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*International*



ARTIN GUERRE AT THE PRINCE EDWARD

- Martin Guerre: Close-up on Boubil and Schönberg's latest West End Spectacle
- Olympic Preparations: Steve Moles reports from Atlanta
- The Silicon Solution: Belgian dimmer specialist Silicon Controls
- The Eagles' record-breaking Hell Freezes Over tour
- Company Profile: RCF UK's dedication to Unlimited Sound
- On Tour with The Cure and AC/DC

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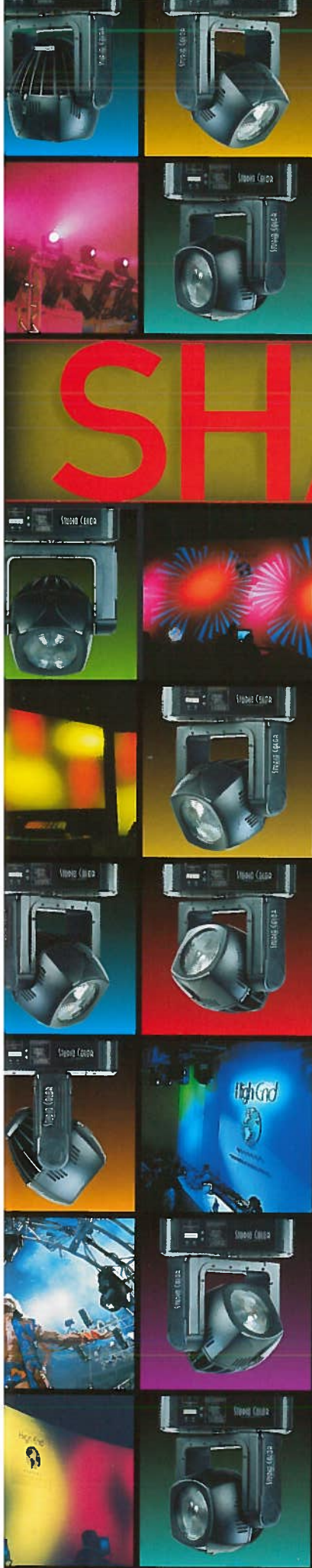
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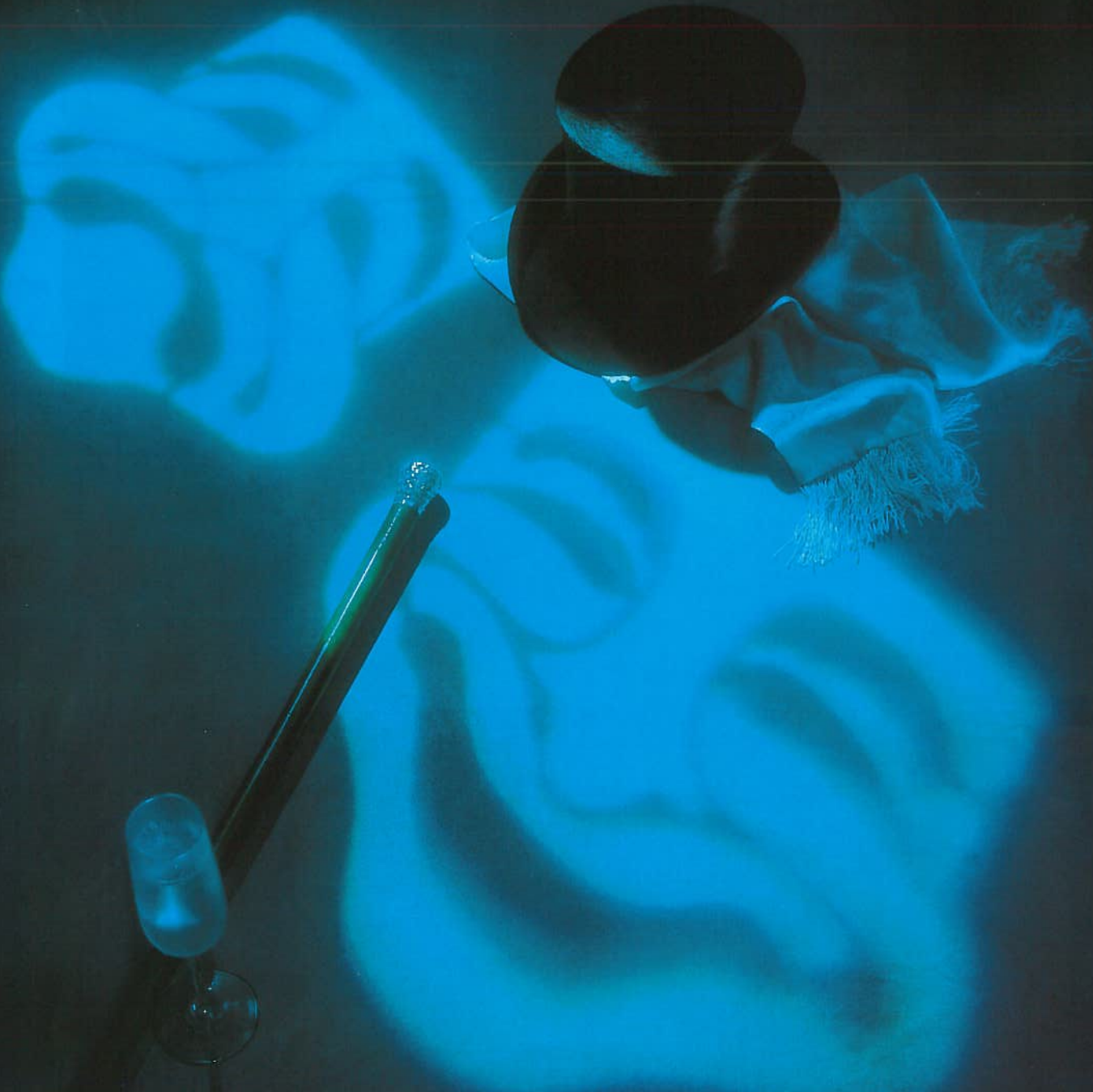
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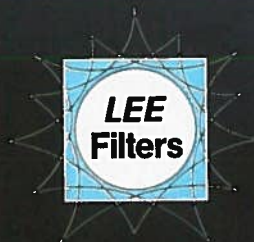
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All other worldwide patents granted or pending.

