage, C claims that the BSS Omnidrive is the key to maintaining optimum control of the rig. "We adjust the system almost every day, and every couple of weeks new settings will be programmed into the Omnidrives. It's all brand new equipment and we are wearing it in, so it all has to relax into the club environment."

Morton adds: "The system was basically designed to work with BSS control equipment, such as its FCS-930 and 960 graphics, and until the Omnidrive came out, it was run from FDS-360 crossovers. As soon as we could get our hands on the Omnidrive, I had an eye for using it on the big rock 'n' roll systems, so it was an obvious progression to use it in this situation. EQs can be set up and stored, and be left to run themselves. In conjunction with good limiting it was the obvious choice."

C is a major fan of Soundcraft's D-Mix 1000 DJ mixing console - supplied by LMC Audio Systems - which he describes as "thoroughly and uncompromisingly wicked! I hadn't heard about the D-Mix until Thunder Ridge introduced it to me. The D-Mix has a very high-tech front end, with the cross fader assigns, and I like the way the auxiliaries are laid out, and the balances on each channel. When I bring in a track, I like to bring it in with all the bass frequency out and then swap the basses over in the mix. I use the EQ on each channel to the fullest degree as someone who almost remixes using turntables and a mixing console, so the D-Mix has proved perfect for that. It's simple; the front panel looks smart and it's robust. The only drawback is that it only has +/-6dB on the EQ, but we need it to go up and down to +/-12dB. It isn't a long term problem

as we are having it modified - we will have the only D-Mix of its kind in the world!"

A further mixer used at The End, in the lounge area console, is the Pioneer DJM-500. "We couldn't fit anything bigger into the console!" explains C. "We also have four Pioneer CDJ-500 CD mixers which are state-of-the-art and the way you can fire off CDs with the DJ console is amazing because it's all interactive."

All floors are wooden sprung and although mainly designed as a chill-out zone, the

lounge is used by promoters in other ways and is often quite full as a dancefloor. The lounge holds around 250 people and generally operates with a backdrop of ambient or funk/groove music, however, its 5kW RMS sound system can more than handle a switch in mood and tempo.

#### LIGHTING

In tandem with the sound system, C, together with Andy Walton from The Spot Co have assembled a highly effective lighting design, controlled from a Wholehog console. "We have 20 Trackspots, four Emulators, colour washes and strobing, and I know we chose correctly," explained C. "We went for Optikinetics projectors because they will give us total control. With the colour washes, we can instantly change the atmosphere by swapping reds with greens, yellows or blues, and get the environment to work with the light and sound. The lighting engineer is on the floor at the same level as the DJ, which enables them to be very interactive, and to follow the mood of the crowd."

C is obviously delighted with his new project, and the early crowd assembled the evening I visited did more than just suggest he has captured the imaginations of London's nightbirds. Even as early as 10pm the place was virtually spinning with atmosphere. C gave me his philosophy: "It's an unusual vibe but only because most club owners treat the businesses as money-making schemes. Our policy has been to provide quality with no compromises. I think we have gone for the best equipment right down the line and it has been about giving, not taking."

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## 11TH & 12TH FEBRUARY 1996

The Scottish Lighting Exhibition, organised by BBC Resources Scotland in association with Scottish Broadcast and Film Training LTD and PLASA will be held on Sunday 11th and Monday 12th February 1996 in Studio A, Broadcasting House, Glasgow.

The exhibition has been established to enable anyone with an interest in lighting not only to view the latest equipment available, but also to gain hands on experience of using it.

The exhibition will be interspersed with seminars hosted by leading lighting designers of the lighting world who will impart invaluable advice and knowledge.

Among the confirmed exhibitors are Strand Lighting, Northern Light, Vari-Lite, Cirrolite, M & M Group, Blacklight, Total Quality Lighting, I-Light and Lee Lighting.

Put the 11th and 12th February in you diary now - the opportunity is too good to miss!

Entrance fee to the exhibition and seminars is £10 for one day or £15 for both days.

For further information on the Scottish Lighting Exhibition contact Joe Breslin, Room G109, BBC Resources Scotland, Glasgow, G12 8DG, Tel: 0141 338 2269, or [www.bbc.co.uk/glasgow](http://www.bbc.co.uk/glasgow).



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ATW-003

# TASTY SIGHTS AND SOUNDS

*Mark Cunningham sank his teeth into the first night of December's Big Twix Mix pop feast at the NEC, Birmingham*



The Big Twix Mix stage at the NEC, Birmingham, with the 'technopods' visible either side of the Jumbotron Screen.

After massive achievements with the Nelson Mandela 70th Birthday Tribute Concert in 1988, Guitar Legends in Seville and Roger Waters' all-star *The Wall - Live from Berlin*, producer Tony Hollingsworth and his company, Tribute Management, had a lot to live up to when billing a string of live concerts as *The Greatest Music Party in the World*. But those who braved the bitter December weather to venture out to Birmingham's NEC Hall 5 were in for a multi-sensory treat with a line-up of diverse stellar acts, including headliners David Bowie, Rod Stewart, East 17, Eternal and Diana Ross, supported by some of the latest innovations in stage design.

Known generally as the Big Twix Mix, in no small part due to the sponsorship tie-up, this five night spectacular was recorded by The Manor Mobile and filmed by BBC television for broadcast over the Christmas period, both in the UK and abroad, to an estimated 400 million viewers. Yet despite the apparent enormity of the exercise, plans for the production did not get underway until less than six weeks before the first night, as project manager Chris Hey from PA suppliers Britannia Row Productions explained. "We first learned about the shows six weeks before the event, so we haven't had much time to plan it, although that hasn't really caused a problem," he said, shortly before the excellent Echobelly kicked off the proceedings. "Most shows have a much better lead time, but the only real complications have involved the sound recording and filming. There have been

no production rehearsals as such, but there have been very well organised sound checks for the artistes, and Bill Martin has done a superb job of stage managing the whole thing."

Much of the talk backstage and among the audience concerned the elaborate Mark Fisher stage design, as supplied by Star Hire. Central to the concept was Screenco's huge 5 x 4 Sony Jumbotron JTS-35 vision screen which dominated the rear of the stage as a dazzling backdrop to all the performers. To form an extended landscape image, an additional four single columns of four-screen units were placed one foot away from the main screen. The Screenco team had the unusual task of loading in the screens ahead of other riggers, four days prior to the first show, due to the staging being built around and underneath the screens.

Although Screenco has provided camera teams and full vision mixing services at a number of high profile concerts recently, including Rod Stewart at Wembley Stadium (L+SI, July 95) and Oasis at Earls Court L+SI, (December 95), it was the BBC which, on this occasion, handled the camera and mixing work. "We are literally taking a feed from the BBC," said Richard Ellis, who co-ordinated the three man Screenco team and load in/out crew for the events.

Freelance director for the BBC, Gavin Taylor, whose previous credits include Channel 4's *The Tube*, expanded: "The screens are being fed from the BBC truck, and they carry either images of the live performers or video inserts

which will be generic when the bands are playing, so it isn't specific footage. In between the bands, during changeovers, there will be a variety of promo videos on screen, so there is something running on them all the time.

To ensure a comprehensive mixture of wide stage images, the Beeb crew constructed a 60m suspended camera track, running from the centre of the screen down to the far end of the auditorium. Remote operation of the camera from this track allows tilt of focus and control of the camera's speed of movement. Taylor added: "We are using the new Ikaigami chip cameras, and the BBC has provided us with the very best equipment. The cameras are feeding into the large BBC video mobile unit outside the building, and I have all the cameras on separate monitors. We are deploying 10 cameras through the vision mixer, plus we have several small CCD chip 'lipstick' Panasonic cameras placed in some interesting positions on the stage. We also have a Steadicam roaming around the audience, which records on its own unit, as well as three cameras pointing at the stage from the pit. On top of that, there is a camera backstage to record the presentations."

Ellis informed me that the original plan was to show video graphics on the outside single columns, with the artiste close-ups sandwiched on the main screen. These graphics were assembled by producer Hollingsworth from backdrops used behind bands on an Asian music TV programme. Ellis commented: "When the production team saw the way the



graphics looked on the screens, they decided that it would be good at certain points of the show to have those images taking over completely from the close-ups. In one respect, by having the graphics appear for long periods, it gives the lighting guys a rest from having to put on an all-singing, all-dancing light show throughout the entire performance."

Taylor, in particular, is a major fan of the Jumbotron screens: "The output from them is tremendous, some of the brightest I've ever seen. I've worked with vision screens quite a lot in the past, on a number of rock concerts, and many of them carry Jumbotrons. They are generally positioned either side of the stage, so that the audience can gain a good close-up view from afar, but on these shows, the screen is an integral part of the set, and has to battle with the light, but it cuts through incredibly well."

Joining the BBC's Taylor in praise of the dominant vision screens was the omnipresent lighting designer, Patrick Woodroffe, fresh from his work on the design for the new Simply Red tour (see separate feature this issue). He told me: "Screens have actually been designed into some of the last few shows I've worked on. The Rolling Stones had one at the back of the stage, and AC/DC are using one for a production which goes out in January. They are increasingly part of the repertoire as video becomes more integral to shows."

"However, everyone's getting a little bored with having the screens either side of the stage, as it means you are constantly forced to make your focus away from the real action. The idea of having something so powerful and strong right in the centre of the stage really appeals. You can't use front or rear projection anymore because it's not nearly so bright as a Jumbotron. This was always a key part of the design."

Woodroffe was also keen to point out the importance of the show with a bias towards the camera and the screen. "To provide lighting that is friendly to the camera is essential whenever video or television crews are part of the equation. They are as much a part of the jigsaw puzzle as the front-of-house sound engineer, and all the really successful shows have come as a result of putting that jigsaw puzzle together thoughtfully to create something which is seamless. The shows that don't work are the ones where you have too many elements fighting against each other. So if you have video, you must light the stage in a way that enhances, rather than overshadows,

***"We are seeing more shows these days where people are building custom-built structures on which to put the lights - the structure and lighting systems become the scenery and vice versa."***

the video effect. At the same time you must not allow the video element to overpower the show. Because this is really a television show, we are constantly referring to monitors so that we can see the effect the lighting is having on the camera work."

With a total of 25 rock, pop, dance and soul acts performing, a challenge was laid down for co-lighting designers Woodroffe and Dave Hill to come up with a scheme which helped cultivate an individual look for as many artistes as possible, within the boundaries of a common stage set. One of the most significant features of the lighting design was a Tony Hollingsworth brainwave, turned into reality by Mark Fisher. This involved what appeared to be four giant, new age umbrellas, but were actually futuristic 'technopods', each 15 feet tall and 20 feet wide,

and weighing over two tons, each of which carried a cluster of seven Vari\*Lites and video monitors.