## PLASA Live and Kicking at Earls Court, London

Since its beginnings at the Bloomsbury Crest Hotel in the late 1970s, the PLASA show has seen phenomenal growth. Last Year's show at Earls Court 2 broke all records, fuelling the move to Earls Court One, the largest exhibition centre in London.

As has been well publicised, this year's event will bring PLASA together with **Presentation Technology** and the **British Music Fair**.

Combining these three events provides the ideal forum to cater for the increasingly diverse entertainment and presentation technology markets. Over 270 companies will exhibit at the PLASA Show alone, and over 22,000 visitors are expected to stream into Earls Court during the Show.

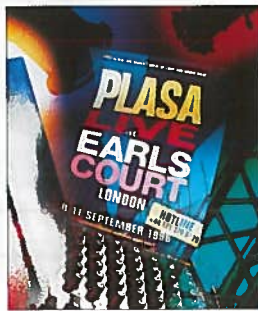
**Presentation Technology** caters for the expanding area of business-to-business presentations and professional AV. Several new exhibitors have recently signed up for the show, and amongst these are Laser Creations International and LG Electronics/Goldstar. It is the only show in the UK targeted specifically at high-powered display solutions and will give visitors the chance to make comparisons between the full range of products available, from portable projection equipment to complete boardroom AV installations and large scale presentations.

Many events will run throughout Presentation Technology. At the heart of these will be the Retro Box/Videowall area which will give visitors the chance to compare videowall products.

The **British Music Fair** draws together the diverse areas of the music industry in a central location. Visitors will find all the latest equipment on display, ranging from musical instruments, amplification equipment, computer hardware and software, karaoke, printed music and books.

The 1996 **PLASA Show** will not only be continuing the existing theme of having dedicated areas for differing levels of sound, but will include a Specialist Sound Sector.

Featuring the latest in Internet technology, the Motorola Internet Bar will offer visitors direct access to the Internet at the touch of a button and the



opportunity to understand what benefits the 'Information Super-highway' has to offer them. A programme of informative and interesting seminars addressing key industry issues will take place throughout the PLASA show (details on page 60).

Theatre Projects/Concert Production Lighting (TP/CPL), part of the Vari-Lite Group of companies, have provided the

impetus to a series of unique presentations at the PLASA Show. Under the banner 'Tales from the Lighting Desk' Richard Pilbrow, Brian Croft and David Hersey will talk about some of the most amusing, bizarre and formative events in their careers.

All three need little introduction: **Richard Pilbrow** is an internationally known lighting designer and theatre consultant, whose work has been seen worldwide. He is also founder and chairman of Theatre Projects Consultants. His book 'Stage Lighting' rapidly became an industry bible, and a second book 'Stage Lighting Design' will be published later this year.

**Brian Croft's** 35-year career has taken him from the National Youth Theatre to touring with the Rolling Stones. He has worked with some of the biggest names in rock and roll and is currently managing director of Vari-Lite Europe.

**David Hersey** has designed the lighting for some 200 productions worldwide, including Miss Saigon, Les Misérables, Cats and most recently Martin Guerre. His work has received international recognition and he has won several accolades, including Tony and Olivier awards. He is the founder of DHA Lighting, which concentrates on the design and manufacture of specialist lighting products.

*The PLASA Show opens on Sunday 8th September and runs through to Wednesday 11th September. These are the most vital four days in your year - make the most of them. For further details on attending or last-minute stand space, contact Bridget Beaurepaire at P&O Events, telephone 0171-370 8229.*

## MEI Collapse

Moving Experiences International Ltd, a company of which Richard Dale is sole director and shareholder, was the subject of a petition by HM Customs to wind up the company in June. As of the 24th June, 33 named creditors were owed a total of £327,486 (with 26 minor creditors unlisted, between them owed £20,689).

Particulars of the case have been passed on to the DTI by Gentle Jayes, solicitors acting on behalf of Scena, the main creditor involved.

## PLASA's Web Award

As L+SI was going to press, PLASA's World Wide Web site received a Three Star Award from the McKinley Group, owners of the Magellan Internet directory. The McKinley Review assesses Web sites for depth of content, ease of exploration and 'Net Appeal'. The rating is a special mark of achievement in Magellan, McKinley's comprehensive Internet directory of nearly two million sites.

The McKinley Group was set up in 1993 by a team of publishers, technologists and information specialists, and to date has carried out around 40,000 Web site reviews from among the sites covered by the directory.

You can view the PLASA Internet site on <http://www.plasa.org.uk/plasa/>

## Exhibitor Open Day



Over 140 exhibitor representatives attended the recent pre PLASA Show Open Day held at Earls Court 1 on Friday 26th July where presentations were made by the various organising teams working on the event.

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## Beware of the Russian Bears!

During the recent Singapore exhibition, a disturbing story emerged concerning the supply of equipment to a Russian festival.

Last May, Raivo Kauniste of Pro 1, Zero 88's main distributor for Latvia, was engaged to light the 'We are Russia' festival in Kaliningrad. The sound equipment was to be supplied by PA company Audio AE. Because of the perceived importance of the show, equipment valued at \$600,000 was lined up for the event. On the evening of the show, a massive storm tore down the stage roof-top, and flooded the surrounding land. Not surprisingly, the gig was cancelled, and the two companies worked through the night de-rigging all the equipment in preparation for the return journey to Latvia. At six o'clock the following morning, the local 'mafia' arrived at the crew's hotel demanding that the equipment be reinstated as the performance had been rescheduled for that evening. The crew were subjected to threats, several were badly beaten up, and all money and customs documentation was taken. Faced with little choice, the crew reassembled the stage system. Unfortunately, the show was a disaster and attendance was poor.

In view of the losses on the concert, the 'mafia' informed the thoroughly shell-shocked crew that they owed \$186,000 and that the gear would be confiscated until the sum was paid! All subsequent negotiations were in vain: the crew were driven to the border and had to make their way by foot back into Latvia. As they only had single entry visas, it was impossible for them to return in order to try



to recover the gear.

Both the Russian and the Latvian authorities were powerless to intervene, and having exhausted all lawful routes, Kauniste in desperation contacted the Latvian 'mafia' for help. They agreed, for the reduced sum of \$90,000, that they would recover the equipment from Russia. Pro 1 reluctantly agreed, but Audio AE refused. All the lighting equipment was subsequently returned to Latvia, but Kauniste couldn't afford to pay the full fine for both sets of equipment. Inevitably, the Latvian mafia confiscated his company, his warehouse, his equipment, his car and his apartment and Kauniste was still unable to get any assistance from the authorities. Given the severity of the situation, it is not surprising that he has now left the country of his birth and fled to the USA.