Woodroffe told me: "The only disadvantage to having these technopods, which has actually turned out to be a blessing in disguise, is that they remove the need for a big lighting system. To place enormous trusses, grids, boxes and blocks of light around them would be completely self-defeating. What is so beautiful about them is that they float in front of a large empty space. The rest of the system is designed around them in that the low lighting position under the screen is really useful, especially when you're filming, and the side lights give us some real depth to make the whole thing look very big and wide. The idea of just using trusses in different shapes or places and then filling them up with lights is slowly becoming outmoded. We are seeing more shows these days where people are building custom-built structures on which to put the lights - the structure and lighting systems become the scenery, and vice versa."

"In lighting any act, you are always dictated to by the music and the performance, but there's no way you are going to make the stage look different 25 times. So we have concentrated more on the mood and the tempo, and how to light the principal acts. With Bowie, we light him in an arty, backlit manner. The poppier groups like East 17 are much brighter, with a lot more front light. That's where you strike the balance."

Complementing the 110 VL5s and VL6s, was the highly effective lighting system bought in by Concert Production Lighting. CPL's principal lighting technician, Mike Humeniuk, explained the extent of the rig: "Apart from the Vari\*Lites, we have six bars of aircraft light on stage and a further 20 bars on five 80ft long trusses over the audience. The audience trusses also have two six-lamp bars for a steel blue audience wash and a pair of truss warmers with Rainbow colour changers on the front. The generic lighting on stage is simply provided by two sets of ACs, and there are two 1200W Panis per side. There are also 10 Molefays with Molemags on the front to uplight the cargo net backdrop."

"At the front-of-house position we have six 2kW Xenon Super Troupers. To brighten the tops of the technopods, we have six 60W and





Lighting designers Patrick Woodroffe (left) and Dave Hill.



Monitor maestro John Roden.



Mike Humeniuk of Concert Production Lighting.

80W bulk heads in the top, six 500W floods to uplight the underside of the canopy, six Parcans and a string of small strobes. We also have Par 36 up and down lights in a Toblerone shape sitting in the centre of it all. All the Vari\*Lite's are run from an Artisan console, and the generic lighting is run from a Celco 60-way console.

We also have a Zero 88 XL for operating the Rainbows and a standard Colormag board for the Molefays."

Britannia Row's PA system at the NEC was standard issue for the company: a Turbosound combination of 36 Flashlight narrow loudspeaker cabinets, eight Floodlights, 14 underhangs and 48 bass enclosures. Jointly responsible for the two 64-channel Yamaha PM4000 consoles and a massive wall of outdoor equipment front-of-house were engineers Leon 'Big Ears' Phillips and Dave Braviner, names usually associated with the incestuous and eclectic Jethro Tull/Fairport Convention brotherhood.

For the entire audio side of the shows, an A/B system was in operation on the stage set-up, multicores, FOH control, monitors and the sound recording truck. Phillips explained why: "The idea behind it all is that while one band is on stage, everything can be set up for the following band at the same time on another desk. By the time you come to use the B desk, it's already set up to go. Ideally, this cuts down changeover time, and if we do encounter a problem, we can solve it in the time that would normally be used for something else."

Chris Hey explained that the stage boxes fed the signals to the Manor Mobile truck. "There



BBC director Gavin Taylor (left) with Richard Ellis of Screenco.



FOH sound engineers Leon Phillips and Dave Braviner.



Britannia Row's project manager, Chris Hey.

is a conventional split, and they take 96 lines from us across the A/B system. We take a split for the FOH and a split for the monitors, and the other split goes to the mobile."

In addition to the two PM4000s, the headlining act on each night brought its own desk and engineer. Phillips commented: "Bowie is also using two PM4000s - he is out on tour now anyway, and it makes sense for him to bring in the desks which have already been set up, rather than compile new desk information. The only exception will be Diana Ross, who is using a Yamaha PM4000 when she headlines, so she won't be bringing a desk in from outside."

Surely an automated recall system would have been ideal in a situation where such a wide range of acts are performing. Braviner was surprisingly lukewarm to the notion. "My own experiences of working with that kind of technology have not been good," he said. "The way we have approached it is rather like a better organised festival, because we have sound-checked and rehearsed the acts in reverse order and people have had to mark up levels and settings.

The drive rack split the PA into the main flown system, left and right, with further amps to drive the underhung and side cabinets. Of the extensive array of outdoor equipment,

Braviner added: "It's all standard band gear, with Drawmer compressors and gates, and Lexicon and Yamaha effects. For graphics we're using the Turbo-sound LMS-780 System. The rack equipment has been specified by visiting engineers for the different bands, and we are equipped for any eventuality, which accounts for the rack's size."

Famous as the monitor maestro on Paul McCartney's 1989-90 and 1993 world tours, John Roden was operating two 40-channel Midas XL3 consoles, either side of a 16-channel XL3 stretch, to mix for a total of around 40 wedges on stage. Roden, who shared monitor duties with fellow engineer Bob Lopez, explained the process of running the A/B system for monitoring.

"We run out of the B board and into the 16-channel desk, which just handles the effects in, returns from FOH and other sources such as DATs. The outputs from that stretch run into the A board, which is regarded as the master because we go from there to the amp racks. So any band that comes in has up to 40 channels and 14 mixes to play with."

There was the obvious requirement to chart the consoles when running the A/B configuration, but the BSS Varicurve system helped to smooth the ride. "We have given every band a basic curve, but occasionally people want to expand on that in their own unique way," said Roden. "So the Varicurve gives them the facility to bounce into the mix, boost or remove a frequency, save it for instant recall, and it's just for them. Whoever else comes on, you can just knock in a programme on the Varicurve remote."

Along with the comprehensive wedges, Garwood Radio Station in-ear systems played a part in the overall monitoring scheme, as well as being the key to crew communications. On the first night of the Big Twix Mix, both Alanis Morissette and Bowie, along with his entire band, were 'on ears', and it was expected that most of the other headliners and some of the support acts, would be using this new standard in monitoring.

A Radio Station was also used for the sound crew's communications system, enabling interchanges between the stage, monitors, front-of-house, and recording mobile engineers during sound checks. "The guys listen through the radio station and talk through head-worn lip mics," said Roden. "Because this show is really run from the stage, communication is vital - or we really would come a cropper!"

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# LET'S MAKE THINGS BETTER

## Bob Anderson visits the Philips lamp factory at Pont-Mousson, France

The incandescent lamp was born just over 115 years ago. Swan and Edison share the credit for first selling practicable lamps using electrically heated carbon 'wire' in an evacuated glass bulb, and a theatre, the D'Oyly Carte Savoy Opera House, opened in 1881, was among the first to take advantage of this brilliant idea. Unlike candles, gaslight and the carbon arc, it made no smoke, noise or smell, it was not a fire hazard and, most importantly, it could be dimmed.

Today, many technological improvements later, the modern tungsten-halogen lamp offers the same advantages and, despite rival fluorescent and gas-arc technologies, still dominates the live performance scene. Philips, the Dutch electronics giant, makes most types of lamp and is a leader among the only four or five companies now fighting to share the world market. Mass production to minimise cost, and quality control and technical innovation to maximise customer loyalties are expensive but inevitable, now that restrictive trade barriers and tariffs have all but vanished.

Martin Christidis, Philips' product marketing manager in Croydon, took me to Pont Mousson in France to see how Philips organise halogen lamp production under these demanding circumstances. Pont Mousson employs about 550 people to make all Philips' output of mains voltage quartz halogen lamps - some 700 types and about 30 million in total each year. It lies on the River Moselle, in rural surroundings, between Metz and Nancy near the French border with Germany.

Most of the output, numerically, is for the domestic and industrial market, but much of the value is from the SSTV (Stage, Studio and Television) sector. Naturally, my visit concentrated on this aspect.

### MANUFACTURE

Making an incandescent lamp looks deceptively simple. The filaments are tungsten wire drawn to tightly controlled dimensions from compressed sintered ingots of tungsten powder, since tungsten cannot be melted and cast like other metals. The tungsten wire is wound on iron wire mandrels to form the coil or coiled-coil as required and then the mandrel dissolved away in acid. The result, a delicate spring-like thing, has to be fitted to the support assembly in a jig, and the ends welded to lead-in wires.

The lead-in wires that bring the current into the quartz bulb are welded composites of tungsten rod and molybdenum strip. Next, a machine puts the filament assembly into the quartz bulb, heats the quartz to white heat and squeezes the 'pinch' to grip the supports and seal everything firmly in position.

The bulb still has a pumping tube attached and the machine uses this to exhaust all traces of air and, after flushing with inert gas, injects the required mix of filler gas and halogen compound before finally melting and sealing off the exhaust tube. To get the halogen into the bulb at the right pressure it has to be frozen with liquid nitrogen, so one moment the quartz is white hot and the next at -210C: a spectacular



Gerard Bornet, Bob Anderson, François Karche, Jean-Jacques Tomas, Fernand Pereira, Charles L'Huillier, Alan Lang, George Howells and Martin Christides.



Blue Pinch Technology - old and new.

process! Finally the bulb is cemented to the base, the lead-in wires are welded to the pins and the completed lamp tested, labelled and packed for delivery to the customer. At Pont Mousson, Philips, like other manufacturers, use a mixture of handwork and automation for these processes.

Filaments and bulbs are, in fact, made elsewhere at other Philips factories. Welding the filaments to the lead-in wires and mounting on the support wires is mostly handwork, aided by jigs and gauges, and loading into the exhausting machine, removal, capping, labelling and packing all require a mixture of manual and machine processes, depending somewhat on the type of lamp being made. A given assembly line may need half a dozen to a dozen people per shift. At Pont-Mousson about six assembly lines work on different lamp types.

### QUALITY

Despite the basic simplicity, great accuracy and quality control are required throughout or things go wrong. Minute errors in filament diameter or unwanted kinks will cause hot spots and early failure. Badly assembled supports, poor welds, minute traces of impurity in the gas filling or pumping lines, flaws in the quartz bulb and many other factors can be equally disastrous. Over 100 parameters are continuously checked and controlled to keep

quality at the required high standard. Again, like many other companies, Philips has devised and implemented elaborate quality control procedures, and the subject is now a well-developed science.

Most companies have achieved, or aspire to achieve, certification to ISO-9001, the international standard that defines the production control systems, supervision, training, monitoring and documentation that have to be in place if acceptable quality standards are to be achieved. Each company devises and writes out its own interpretation to suit its product range and, after approval by outside experts, receives a certificate of compliance.