Don't believe it? The whole sorry saga was reported in the Latvian newspaper shown above.

## LETTERS

Dear Editor,

Re: Letters - July issue

Following Martin Blake's letter last month concerning The Effects Company's range of smoke machines, I would like to add further comment. He claims, yet again, that the Cirrus Low Smoke machine produces an effect that is 'virtually indistinguishable from dry ice in its visual appearance'.

I have used this machine on three shows and, in my opinion, the effect is distinguishable from dry ice. Personally, I find it thinner and my experience is that it doesn't stay close to the ground. In my view, the machine's only real benefit is that it should be safer than dry ice.

Robert Halliday

## High End Munich



High End's impressive new facility in Schwaig, Munich - full story page 32.

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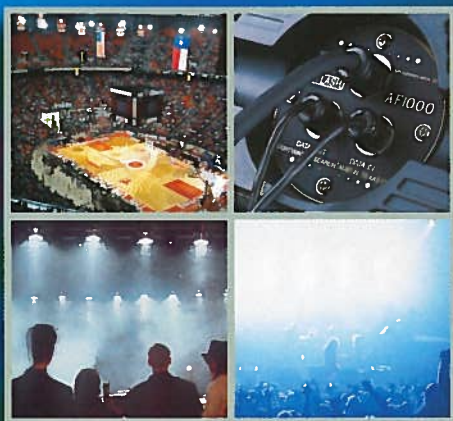


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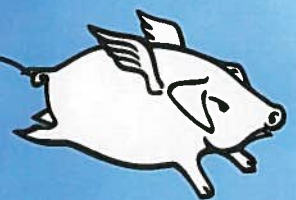
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## Record UK Group at PALA '96 - Singapore

Over 300 exhibitors were present at Pro Audio and Light Asia (PALA), which was held at Singapore's World Trade Centre in July. The show's seminar programme included comprehensive sessions on lighting design presented by Francis Reid, and Andy Graves of **Pulsar**, who were exhibiting alongside **Clay Paky**, presented a workshop on Pulsar's Masterpiece.

Around 60 UK companies were present at the show, 28 of which were part of PLASA's DTI-supported UK group. **Cloud Electronics** launched their new CX242 mixer to much acclaim, whilst **Ryger Electronics**, among the first-time exhibitors at the show, reported favourable responses to their new rotating gobo in the Defender Colour, and have made a large number of contacts for potential distributors throughout Asia. Other first-timers at the show included **Futurist** and **Light Design**, both of whom were pleased with new contacts.

**Martin Audio's** David Bissett-Powell and Martin Kelly joined their Singapore-based distributor, **Hawko Trading**, and were showing the Wavefront 8C compact touring system and the WSX sub-bass system. As well as their Classic range of valve technology signal processors, **Larking Audio** were exhibiting the new Indigo and Crimson ranges of valve and discreet technology signal processors and power amplifiers. **SCV Electronics** were showing their V8 - a 2U rack-mountable eight-channel tube signal conditioner, intended for adding warmth to 'dry' recordings. Also from SCV was the new EQ231S, a rack-mountable dual 1/3 octave graphic equaliser, the MX61 boardroom mixer and the DA82 distribution amplifier.

New from **MTR** were a 200W per channel 1U power amplifier and a two-channel stereo headphone amplifier. **Studiomaster** displayed their Trilogy range of front-of-house, multi-track recording and monitor consoles for the first time overseas, while 'old hands' **Avolites** previewed their new chokeless ART (Active Rise Time) dimmer, designed for accurate definition of rise time in excess of 450 microseconds. New products shown by **Studio Audio & Video** included the Octavia modular multi-track digital workstation. In the voice alarm market, **Baldwin Boxall Communications'** Vigil system was on show.

**Total Fabrications'** recently-introduced Fold Flat Truss system was introduced to the Asian market. The new connector design of the system reduces set-up times and increases load-bearing capacity. **James Thomas Engineering** were showing their Baby Tower, a small ground support tower designed to lift loads of up to 500kg to a maximum height of four, five or seven metres, depending on configuration.

**Turbosound** debuted their IA-400 dual channel professional power amplifier, for use with the Impact range of sound reinforcement products.



Left to right: Rosemary Stafford (British High Commission), new PLASA member Emanuel Ziino of Show Technology Australia, PLASA's Matthew Griffiths and Terence Golding (British High Commission).

**BSS Audio** were impressed by the number of visitors - very few of whom seemed to be from Singapore itself - which totalled around 5,000.

**Le Maitre's** Rick Wilson re-appointed **Explo** as the company's Singapore distributor at the show, as well as now taking on responsibility for the rest of Malaysia. A number of new installations of Le Maitre's G300 smoke machine in the area were announced by Explo.

**C-Audio** were represented by their local distributors, **Electro Systems Industries Pte**, with the newly-launched ST-1000, a 1,000W per channel stereo power amplifier taking pride of place on the stand. **Soundcraft** launched their new Ghost range of 8-bus recording consoles, offering four-band equalisation with two fully parametric mids, 10 aux busses and a host of other professional features.

Also at the show were the **Mark IV Pro Audio Group**, including **Midas** with their XL4 and XL200 consoles, **DDA** with the CS3 live mixing console among their range, and **Klark Teknik**, whose DN4000 dual channel parametric EQ/delay line was among the range of signal processing products on show. **Wembley Loudspeakers** celebrated their 25th birthday by opening a new office in Singapore, and **AC Lighting** had a very successful show, taking a large order on the final day that paid for the entire trip!

International PLASA Members, **Clay Paky**, **High End Systems** and **Martin Professional** all staged impressive light shows to demonstrate the merits of the Golden Scan, Studio Color and Pal 1200 respectively.

Other companies at the event included **ETC US**, **Flying Pig Systems**, **Griven**, **Hardware Xenon**, **JEM Pyrotechnic**, **LSC**, **Selecon**, **Tomcat**, **Celestion**, **Omniphonics**, **Penn Fabrication**, **TMB**, **Slick Systems**, **Sound Service**, **Zero 88**, **Lamba** and **Focusrite Audio Engineering**.

Despite an announcement that PALA would move to Bangkok for 1997, the organisers have confirmed that it will once again be held in Singapore next year.



Lighting designer Francis Reid (left), who chaired one of the seminars with Derrick Saunders of Pulsar (centre) and Enrico Caironi of Clay Paky.



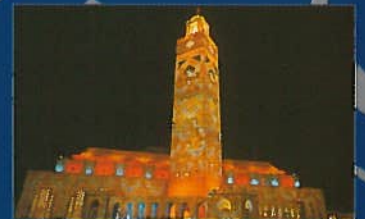
Paul MacCallum (centre) with John Lewis and Geraldine Stewart of Wembley Loudspeakers' new Singapore office.

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## ARRI's Tales of Bavaria

Mention the name ARRI and most people would call to mind a range of quality film and television lighting and camera equipment. However, few would be aware of just how large the company is, employing over 1,000 worldwide (800 in Munich alone), and of the range of top quality products that filter out of this massive operation.

With this in mind, ARRI GB (led by Derrick Ross and Nick Shapley), in association with the British Society of Cinematographers (BSC) and Society of Television Lighting Directors (STLD), invited a group of lighting and camera professionals to join them on a three-day visit to the company's headquarters in Munich.

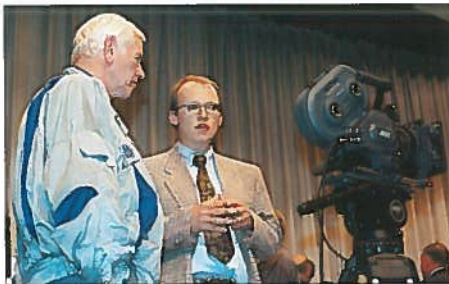
First on the agenda was a tour of the camera manufacturing and rental facility at the Turkenstrasse HQ, followed by a tour of the two TV Studios at the site, rented out on a commercial basis, which carry a positive battalion of lighting, both tungsten and HMIs. The on-site editing department carries out all on-line editing and dubbing in a fully equipped media facility, whilst the lighting rental department can lay claim to being one of the largest on the Continent.

Having toured the complex, the group was ushered into ARRI's own cinema (also run on a commercial basis) to view excerpts of the films and commercials the company has lent its expertise to. The directors of photography in the party were then given the opportunity to get their hands-on the ARRI camera range and talk with the technical crew in Munich.