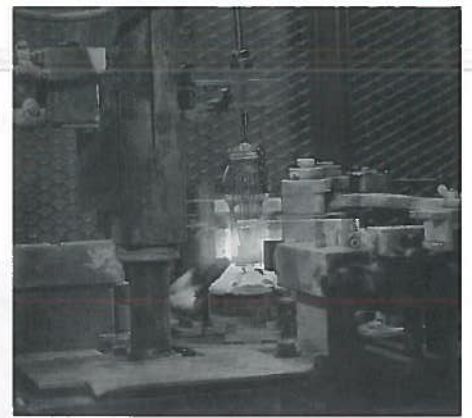
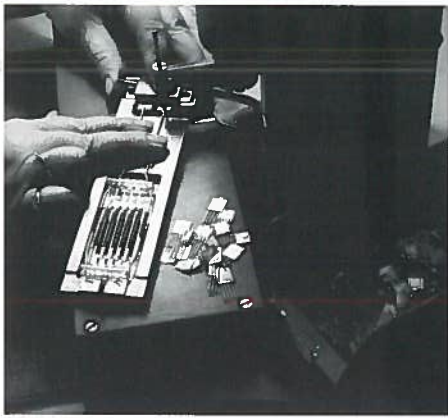
Philips, of course, are fully certified and, furthermore, also apply their own even more demanding standards, dubbed PQA 90. In practice, this means the shop floor work force and managers work as self-directed teams to set quality benchmarks, measure results and take corrective measures on a daily or even hourly basis as required. Notable on the factory floor were marked boxes for collecting damaged items for examination and analysis and up-to-date graphs showing weekly quantity and quality achievements.

Everybody co-operates to spot problems and suggest cures. Additionally, statistically validated samples are taken by the independent quality control department for lifetime burning tests on open racks and for measurements of light output in integrating spheres. Checks are also made on colour temperature, filament resistance, optical centring and other factors important to the user and which also provide guides to overall quality control. Another independent department undertakes tests on behalf of lantern manufacturers, etc.

For example, a company designing a new spotlight must be sure that internal temperatures and ventilation do not overheat critical parts of the lamp if rated lifetime is to be obtained. Philips experts will carry out tests if asked and, if necessary, work out improvements with the designers. Only when approved will the standard Philips lamp life guarantee be valid. Conversely, when Philips are developing a new lamp, they invite the manufacturers to suggest uses and then co-operate, often in strict confidence, to optimise the application before announcing it to the world.

The test laboratory I saw has clever rigs to measure internal temperatures and beam pattern, in all modes of use, and plot these automatically for analysis. The test lab is also concerned with evaluating new products and new manufacturing techniques. New products may be minor improvements or major new lamp technology, both intended to be revealed to the customer when perfected.

New manufacturing techniques may only be important within the factory as steps to keep ahead of rivals in the ceaseless struggle to improve output and quality and decrease failure rate and manufacturing costs. Pont Mousson design and manufacture all the lamp making machinery used at the factory and undertakes constant improvements.



Lamp manufacturing technology - a process that looks deceptively simple, but which in reality is highly complex.

### DEVELOPMENTS

George Howells, originally from New Zealand but now a confirmed European, is SSTV halogen lamp product manager at the factory and proud of the developments introduced by Philips. We discussed three examples.

Bi-plane lamps have compact grid filaments intended for Fresnel, PC and profile spotlights and precision projectors. By arranging alternate coils of the filament in a staggered array, the insulating gaps between coils disappear when viewed along the optical axis resulting in a brighter and more defined beam. Launched some years ago, the concept originally got a reputation for excessive fragility and early failure from vibration. Now, these fears have proved unjustified, and for many uses, bi-plane filaments have become the standard.

George agreed that some improvements in design were made to achieve this, but explained that this is all part of the normal final development procedure inevitable for any highly refined product. He reminded me that Philips, like all other reputable manufacturers, will always be sympathetic to claims for free replacement for any lamp that fails early under reasonable use. The second development is new and is featured in advertisements elsewhere in this magazine. It promises to be significant in the ceaseless quest to make lanterns smaller, lighter and brighter. It is not generally realised that incandescent lamps fail from two unavoidable natural causes, apart from accidental breakage or over-volting.

The failure mode everybody knows about is filament failure due to old age. More precisely, this is a gradual thinning of the tungsten wire due to evaporation at the white hot working temperature that, despite the moderating effect of the halogen filling and high internal gas pressure, eventually results in localised overheating and burn-out. Run at full voltage, this may give a lamp a life of 200 to 400 hours, depending on type.

However, even a slight voltage reduction will enormously increase life expectancy, which is why most users, especially of dimmers, get many times the promised life in actual use. The other effect is when failure of the pinch seal allows a small air leak and hence immediate filament failure due to oxidation. The pinch seal carries the lamp current lead-in wires from the oxidising external environment to the even more unfriendly halogen filled internal space.

Tungsten wire is essential in both atmospheres, but it cannot be used through the body of the seal because its thermal expansion rate does not match the quartz. So a molybdenum strip is welded between the tungsten sections and the problem is more or less solved. But the pinch seal cannot be perfect, and at working temperatures air can creep in to the molybdenum strip and it slowly oxidises.

Oxidised molybdenum is larger than the pure metal and puts mechanical pressure on the quartz and, after a time, the seal cracks and leaks and the lamp fails. If a 300 hour filament life is expected, for example, then the pinch seal life can be easily made longer than this. But the increased filament life due to dimming cannot be matched by an equal increase in seal life under these conditions, unless the seal temperature is very conservatively rated and closely controlled. Hence, lamp manufacturers place great emphasis on maximum working pinch temperature when assessing lantern ventilation design.

For their part, the distance between the filament and seal is set to give a reasonable chance of achieving this requirement. Delaying the onset of seal oxidation would clearly be a worthwhile improvement, and Philips have now done this with their new Blue Pinch technology, which adds a near-invisible additional sealing component at the outer end of the pinch. The result is that the lamp can be made smaller or the lamp power increased by using a larger filament. At the same time, the seal temperature limit is increased to, typically, 500°C allowing a smaller luminaire. So far, it has been the TV and film location lighting manufacturers who have taken advantage of this advance, but theatre and disco lantern manufacturers must be thinking hard.

'Smaller and brighter is better' seems to be a popular motto everywhere. The third improvement is in an entirely different technology, of little importance to the lighting electrician, but very significant to stockists and wholesalers. Philips have radically re-designed their lamp packaging. The 'new-pillow' package is entirely paper and biodegradable. It fits into a multi-lamp display carton, also made of paper. It is smaller and cheaper and lighter so manufacturers and retailers' overheads are reduced. Hooray! They might even pass a little

on to the user if competition is fierce enough. Marketing, and the organisation of delivery of supplies to stockists is, of course, another essential factor in providing the customer with what is wanted, when it is wanted.

George Howells spent some time enthusing to me about vertical integration, continuation of commitment, automated warehousing, customer service levels, etc. and boasted of the factory's achievement in reaching 95% of delivery promises made on time. But I think that story belongs in a different specialist magazine.

### THE FUTURE

To conclude, what can we expect from the future? Philips are not raising any false hopes. Technically, incandescent lamp development has already explored and exploited every economically practicable avenue and nothing much other than a steady progress of minor improvement now seems possible. True, a lamp with a heat reflecting coating giving 50 lumens per watt instead of the normal 20 to 30 lm/W has been marketed in the USA but it is a linear double-ended halogen lamp and customers do not seem to be too enthusiastic.

I hear that patents exist to provide similar increased efficacy for single-ended lamps but, as-yet, nobody appears to be ready to try the idea on the market. Another possibility might involve 'embedded electronics' of the type used in compact fluorescent lamps. Perhaps these could be semi-conductor transformers hidden in the lamp cap so that low volt filaments can be used in mains voltage sockets with appreciable gains in robustness and efficacy. If Philips are pursuing this line they had nothing ready for show on my visit.

The Philips corporate motto, then - 'Let's Make Things Better' seems modestly appropriate and to be applauded, providing only that better value for the customer is near the top of the list.

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# SECOND TAKE

## John Watt's View from Beside the Camera

Having survived a rather emotional Christmas - during which a pudding flash-fire caused by an over-generous measure of Spanish brandy set fire to my mother-in-law's moustache, causing her to step on the cat, which shot up the tree, unfortunately opening up a hastily-taped joint in the lights, resulting in it being the only cat in Grantham with Afro fur - I have had cause to think philosophically about '96 and the empty diary. Being shut out in a cold porch focuses the mind wonderfully. (I only said, "Mother-in-law is the only woman I know with a grease-nipple on her tongue.")

So, it's resolution time again.

- Since the 9 x 16 aspect ratio is with us - mainly because a premium is paid by Channel 4 to producers who use it - you should remember to make all keys on talk shows profile spots, so that you can light one person at a time. There will always be two people in the shot, or at least one and two halves (unless they sit six feet apart) and you only want to see the one who is talking.

- Always carry an assortment of little sticky labels, which you have previously lent to your four-year-old child for practising joined-up writing. Then, when you come across equipment which hasn't been PAT tested, slap on a label before anyone spots it.

- Buy some extra-thick gardening gloves for focusing, and set doors on all the manufacturers' new 'compact' ranges. They get hot enough to make a rare steak out of the question, and will certainly weld your finger to the doors.

- Buy a Rolls Royce to impress clients, as they are always fascinated to know how you can afford such things in a low-tech trade like this.

- If desperate, change your name to Brian Pearce (but put in another phone line first).

It's a strange characteristic that architects, engineers, producers and directors all adopt an ostrich-like attitude to lighting - they stick their heads in the sand and hope that it will go away. It's a fairly fundamental rule that cameras need a bit of light to see by, preferably of the right colour. Someone once advised me to learn by others' mistakes; then, he said, you can go out and make original mistakes of your own. He was spot-on, but watching a documentary

about the beginnings of live television recently, it was interesting to see them walking into all the old traps: windows 22 floors up at Canary Wharf, mobile hand-held cameras, mobile presenters, not much lighting and no old hacks to sort it out.

I recently lit a competitive ice tournament, and as usual, late in the day, the producers decided that a few more lux were essential, the problem not having gone away. The brief was to lift the existing 400 lux horizontal average to 1200 lux vertical - no stands allowed, all cabling to be hidden. The rink was 90m x 40m and under seven metres high: all lamps to be suspended from existing steel work, didn't have enough power, and I was 500 miles from home across the channel. Skaters are a dedicated (and shapely) lot, and practice night and day, so on only two nights between 11pm and 6am were we actually allowed on the ice. I was reminded of the judge who awarded 10 points, and was informed by the senior man that they only give up to six. 'I know', said our man, 'but I'm giving them extra, no matter what you say - its damned slippery out there and they deserve it.'

Well, my crew deserved 10 points; it was slippery out there, and when the cherry picker was jacked down for more than five minutes, the jacks welded to the ice and had to be sledge-hammered off. Fundamental questions have to be addressed as at the beginning of every show you are faced with a mirror which thereafter, dependent on the weight of traffic upon it, can become a perfectly white diffuser.

Late decisions on a job of this size don't produce cheap solutions or even good ones; it's just do what you can in the time, and if you get it wrong, you won't be invited back. My head got bigger when I heard that the skaters 'loved' the lighting: I had been worried that glare from the necessarily low angles would be a real problem for them, so I asked why they liked it so much. It transpired I had lifted the temperature just enough to soften the ice and give them a better grip! Incidentally, Hush Puppies and thermal socks don't work at three in the morning - moon boots may, but not if they are in the cupboard at home.