The following day, after a brief diversion to the ARRI rental facility on the outskirts of Munich, the group were coached to the beautiful Kloster Seeon, a former Monastery converted to hotel and conference facilities. The afternoon was given over to a lighting product presentation where the group were able to see some of the new products launched in the last 12 months. One of the highlights was the new Compact 400T, available in 2.5k and 4k versions, a modified version of the standard 4k daylight Fresnel, offering increased light output and finished in matt black for theatre use.

Further new products were promised for launch shortly, including a new Pocket Par single-ended HMI; the ARRISun 2 - a 200W single-ended HMI; the ARRISun 5, a 575W single-ended HMI; the Compact 125, a baby brother to the Compact 200 and lastly, a 575/1.2kW Universal Electronic flicker-free Ballast.

By late afternoon, the group was shoe-horned



Michael Kopits of ARRI (right) with lighting director Tony Impey and the new 435 camera.



LDs Ashley Rowe, Lawrence Jones of Granada and Rob Payton check out the new Pocket Par.



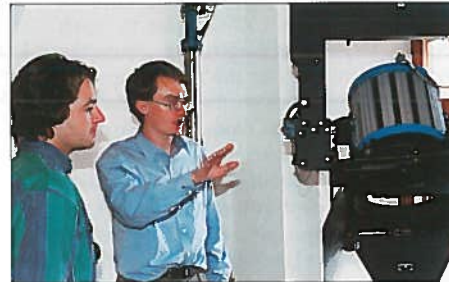
Herr Arnold (right) describes his vintage car collection to Peter Lawes and Gerry Fisher.

back onto the coach for a trip to the nearby ARRI Lichttechnik facility which outputs over 25,000 lampheads a year. Sadly, this being Germany, and this being a Saturday, access to the former gunpowder factory was not possible, so the vintage car collection of Herr Arnold (son of one of the original founders), housed nearby, proved a more than adequate substitute, aided by copious glasses of the famous ARRI distilled lens cleaning fluid - a particularly violent strain of schnaps - brewed on-site by Herr Arnold.

In the evening, the group got its first taste of true Bavarian hospitality at the Apfelkam restaurant, where yet another excellent meal was rounded off by the now legendary wit and charm of John Watt, press-ganged into giving the vote of thanks in his



Jochen Thieser of ARRI (left) with DOP Paul Beeson, Steve Pizzello of American Cinematographer magazine and Gerry Fisher, also a DOP.



Mark Kenyon of the BBC is shown the new motorised Studio 200 by ARRI's Harald Krieg.



Andi Taylor (left), Steve Knight (centre, left) and Simon Stephens (right) discuss product with ARRI GB's Nick Shapley.

capacity as chairman of the STLD.

In true ARRI style, there was yet more to come and at midnight, the return coach pulled off the road and deposited the group lakeside for a stunning night-time display of lighting with ARRI luminaires illuminating the walls of Kloster Seeon, some half a mile across the lake. Once back at the hotel, there was a final opportunity to test some of the many lights lined up on the lawns of the hotel. Whether the local residents appreciated a gaggle of lighting directors and gaffers being let loose with a very powerful spotlight at 1am in the morning will never be known. By Sunday, the party had made a quick exit, spent the day sight-seeing and returned to Heathrow that evening.

Ruth Rossington

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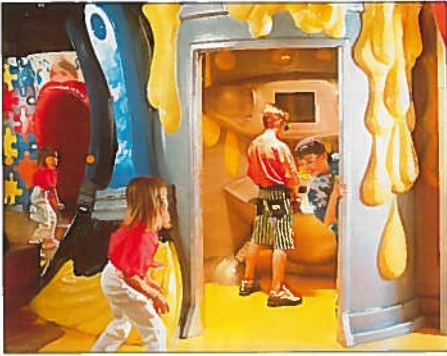


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## Incredible Voyage II



Following hard on the heels of our story in last month's L+SI about The Incredible Voyage, WWG's compact theme park for kids on board a giant high speed ferry, comes news of the sequel. Version two was launched at the end of July, when Stena Line's new HSS 1500 class service, between Stranraer and Belfast was inaugurated.

## Burgh's Back Up

Chris de Burgh's recent outing around the Stately Homes of England saw lighting designer Tim Dunn use the Jands Hog 600 for the first time.

The desk was used for the control of 120 Pars and 22 Intellabeams, and when, on one occasion, the locally provided generator tripped out in the middle of programming, a quick call to AC's 24-hour helpline solved the problem and the performance went ahead without a hitch.

## People News

Lighting designer **Francis Reid**, responsible for lighting over 300 productions during his career, has been awarded an honorary fellowship by the Hong Kong Academy for Performing Arts. As well as his lighting design work, Reid has written several books on the subject, and has taught at London's Central School of Art and Design and RADA, as well as being a biennial visiting lecturer at the Central Theatre School of Canada.

Harkness Hall Limited have appointed **Ian Sim** to the board as sales director. He will take on the company's sales and marketing operations when the present director, Eddie Daniels retires later this year. Sim was previously managing director of Evans (Stage and Studio Engineering) Ltd.

BASH Theatrical Lighting Inc and BASH Lighting Services West, have appointed **Bill Lairmore** to their Las Vegas sales staff. Lairmore comes to BASH with an extensive knowledge of systems design and gaming venue entertainment lighting requirements. His responsibilities at BASH West will include systems design and outside sales.

Vertical Data Ltd have appointed **Peter Dimblad** as business development manager for their ShuttleVIEW CD ROM archival/retrieval system. Dimblad previously worked in the aircraft industry, and will have specific responsibility for finding new markets, as well as increasing the current pro-audio and MI client list.

Stagetec (UK) have appointed **Alastair French** as service engineer. He will primarily concentrate on the 24-hour service of the Compulite range.

Sound Technology continue to expand their new

operation with the appointment of **Ian Cullen** as marketing assistant.

Community Professional Loudspeakers have three new appointments: **John Garbutt** as technical support specialist, **Premjit Talwar** as its Middle East regional manager and **Chuck McGregor** as marketing relations. Garbutt will work on the installation side, Talwar will be responsible for sales and will be working closely with Doug Wilkens, whilst McGregor will assist Christine Howze, director of marketing with technical support.

Vestax Europe have appointed **Andy Williams** as managing director. He has been with the company for the past five years and takes on the role vacated by Rob Peck, who left to head up Gemini Sound Products in the UK.

**Steff Langley**, head of sound at the RSC, is to join theatre sound specialists, The Sound Company. The company are working on five West End productions, with a further five on tour.

## Kit Collingwood

**Kit Collingwood**, retail salesman at NJD's 'Nottingham, Light & Sound Centre', was killed in a car accident in mid July.

NJD MD **Kevin Hopcroft** told L+SI that **Collingwood**, who had worked for NJD for over a year, and was also a DJ at the Nottingham Ritzy, was a well liked and valued member of staff and that his untimely death at the age of only 23 had shocked all at NJD.



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*John Hudson  
Live Theatre, Newcastle-upon-Tyne*

“ Nice bit of Kit ”

*Keith Benson  
Glynbourne Opera House*

“ I get particularly excited by the 28-58 degree profile ”

*Nick Hunt  
Lighting Designer & Editor  
ALD Focus Magazine*

“ Freedom has so many things going for it I could go on forever ”

*Terry Cowley,  
Abraham Moss Theatre, Manchester*

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*Mats Karlsson  
Bellalite, Sweden*

“ Trust CCT to come up with the goods on optical brilliance, and a snazzy little dimmer underneath ”

*Jim Laws  
President, Jim Laws Lighting*

“ These Lanterns are ideal for the Royal Exchange in every way ”