Maybe I'll soon be known as the 'late' John Watt. My latest job is lighting a news set up, but the call came well after the format of the two shows has been established, the set designed and built (out of glass), and the decision taken that the existing lights (mainly, but not all, discharge) and a custom-built grid made for architectural track fittings, must be used. It's not quite where I would have chosen to start, but it's not without interest - especially as I find myself trying to sell fundamental ideas to young, inexperienced production people. I am not a teacher, so I have decided to let that wait until I know something about lighting. However, making a lash-up work can be more fun than leaving a cock-up in situ, and you may even get asked back for the next production.

Being involved in providing a television lighting man's input into the re-lighting of some rugby pitches, I have been a little daunted at the prospect of talking to proper illumination engineers, with their degrees in physics, computer programmes and laboratories. It's good to report that not only are they real human beings, but cope, albeit in a slightly more mathematical way, with exactly the same problems that we lesser mortals face. I was fascinated to learn that their computer programmes measure glare from the players' point of view. When I asked how a basic law was established, I was told that dozens of observers were sent out onto various pitches with clip boards and asked to access glare from 5m grid points on a marks out of 10 basis. Before my eyebrows came down (actually, eyebrows are very important when assessing glare, as any coarse lighting man knows), it was pointed out to me that these calculations assume the players line of sight is horizontal! 'What happens when the ball goes up in the air?' says I. 'Ah, well . . .' say they.

I was also heartened to discover that initial plotting of number of lamps and positions is done by humans, before the computer does the calculations and finds the low and high spots. Of course, computers are learning fast, and their experience/database grows.

So let this 'normal' month be a lesson to intending freelancers - you do what comes your way with charm, enthusiasm and as much skill as you can persuade the client you have. Whether you throw in a few jokes as well is up to you. The fact that you feel single dramas are really your forte is quite incidental. Unless you work at TV Centre, just say 'yes' and have a bash. The rewards are simple - your own coffee in your own office and Brubeck on the CD.



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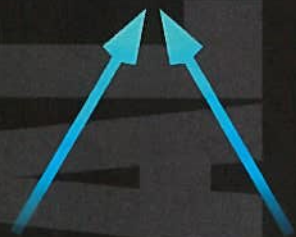


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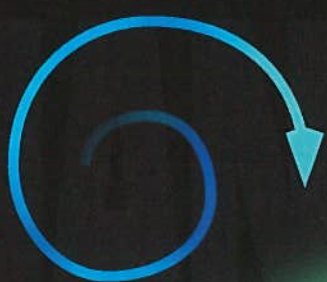


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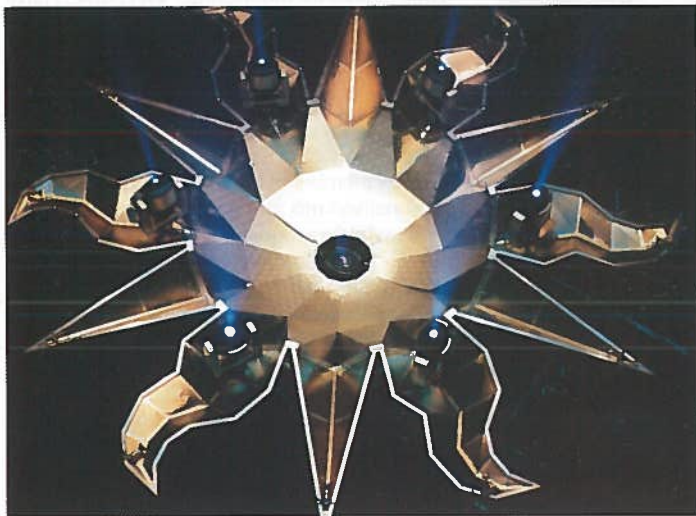


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# FAIRGROUND IN THE ROUND

Mark Cunningham joined the crew at Wembley Arena for Simply Red's Life tour



The sun effect flown above the smaller of the stages.



The stage as seen from the sound mixing area.

From both a visual and a sonic point of view, the new Simply Red concert production, which was unveiled to UK audiences in December, was a masterpiece. Governing most of the set were songs from the band's new album, *Life*, which may not immediately boast the same conviction as its best-selling predecessor, *Stars*. However, there is no doubting Mick Hucknall's ability to command a stage and convey intimacy with an audience, even in a large arena like Wembley.

Key to this was the configuration and relationship between the stage and lighting design, and the comprehensive Turbosound PA rig supplied by Britannia Row. Mark Fisher's stage set and Patrick Woodroffe's lighting theme evolved after analysis of Simply Red's 1991/92 *Stars* production, which featured the band performing on a central stage for half of the show, after which they moved to an end-on stage for the remainder.

The idea for *Life* was to develop the theme of two performance areas, while keeping the whole show inside the centre of the arena. The two stages - one larger than the other - are linked by a bridge which rises during the second half of the show (and, strangely, reminds one of a certain Monty Python scene). At the beginning of the set, the band performs from the smaller stage while Hucknall wanders freely over the bridge and jaunts to and from both stages. At around the halfway point in the programme, the Reds were reduced to the duo of Hucknall and mainstay keyboard player, Fritz McIntyre for *Wonderland*, after which the band returned to perform the rest of the set from the larger stage.

Patrick Woodroffe believed that if anyone could handle a crowd in that environment, it would be Mick Hucknall, who was celebrating his band's 10th anniversary at Wembley ("I've been called fat and ugly, but I'm still here!"). Woodroffe told me: "As a result of the stage design, Mick is much closer to more people for more of the time than on any other of their shows, even though he plays on three separate areas. No one is very far from him, which cannot be said in the case of end-on arena shows. This idea of two stages was developed with a bridge to link them, and the lighting system above them reflects the shape. It ends up as a very beautiful, sinuous 'snake', which

serves as floating scenery, as well as a lighting source."

Conventional lighting, along with Vari\*Lites and Icons, all ran from one Icon desk, manned by Mark Payne, whose other recent responsibilities included the Rod Stewart *In The Works* tour (L+SI, July 95), interestingly another in-the-round production. The entire stage area is lit from above by the large snake-like truss which carries VL5s, Icons and various architectural lighting elements inside the snake itself, including Molefay lights hidden behind custom-designed bulbous panels. Payne comments: "In essence, we have produced something of visual interest, rather than being purely a functional truss. Both the music and the lighting begin in a fairly laid-back fashion, and the lighting gradually rolls along from being neutral and soft, to extremely exciting and dynamic as the faster numbers are introduced. It all goes pretty mental on the last couple of songs and the Vari\*Lites and Icons really earn their keep!"

Pyro and flames were on stand-by at the three pre-Christmas Wembley shows, but will not be used until the band's return to home shores in January. Other effects such as a giant, moving, metallic sun suspended over the smaller of the two stages, were greeted with gasps from the crowd. The sun, which had VL6s attached internally, an Icon in the centre and Par 20s in several other places to light up architectural pieces, remained static until 'Wonderland', when it tilted backwards and

forwards. Another effect saved until 'Thrill Me', three-quarters of the way through the set, involved four telescopic lighting pods which rose from the large stage, surrounding the motorised drum riser, to create an instant high-tech look.

Audience lighting, particularly during the second half of the show, plays a major role. Payne adds: "Mick wanted everybody in the audience lit because there is normally a lot of participation on certain numbers, such as 'Holding Back The Years'. It just opens it all up and the audience becomes a kind of cyclorama - you are literally looking through the stage at a living backdrop."

## THE RIG

The Turbosound PA system, supplied by Britannia Row, featured a configuration of 124 flown Flashlight speakers, 46 underhangs and 24 sub-basses, powered by BSS EPC-760 and 780 amplifiers. Veteran front-of-house engineer, Robbie McGrath, says of the rig: "The Turbosound box itself is very powerful and sounds incredibly good, and it certainly suits Simply Red. It's very hard to lose the vocals in this box - it provides a great deal of clarity but you have to ensure that you get the angles of the hang right and use very little of them, then you'll maintain the clarity."

With the performance based wholly in the centre of the arena, the production team decided to split each venue into six tight stereo zones. The whole perimeter of the two stages was treated as one source.

"I wanted to take the rectangular space that the stages were in and feed the sound into six smaller areas of the auditorium, rather than have two separate systems. The throw on the speaker cabinets isn't as long as it would be if they were all at one end of the room, and the result is that it all sounds a bit more personal and comfortable. It will make these places sound and look a lot smaller and more intimate than they actually are."

In a situation where it was not possible to couple the bass bins at floor level, McGrath and his team resigned themselves to placing the



VL6s in action on the 'snake' above the stage.

bins around the stage, although this initially caused a few time alignment headaches. After considering TEF and Klark Teknik, McGrath chose the Turbosound LMS-700 version of the BSS Omnidrive to align the system, which he says has simplified the whole process. "We literally plug in the measurement information and tell it to knock the delays back by 20' or 3 metres or x amount of seconds. To calculate the delays between the speakers and the stage at central position, we used a tape measure, which is a very old-fashioned way for such a high tech situation.

"All the front speakers are delayed by 10' back into the stage. You have to give the impression that when you're looking at the stage, the drums are coming from the drummer and the vocals are coming from the vocalists, rather than somewhere else in the room."

In common with 1995's other main in-the-round production FOH engineer, Lars Brogaard, McGrath is a great advocate of the Midas XL4 console, and claims its level of automation is both sensible and practical. "It doesn't completely run the show at the touch of a button. I still have a lot of hands-on work to do here," he insists.

A totally automated desk would not suit a man who has experience of mixing in real time for nearly 25 years, but McGrath says the facility does help to set up ballpark audio scenes for introductions of songs - the efficacy of which was plainly noticeable at Wembley, where Simply Red thrilled the audience with a wide variety of musical styles - from soul and jazz, to reggae, house and pure pop.

"With a computer you need to adopt some pre-planning which does pay off in the long run. To be in the ballpark as soon as the band kicks into each number would be very difficult without automation. You have to be able to perceive the song's feel. With this it is possible to automatically go from a reggae number such as 'Hillside Avenue' into a slow soul ballad like 'Holding Back The Years'."

Extensive use of samples was clearly noticeable at Wembley, in the form of scratched loops, various percussion and brass ensembles, all programmed by the man in the pit, Merv Pearson. This 'keep music live' campaigner would normally be horrified at the very thought of it all, but in this instance the samples were used tastefully without overshadowing the human efforts from the stage.

One of two Yamaha ProMix 01 mixers was set aside for the control of these samples which amounted to as many as 14 on the show's closing number, 'Fairground'. An additional ProMix was responsible for various processing from Eventide H3000 harmonisers, a Lexicon 480, PCM-70s for the saxophone and drums, an SPX-1000 for drums to electronic-driven vocal delays.

#### WIRELESS OPTION

Mark Fisher's stage design dictated that Mick Hucknall's normally-favoured Shure wired



Mick Hucknall performs at Wembley Arena.

mics could not be used. Wireless was the only option and the AKG WMS-900, supplied by Hand Held Audio, came out tops during extensive evaluations.

Eight UHF channels were in use for Hucknall and his two female backing vocalists on WMS-900s, an AKG C409 clip-on Micromic for Ian Kirkham, the saxophonist and a Samson transmitter for guitarist Heitor Pereira.

RF problems proved troublesome during the soundcheck I witnessed on the second of the three Wembley dates. This, McGrath explained, was attributed to the Wembley stewards arriving and switching on their walkie-talkies! The problem, however, was cured by showtime when frequencies were switched to a clear band. The previous night had seen temperatures drop significantly which McGrath admits led to quite a brittle sound.

Bringing Hucknall's soulful vocals out of the mix and into the laps of the audience is a specialist challenge which McGrath knows only too well. It is even more difficult than normal at Wembley Arena. The road to perfection, he explains, starts by sending the mic signal through a Focusrite, after which the vocal signal is sent to a channel on the Midas XL4.

"I use a Behringer Combinator which compresses four different sets of frequencies," says McGrath. "So if there is a little instance of 3k peak you can take it out quite easily. The vocal then passes through the Summit DCL-200 tube limiter, and by the time it's gone through all that and then into the Midas EQ, it sounds big and powerful."

Conventional microphone techniques were applied to deliver crisp, punchy sounds from Velroy Bailey's Pearl drum kit, with AKG C414s as overheads and other AKGs on hi-hats. In addition, an M88 was used in the bass drum and Shure 98 mics on toms.

McGrath then used a Behringer Ultrafex across the kit sub groups to expand the low and high ends. "Some of the drum sounds need a very rough, obvious reverb," he added, "especially on the reggae numbers, whereas other numbers require a lushness. So I have both a Yamaha SPX-1000 to provide the roughness and a Lexicon PCM-70 for the latter. Overall, I use Behringer gates and compressors because I find them very clean when you run a signal path through them."

#### MONITORS

Monitor engineer, Steve 'Flaky' Flewin is, like McGrath, using a 40-channel Midas XL4 with

generous outboard including Klark Teknik graphics and Behringer gates and compressors. The main difference between his and McGrath's console set-up is that the on-board automation options are not exploited to the same degree for monitoring. "Of course, I have the mixes all programmed in," says Flewin. "But we are still not quite decided on things yet, especially as we are only a few dates into the tour. I'd imagine that by the eighth date, we would be happy enough to rely on automated programmes."

Every member of the band receives their own personalised mix and more besides. This leads to Flewin's responsibility over 20 separate mixes - 16 monos and four stereos. "Operating like this eats up the channels in no time, so I am working flat out across the desk. With the XL3 you could get an additional 16-channel stretch to spill on to, but you can't get the same for the XL4 - yet. That would be great because, let's face it, you can never have enough channels!"

Rod Stewart's recent in-the-round production virtually dictated the use of in-ear monitoring and a wedge-free stage. Not so with Hucknall and co whose stage is currently littered with boxes. Despite the band's purchase of a Radio Station system prior to the tour, the decision was made to be 'earless'. But why?

"Mick and Fritz, who is static throughout the show, weren't going to go in-ear but the others in the band were originally," explained Flewin. "We just didn't have enough time to get used to it in production rehearsals and it is quite an alien world to begin with."

McGrath adds: "They are the type of band that for years have been grooving off each other and I think the trouble they've found with the in-ears is that it all feels too isolating to them. They also like to hear the whole sound of the room."

Flewin takes up the story again: "Because we were still so unsure about the mode of monitoring, we never got around to actually designing a monitor system as such. I had to try out a variety of wedges before I settled on what we have here."

Three mixes are sent through six Turbosound 1 x 12" cabinets fixed to the truss, pointing at the stage, while on the bridge there are six 2 x 15"s, plus another 2 x 15" for Fritz McIntyre on each stage. Heitor Pereira has a stereo mix through two 1 x 15"s and drummer Velroy Bailey has a 1 x 18" Turbosound bass bin and two 1 x 15" wedges on a stereo mix on both stages. Flewin expands: "You can punch different musicians into others' mixes and with 20 mixes going on simultaneously, there aren't any dead spots."

"The only problem is when one member moves into someone else's space. Heitor has his guitar rig set up on the big stage and anyone standing near there is obviously going to hear a lot more guitar. I personally monitor through a 2 x 15" Turbosound wedge which is the same cab as that used on the bridge and drums, and I also have a Meyer Sound UM1 wedge with a switching device to listen between them."

For general front of stage perimeter monitoring, Flewin has opted for 16 UM1s: "The UM1 works very well with vocals because it delivers a bright sound which this group needs. I had previously used the Turbosound 1 x 15" on stage which doesn't sound as sweet because you have to pull too much out of them. If you want it loud on stage, the Turbosound monitors are fine, but this group doesn't need volume - they prefer clarity."

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# ADRIFT IN THE STALLS

This month's trick question is, which is the most important of the senses when you're at a theatre performance? All you design chappies and chapesses will tell me it's sight, and I'd have said the same until a recent bout of very mucky 'flu left me seriously deaf in both ears. I went along to the Royal Court to see the new Timberlake Wertenbaker play, *Break of Day*, taking with me someone who could hear properly. We sat in the second row, on the edge, so that sightlines weren't in any case ideal. Up went the lights, on came the actors and for me - nothing at all happened.

It was eerie. I had no idea whether they were happy or sad, clever or dim, comfortable or uneasy. Julian McGowan's set looked interesting enough, with its garden at the back and good solid flats on both sides, but it was only because of the foliage that I knew we were outdoors. Johanna Town's lighting didn't tell me enough. Nor did I have any real feeling for whether the acting was realistic or artificial. One or two voices came through occasionally, but they sounded distorted, out of this world.

Fortunately, the Court has a policy of offering scripts for their shows, so I got out my Faber text, tried not to rustle it too much, and settled down to read it, glancing up now and again to see whether the cast had reached the bit I'd got to. We kept in pretty good sync. In the second half, I was even able to observe that, yes, the lighting states were now telling us that scenes were taking place indoors.

Now the weird thing is that I rather enjoyed Timberlake Wertenbaker's end-of-century spin on Chekhov's *Three Sisters* in this hand-me-down form. On the page, statements were being made and relationships explained that seemed interesting and involving. It's a very broad-canvas play, which covers a whole agenda of topics that should be of concern to us all: the collapse of human values, the effect of women's new perception of themselves on their attitudes to motherhood, the moral bankruptcy of Eastern - and Western - Europe. As I read some of the speeches I started to think 'Gee, I wish I'd written this'. Yet when I read my fellow critics' reviews, I hardly recognised the piece I'd seen and they'd heard. 'Shallow', 'badly acted', 'sententious' and 'boring' were some of the kinder descriptions. When I

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**"... I got out my Faber text, tried not to rustle it too much, and settled down to read it, glancing up now and again to see if the cast had reached the bit I'd got to. We kept in pretty good sync."**

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**Aisling O'Sullivan as Jessica and Henry Goodman as Sigmund Freud in the revival of Terry Johnson's *Hysteria*.** photo: Ivan Kyncl

can hear again, I want to go back and try to discover why what seems such a good play on the page came over so badly on the stage.

Is it the director's fault, or that of the actors? Or maybe we should have been given some better clues by the set and lighting. One element that I can't judge at all yet is the script's call, at regular intervals, for 'song'. No words were given, and I heard nothing of what the normally exquisite Maria Freedman sang at these moments. The reviews suggest I didn't miss much, but since the songs were written by Jeremy Sams I find this hard to credit.

For my next outing, I tried a different tack. I'd actually been sent the text of David Harrower's fascinating *Knives in Hens* in advance, so I could read it a couple of times before going to the first night at the Bush and hope to have a good idea of what the actors were saying when they mimed the text for me that evening. This worked a lot better than sitting buried in the script - I could observe some very moving and committed acting from the three cast members and I could take a slightly remote pleasure in the music provided on-stage by Martin Bennett, using traditional fiddle and flute, as well as synthesised sound. I was better placed to appreciate Mark Leese's very simple platform set and Bevis Evans-Teush's subdued, sympathetic lighting. Yet even here, my appreciation of a fine play was hampered by the fact that it is very much a play about language: in it an inarticulate country woman is seduced from her ploughman husband by the reading and writing talents of the local miller, and as she finds the ability to express herself in the same way the play leads to a tragic denouement. The spare words of the short text have a poetic intensity, and if you can't fully register how they're being delivered, you're in trouble.

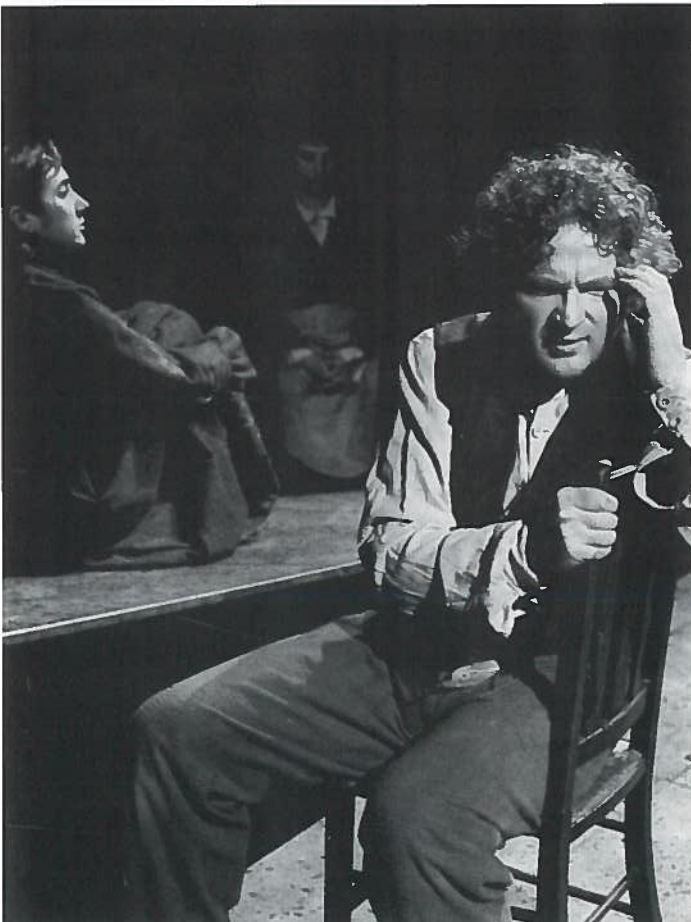
By the time of my next theatre visit, a little more sound was percolating through the fuzz in my head, and I took the risk of watching the revival of Terry Johnson's *Hysteria* from the back of the Duke of York's circle. The gain here came from seeing Mark Thompson's set from a very different perspective from that of my original visit to it at the Royal Court. The moment towards the end of the second act when Freud's four-square (well, fashionably foreshortened) Hampstead consulting room is converted before your eyes into a crazy Dali painting - cued by the analyst picking up his telephone to find he has a lobster in his hand - is far more impressive if you can see the whole stage in upheaval, with walls expanding or flying out, the ceiling lamp turning into an enormous eye, and various other glorious lighting and special effects (Rick Fisher) heightened by a heavy soundtrack (Paul Arditti).

I didn't need any text for *Hysteria*, though there were some quieter moments when voices didn't quite reach me up at the back. However, there was still the strong feeling of getting much less than a full performance. The quality of sound I was receiving was decidedly substandard, and so therefore was the quality of my enjoyment of one of the best plays to be written in the last few years.

All in all, it's been quite a learning experience, though not one I'd recommend you to try at home. My heart goes out to those whose hearing is permanently impaired. My valuation of the work of sound designers has gone up a great deal. And after three weeks I still can't hear properly.

**Ian Herbert**

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



***Knives in Hens* at the Bush Theatre.**

photo: Mark Douet

# ON TOUR

by STEVE MOLES

AND PRODUCTION NEWS

## David Bowie

Sheffield Arena

LD: Roy Bennet

SD: Steve Guest

David Bowie has always played the non-conformist card - for the first 20 years of his career highly successfully - but of late, he's received a less than favourable press, and this has been reflected in his record sales. These days, he often attracts more attention for what he does and says in the art world, than for his musical output. His stint of almost five years in the relative obscurity of Tin Machine has, in total, had less impact than any one of his earlier albums. History may be kinder to this period in his career, but it's a moot point.

The current tour, however, sees him firmly back in front: that is, *his* name, rather than the *band's*, is top of the billing. He has also elected to tour with a double headline show, with the Nine Inch Nails in the US, and with Morrissey in the UK. That the Morrissey partnership has been an absolute catastrophe has been well reported, but make no mistake, the only reflection this has upon David Bowie is in the fact that he made the choice of co-star in the first place. There are easier ways to say 'no thanks'.

### LIGHTING

It seems that lighting designer Roy Bennet is never at a loss to produce a thought-provoking show. The setting is a pastiche of an artist's workshop, the stage is awash with calico - the rear cyc', Austrian drape and floor cloth are all of this material, which has been thoughtfully flecked with paint - how pleasant to see a stage dressed in this soft creamy colour rather than the more usual grey.

Though generally open, with little in the way of risers, the stage does contain some strange and unusual objects - life models wrapped in cloth with just a stray limb protruding are suspended from the rig or placed beside a guitarist adding to the studio feel. With the presentational setting given to him by David Bowie - the studio theme and much of the contents spring from this man's imagination - Roy's options for expression are sublime.

To give some idea of the scope, the LSD lighting rig contains some 23 high-speed motors, just to lower in elements both scenic and lighting during the show. Curious metal hemispheres some three feet in diameter are rendered in beaten copper and contain five ellipsoidals arranged like the dots on a dice. Stripped of their snouts and lenses, the light floods out from them in a hazy blob (never happy with the sluggish dimming characteristics of a standard 5kW Fresnel, Roy has been dabbling with several ideas for giving a strong concentration of light from a single coherent source for some time now.)

Five Kino Floods also double as both light source and set piece; the big panels are lowered in and made to dance for 'Night-flights', lending an alien look to an already disturbing song. In keeping with his search for new light, Roy has also discovered the Diversitronics Model 3000 strobe. Framed in pairs and fitted with a 5kW size ColorMag, this powerful unit takes two DMX signals to control both rate of flash and intensity. Strobes are a frequent feature of a Bennet show,



David Bowie - challenging his fans with an uncompromising performance.

and the extra control possible with these particular units gives more dimension to their effectiveness. The rig also contains some 23 VL 4s - 16 in the air and seven on the floor - and a similar displacement of 29 Icons.

Gary Westcott, a familiar face on a Roy Bennet tour, runs the entire show from the Icon board with the Artisan slaved from it; even the two on-stage truss spots (Reich & Vogels) are doused and colour-changed from front of house. The lighting is, to say the least, peculiar, coming from strange sources and strange angles onto some odd

lot of air, and gives a sensation of great power, especially around the middle and low end, but it's well compressed and, configured as it was, gives a certain detached impression the further from stage you listen.

Steve is mixing from a Yamaha PM4000, a choice forced upon him by the need for maximising both inputs and outputs, but a choice he is quite comfortable with. He has a busy time working many effects in throughout the show; this is a virtuoso band with playing techniques not to be missed, so he is fortunate that the stage sound presents him with little in the way of problems.

The entire band is monitored through the In Ear system, Bowie having purchased six Radio Stations and two Out Stations. The absence of a 10kW monitor rig cluttering up the stage sound gave Steve the option of experimenting a bit with different microphones during rehearsals: "We started with a Shure Beta 58. I like it because it gives a more masculine sound to his voice which is bright in the low mids. Then we tried an AKG - a 5600 I think it was -

and then a Beta 87 for a bit of high end. In the end, we went back to the 58 which is great: it's a mic' that holds up well on tour and it's available everywhere."

Steve uses a Meyer CP10 parametric EQ for vocal processing and a Summit T100 leveller, which are also used by Mike Prowda on the monitor system. Mike also mixes from a PM4000 and finds, with 22 channels of full parametric on board, he can do all the EQ'ing he needs at the console. However, he would like to see a gate and compressor on every channel for ease of operation. (The old size and cost dilemma once again!)

This is a demanding show and not just for the production, though both Gary and Steve have a busy time out front, but also for the audience. David Bowie has set himself exacting standards. If you want to hear his greatest hits you'll have to listen to the albums. If you care to sample what he has to offer today, come along, but don't expect an easy time. This uncompromising artiste does not proffer dead cows in fish tanks, but he does demand that we make some effort. Maybe not a bad thing in an era of instant gratification?

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***"The colours are unusual - your eyes are rarely presented with the same look. For most of the time, this is sumptuous and entertaining, but at moments it can seem relentless."***

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targets. The colours are both unusual and unusually mixed. For two hours your eyes are rarely presented with the same look. For most of the time, this is sumptuous and entertaining, but at moments it can seem relentless. This, however, is intentional and is well matched to the music.

### SOUND

The PA system for the tour comes from Maryland Sound and is run by Steve Guest from the US who has already been in the UK this year with Janet Jackson. With 23 cabinets flown per side and five on the floor, there was never any danger of not being able to fill the further reaches of the Sheffield Arena. Having said that, no delay cluster was deployed. Required? Maybe. The mix position was shifted unnaturally to the back of the venue, almost to the hockey dasher some 150 feet from stage. (Due to Morrissey's non-appearance, two shows were combined, creating a greater than usual top dollar ticket allocation to squeeze onto the floor).

At this distance, the sound was still as rich and forceful as at 100 feet closer. The system shifts a

## The Human League

Sheffield City Hall

LD: Jonathan Smeeton

SD: Robin Stillings

The last time I saw the Human League was in Reykjavik in 1982. The band were winding up a huge world tour that had seen them visit Toronto, Tokyo and Iceland as a nice little globe-spanning back-to-back threesome to finish the tour. They were at a pinnacle then - an English pop band with a reputation as style icons, set four square in the early eighties dance phase. Some 13 years later, after some poorly-received albums and a few barren years, they are re-launching themselves.

Unlike so many tours of this stature this season, the band are taking it very seriously. Five days of production rehearsals saw them arrive with their set already fully rehearsed and thus, when they loaded out for their first show, the production was ready to roll with a fully-programmed light show and all sound and stage gear problems solved.

### SOUND

The PA is designed and supplied by Roadstar, and is their own in-house Q System, based around JBL components with 12", 2" and 1" drivers in the mid-high cabinets, and two 15" drivers in the bass. The system is driven from Crown amps - VZ5000, 2400 and 1200. For the City Hall, sound engineer Robin Stillings had six flown cabinets each side; four at the upper balcony level, two at the lower. Both types of cabinet were flown, and with a band so heavily dependent on synthesisers, it was noticeable how well the aerial bass cabinets performed in the upper reaches of the room. The floor stack comprised another 10 cabinets per side, so all in all, this was a large physical presence for a relatively small hall, and certainly more boxes than are usually seen here.

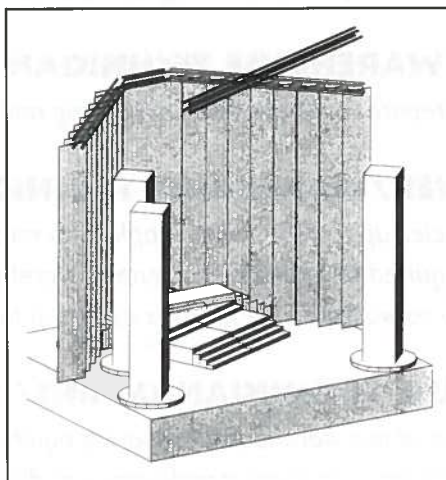
The general sound of the music is short, almost breathless, with lots of attack, but unsustainable. For this reason, the pressure levels always felt high but no lasting de-sensitising occurred aurally. It's a slightly unnatural way of playing, but it does suit the pop idiom. Robin mixes from a 52-channel Crest VX, and all but four of the stage sends are direct injection, the exceptions being three radio 87s for the vocalists and a 58 on the guitar.

Although this seems an almost ideal set-up, the stage sound still presents Robin with some problems: "It's easy because there's no feedback from the stage, but the sound is very dynamic. The variations between the keyboards is huge, especially the older ones. There's also nine channels of very different samples from the MIDI rack and another eight channels of drum sounds from a Mac.

"The one good thing is that there are two of everything, as back-up. We've put a multi-pin connector on every rack, so if any component goes wrong during the show, the backline guy can switch the sound multi' to the back-up rack and



The Human League - will they survive the nineties?



The left-hand isometric section of the set designed by Jonathan Smeeton.

then fix the first problem without fear of interference with the other components."

Duncan Bravister is on monitors, again using a Crest 52-channel desk, this time a Century, mixing down into 20. The bi-amped wedges are also Roadstar's own in-house design, and the Crown amps driving them have PIP IQ cards with variable crossover points and compressors built in. Despite Robin's best efforts, there is no concealing the inadequacy of the two female backing vocalists.

Philip Oakey also had some rough, flat moments, but this was probably more down to over-exertion on his home turf than lack of ability. His voice is one of the main assets of the band and gives them their distinctive sound.

### LIGHTING

Both lighting (CPL and Vari-Lite) and set is an integrated design from the hand of Jonathan Smeeton. Monochrome is the order of the day - a simple black bordered V-shaped truss bounds the upstage, with black tabs hung from it. Hidden behind are a set of white vertically hung louvred cloth panels (all soft goods are from Dave Perry),

with a VL5 tucked between each, making a total of 18 in all. These rear drapes make for a triangular performance area and the upstage centre ground is filled by a low, flat pyramid of stepped risers. Built by Brilliant Stages, the risers are of modular design and part of Brilliant's in-house rental stock.

The front stage is flat and open for Philip Oakey and the two female vocalists. Everything - stage floor, risers, keyboard and microphone stands, is white. The most striking aspect of the set is three towers arrayed asymmetrically about the stage. Based upon electric self-climbing Genie Super Lifts, the towers are dressed by a concertina of square aluminium hoops linked by white filled cloth. (All metal work for these and the louvres is by Ian Whitaker.)

The towers are repositioned at several different heights throughout the performance, but they are at their most visually effective for the opening three numbers, when they stand stark against the black tabs. Each tower has a pair of VL2Cs top and bottom, used to light the tower. Thus, even once the tabs open to reveal the white louvres they still stand out against this backdrop.

Including the front truss (24 Pars and a further four VL2Cs), the whole rig is trimmed high. With such a low riser system, two distinct lighting areas emerge; the band area and the space above them. Where the towers work well is in pulling attention down to the stage when they are lowered. The whole show is run from an Artisan, operated by Liz Berry, who worked with Jonathan last year on Bryan Ferry.

The colours used on the set and louvres provide much of the definition between the two playing areas. On the towers, the VL2Cs palette is in the pastel range, with a slightly smoky hint to them - what Jonathan calls his 'ice-cream colours'. The VL5s tend to the primaries - the two different qualities of light pulling and pushing against one another. For one of the band's stronger songs, 'Mirror Man', a ripple of rainbow colours was played down the louvres - not just red to orange to yellow - but running through four distinct shades in each colour, producing a quite seductive effect. The Pars, plus the three Lycian Starklites in the house, did most of the practical work of lighting the band; the VLs were almost exclusively for effect. The band are rather vacuous performers - even the vocalists dance with their feet seemingly nailed to the floor, so the emphasis on a light show, rather than a band show, was not inappropriate.

The revue in the Independent of the tour's first show in Portsmouth nailed them as "... a rather tuneless bunch", and so they are. But they make no bones about this, apologising to the crowd after the first song that they would make mistakes. They also have an endearing humility and are without pretension, openly confessing to their simple pop group origins.

Whether this is enough to carry them forward second time around remains to be seen.



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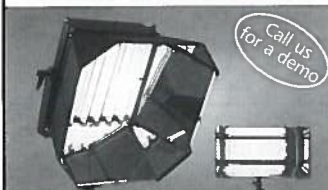
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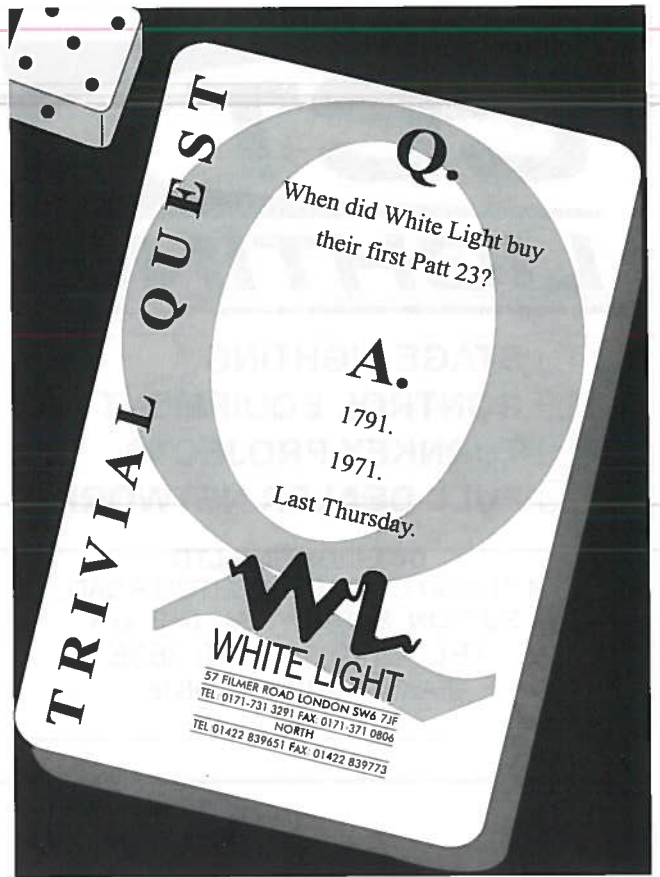
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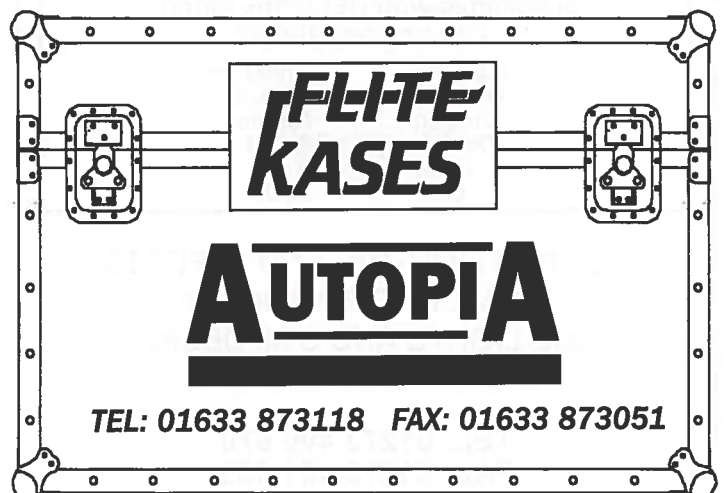
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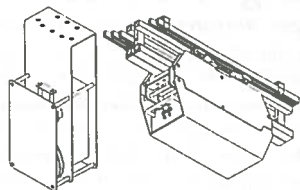
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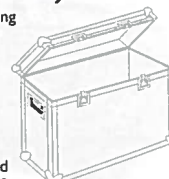
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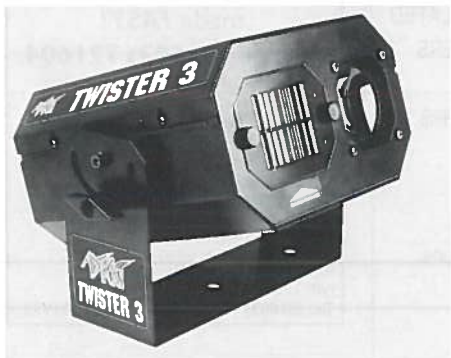
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# EQUIPMENT NEWS

## Abstract's Twister III



Abstract have introduced the Twister III lighting effect, which includes 15 pure dichroic colours, plus white, together with a 100W dichroic lamp. The Twister III emulates 20 laser-like beams that change colour and direction to the beat of the music, while switchable electronics allow total user control of the effects.

For further information contact Abstract in Leicester, telephone 0116-278 8078.

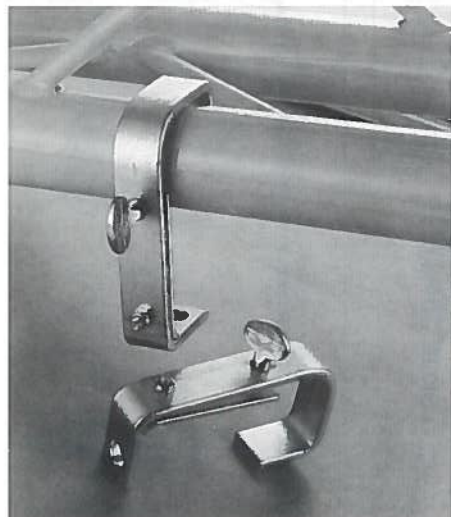
## BSS Parametric

The FCS-916 Preamplifier Parametric EQ from BSS features a wide-ranging, overlapping EQ and very narrow notch filter. The unit has six filters (each with independent in/out switching and LED indication), two sweepable high/low pass filters and a four-band fully parametric EQ section.

On the input side, the unit includes a high-performance discrete microphone pre-amp with the facility for phantom power.

For further information, contact BSS in Potters Bar, telephone (01707) 660667.

## Super Clamp



Based on a standard 50mm (two inch) theatrical hook clamp, the new Super Clamp from Powerdrive has a moving lock plate that prevents damage to trussing if the clamp is over-tightened. This is particularly useful in situations where the surface of the truss has been powder-coated.

A further feature of the clamp is that it provides a positive automatic 90 degree lock off, even when fitted using only one hand.

For further details contact Cerebrum Lighting in New Malden, telephone 0181-949 3171

## Allen & Heath Launch GL3000

Allen & Heath has launched the GL3000, an eight buss multi-functional mixing console for live performance, theatre and club applications, which will be unveiled for the first time at the 'Live' Show in London on January 15th.

The GL3000 is available in 16, 24, 32, and 40-channel configurations and features dual-role, dual-function capabilities, incorporating SYS-LINK technology. It also joins its stable-mate, the GL4 in its adoption of dual-mic stereo inputs.

The GL3000 can be used for FOH applications providing the engineer with up to eight subgroups to LR; eight aux sends, all on individual controls; up to a max of eight output feeds on fader control and one output feed on rotary pot (mono sum). Used for on-stage monitoring, the GL3000 provides eight independent monitor mixes with full signal patch facilities, and independent stereo mix for stage side fills or in-ear monitors, two alternative mixes using the matrix outputs and channel routing balance, and four further level outputs derived from similar mixes.

In dual-mode format (expected to be the most common application) the GL3000 offers eight subgroups for FOH, four with balanced XLR outputs and inset points, four monitor sends with balanced XLR outputs and inset points, four FX sends with ground compensated outputs, two stereo returns that can be used for external inputs, two mono matrix outputs on ground compensated jacks and a mono (LR) sum with balanced XLR output.

For further information contact Harman Audio in Borehamwood, telephone 0181-207 5050.

## Total Fab Stagemaker

Total Fabrications Ltd, official distributors of Verlinde products in the UK, have announced the launch of the Stagemaker Li10 chain hoist.

The Stagemaker Li10 has a load capacity of one ton, and has a totally enclosed Class F hoisting motor. Other features include a built-in weight overload limiting device, adjustable upper and lower limit switches, low voltage control, and a chain bag with a 130ft capacity. The compact size of the Stagemaker also makes it easy to transport and handle.

For further details contact Total Fabrications in Birmingham, telephone 0121-772 5234.

## Le Maitre on the Scent

Le Maitre have now completed trials of their new aroma therapy range of essential oils for use in the Haze mode of the G300 smoke machine.

The range includes five oils: Relax, Oasis, Wake Up!, Oriental Spice and Fresh Air. The oils are 100 per cent natural and are now available.

For further information contact Le Maitre in Mitcham, telephone 0181-646 1955.

## SFX Range from SR

SFX, from Stage Research Inc, is a software application designed specifically for theatrical playback of sound effects and music. On-screen, SFX provides the user with a number of windows. The Cues window contains the cue list for the currently loaded show. Here, fully descriptive sound effects are displayed in cue list form. Other windows on the desktop provide the user with act, scene, page information, cue notes, and cue execution status.

By hitting the Go! button window, the operator executes each cue immediately and in sequence. Additional features, including MIDI triggering and special cues such as Watt and Autofollow, contribute to make SFX a robust playback system which the company claim will perform consistently in even the most demanding of situations.

Built upon the SFX playback engine, Sound Array provides users with an alternate user-interface. Four banks, with a virtually unlimited number of buttons in each, can be loaded with up to four SFX created 'shows'. Each bank can then be optionally overridden to playback out a specific sound card.

SFX Time Code is a stand-alone application that reads MIDI and SMPTE Time Code, as well as real computer time, and feeds it to SFX whose cues can be set to trigger from time code. SFX Time Code will also generate MIDI Time Code to be output directly to SFX or an external device.

SFX KeyPlay maps keys on a keyboard to sound effects - striking a key on the keyboard will play the corresponding sound effect. SFX KeyPlay can also be triggered by external MIDI commands. All applications run on a decent 486 or Pentium PC with Microsoft Windows or Windows 95. Single or multiple Windows-compatible sound cards are also necessary.

For further information, contact Stage Research in Cleveland, Ohio, telephone +1 (800) 929 1708.

## Osram Stay Cool

Osram has launched a new range of tungsten halogen sealed beam reflector lamps which can be fitted into many existing luminaires. 20 and 30 lamps have reduced UV (UV Stop) to protect those extra sensitive displays such as paintings and fabrics. Both 20 lamps in 50W and 30 lamps in 75W can be supplied with either aluminised or dichroic coated reflectors. The dichroic coating provides heat reduction in the beam for heat sensitive display lamp applications.

For further details contact Osram in Wembley on 0181-901 1363.

## Dimmers from Silicon

Silicon Controls of Belgium has introduced a range of new dimmers which, they claim, combat problems commonly encountered in transistor-based dimmers, such as inductive load control and temperature rise.

Features of the 1M6, 1M12 and 1M16 include chokeless operation, short-circuit resistance, internal electronic protection, automatic load sensing and synchronisation, phase independent power supply, automatic load-adapting start speed, noise suppression to EN55022 Class B and CE marking.

For further information, contact Silicon Controls in Belgium, telephone +32 9386 8255.



## Jands Refinement

An opto-isolated DMX output option now gives users of Jand's consoles built-in protection when controlling fixtures with a fault potential of sending mains voltage to the control line. A new disk drive is also available, allowing show storage for the Event and ESP II consoles. The DMX Opto Output and the Floppy Drive will fit directly into all Event, ESP II and Jands-Hog consoles.

For further information, contact AC Lighting on (01494) 446000.

## Varicurve Windows

BSS's Varicurve equaliser/ analyser system now has two methods of remote control.

As well as the dedicated FPC-900 remote controller, operators can now use a PC running Windows to control any Varicurve unit via Soundbench, an easy-to-use graphical interface. Users can adjust EQ parameters by entering numerical values or using the nudge buttons.

Contractors will appreciate the security this provides. For example, a Varicurve FCS-920 Slaves system may be installed and set-up with a portable PC, then when the PC is removed no unauthorised personnel have access to change the settings.

For details contact BSS Audio in Potters Bar, telephone (01707) 660667.

## QSC Powerlights

QSC have extended the Powerlight series of amplifiers. The PL4.0 is the latest in the ultra lightweight stable, weighing in at under 30lbs and delivering 2kW into 2 ohms. The amp, which is undergoing road trials in the USA will reach our shores in March 1996.

For further details call HW International in London, tel 0181-808 2222.

## Feedback Finder

Peavey has introduced its new automatic Feedback Locating System - FLS. The system allows control of feedback in PA and monitor systems. It features an array of LEDs, one above each of the graphic EQ's sliders, which are automatically illuminated the moment feedback occurs on a particular frequency.

If a feedback occurs on a frequency between two sliders, two LEDs will light with variations in intensity to indicate which frequency the feedback is nearest to. When an intermittent feedback occurs, the appropriate LED will stay illuminated for five seconds, allowing the operator time to trace the feedback. The FLS can also indicate concurrent feedbacks, by lighting two LEDs, as well as automatically adjusting sensitivity levels to compensate for variations in input signal strength.

For further information, contact Peavey in Corby, telephone (01536) 747222.

## Master Amps

The two latest power amplifiers from Studiomaster are now available in the UK and Europe. The 700D (350W per channel) and the 1200D (600W per channel) are both housed in 16 gauge steel, 2U rack-mount chassis.

Both amplifiers are equipped with AMCS (amplifier management control system) which includes signal limited, thermal and load sensing fan cooling, electronically gated power stage and crowbar speaker protection.

For further information, contact Studiomaster in Luton, telephone (01582) 570370.

## The CEEP Connection

CEEP series 92 multipin circular connectors are housed in a one-piece single cast aluminium shell construction which ensures consistent performance under the most hostile conditions and extreme temperatures, according to CEEP. Resistance to water is up to IP67, or greater, on request, and the connectors are fully compatible with other manufacturers' products.

For further information contact CEEP Limited in Haslemere, telephone (01428) 661515.

## Hi-Spec Four Tracker



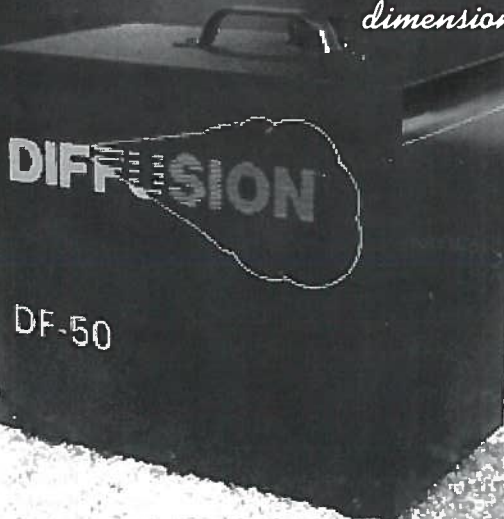
Yamaha's MT8X eight-track cassette multitrack recorder is now available in four-track format, replacing the MT120 and 120S machines. The new machine retains the easy-to-use interface, while offering improved musical production capabilities.

The MT4X provides a comprehensive and highly flexible mixer section with three-band EQ on every channel and dual aux sends with stereo returns.

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

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## Robert Halliday talks to Lighting designer Richard Pilbrow

OK, picture the scene. You're walking quietly along the road thinking about nothing in particular. Suddenly the phone rings, and a voice asks whether you're available the following weekend to work on a show. You can't do it, but ask politely who's lighting it. It turns out to be lighting God, the man whose work was the inspiration that got you into theatre in the first place. What do you do?

This was my dilemma last September when approached about the moving light control super-session being held during the PLASA show. I remained calm, and said again that I couldn't help. I then spent the next two days kicking myself. It isn't often that you get to meet God, especially now that he lives in America!

But I was going to the PLASA show anyway, and decided that I had to meet the man. And such was the charm and gentle persuasiveness of Richard Pilbrow that two days, one stolen lighting desk (see L+SI October's news pages!) and a successful seminar later, I was still there. I have a feeling that this is how Richard has achieved all that he has over his long career.

He will approach people with a steely determination that his way of doing something is right, even if it has never been done that way before, then will charm them into doing it that way. It isn't the easy way through life, it's the pioneer's way.

That way has seen him reject the 'sensible' careers suggested by his father for one in theatre, reject the then-conventional techniques for illuminating shows from rows of overhead flood battens, reject the near-monopoly of Strand Electric to establish an alternative lighting hire company, and, in the process, pioneer just about every aspect of how lighting is now 'done' in this country. Not entirely on his own, of course, but by trusting a team of people who are now some of the biggest names in lighting. They learnt through hands-on experience: in the early days of Theatre Projects everyone would be involved in a project from designing it right through to cleaning and pre-rigging the lamps. Today's approach, where designers often don't get near the equipment, concerns him, since he feels that the hands-on approach is the only way to really learn about what a lantern can do.

The vast experience he and his company built up just by getting on and doing shows soon took them beyond just lighting; the theatre building boom of the 60s and 70s saw the

company become active as theatre consultants, not through any grand plan, but just because someone had to be there to explain the theatre peoples' requirements to the architects.

"There'd been a long gap in theatre building, which meant that no-one really understood how theatres worked. This led to some strange things, such as going round the West End theatres with Olivier, measuring the distance to the back seating as he recited speeches to work out what the optimum size for an auditorium was!"

TP always strove not merely to recreate old working methods, but to improve them through technology such as the Lightboard lighting control, or the drum revolve in the National's Olivier auditorium. They were hampered by the usual British reluctance to spend proper amounts of money on decent engineering, but the concepts were right: despite advances in automation there is still no system that could replace the power flying system in the Olivier, engineered by Richard



Man of ideas - Richard Pilbrow.

design and moved Theatre Projects Consultants to America. "That just felt like the right thing to do - America just seemed to have so much more energy and opportunity than Britain under Mrs Thatcher," he recalls.

His fascination with technology continued: he is now a Macintosh user, an electronic-mail fan and, in his return to lighting design following too long an absence, a large-scale moving light user on productions such as Showboat and Busker Alley.

The change now, though, is that he has a stronger fascination with people. He used to strive for technically perfect theatres, but now admits: "We probably ruined the acoustics of the Lyttleton

theatre by putting in far too many lighting bridges."

TPC now try to go beyond just specifying technical equipment, working to improve the relationship between performers and audience wherever possible. This change occurred after Pilbrow realised that though modern theatres had excellent sightlines, they didn't actually generate the sense of excitement from their audiences that he'd felt in old West End houses and rediscovered during TP's refurbishment of the Nottingham Theatre Royal.

The same person-led approach will be found in the long-awaited new edition of his book, Stage Lighting, which, provided he managed to meet his Christmas deadlines, should be with us before the summer. The old version covered the art and technology of lighting. "For the new one, we also wanted to look at the people working in lighting, so we interviewed lots of lighting designers to see how they approached their work. It was a fascinating project."

He doesn't say how those other lighting designers perceived him, though one suspects it was as a mixture of elder statesman and working colleague. I think he'd hate the 'elder' of the former, but as a colleague he's still battling for greater respect - and more appropriate levels of payment - for what is, in this country especially, largely 'his' profession. It's just a shame that we haven't seen any of his lighting work here for such a long time, an absence that I, for one, hope will be corrected soon.

***"He will approach people with a steely determination that his way of doing something is right, even if it has never been done before. It isn't the easy way through life, it's the pioneer's way."***

Brett. "He was a school friend of mine," Pilbrow explains, "who was working for the BBC at the time. When we were asked to do the National, I told him that I wouldn't do it without him".

Fortunately, Brett chose to join the team. The remarkable thing is that after 40 years in the business, Richard is still following the pioneering route, despite set-backs such as the loss of his beloved Theatre Projects during the eighties as a result of placing too much trust in the wrong people. That period obviously hurt and tired him and he withdrew from lighting

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