*Vince Herbert  
Royal Exchange Theatre Company,  
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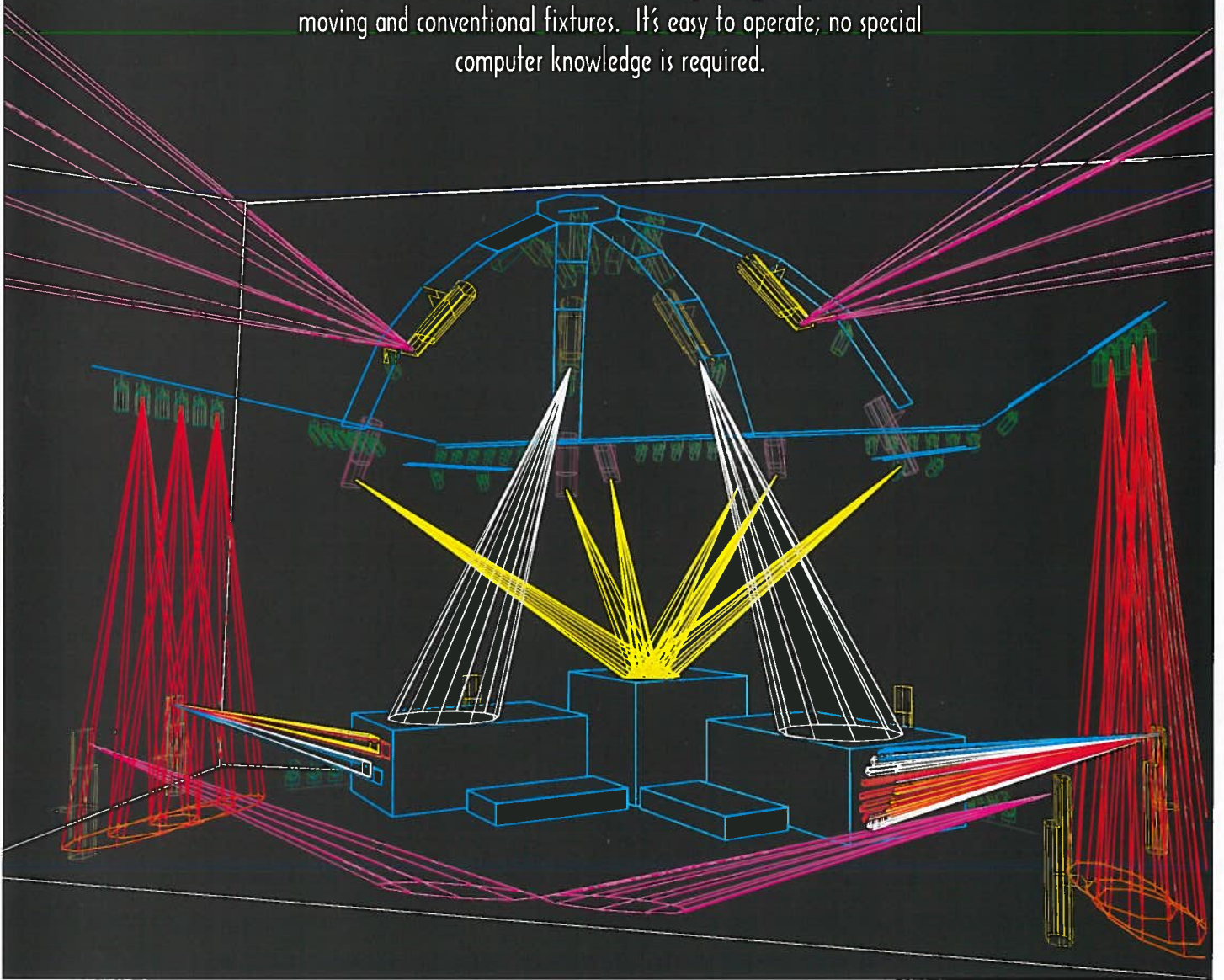
*Trevor Turton  
Chapter Arts Centre, Cardiff*

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## Strasbourg is New Venue for TiLE

Trends in Leisure and Entertainment (TiLE), the annual conference and exhibition which has taken place at Maastricht in Holland for the past five years, is to move next year. The Palais de Congrès in Strasbourg has been selected as the new venue by the show organisers, Andrich International.

This year's TiLE, with 40 exhibitors and 37 papers presented, also included a lighting panel chaired by Ellen Lampert from Theatre Crafts International and the US-based LDI Show. Panellists included Peter Ed of Strand Lighting, Tom Ruzica, lighting designer for the new Warner Movie World in Germany, and L+SI's own Tony Gottelier.

Among many interesting papers given by delegates this year were the following under the general heading of Sound and Light Technology: 'TV Goes Digital - The Future of Video in Leisure and Entertainment' by Steve Alcorn of Alcorn McBride, 'Lighting Design for the Themed Environment' by Michael Finney of Landmark, 'New Methods of Creating 3D Sound Fields across Multiple Speakers' by Bruno Suner (Euphonia), Andrew Reilly and David McGrath of Lake DSP.

It remains to be seen whether Richard Curtis, the managing director of Andrich International, can find a venue in Strasbourg quite as spectacular as the Chateau Neercanne in Maastricht as the setting for the splendid annual TiLE dinner which is traditionally the highlight of this event.

**Tony Gottelier**

## Summer Jazz with LTP

The recent week of 'Summer Jazz' at Kew Gardens was a great success, with around 4,000 people per night making their way to the Botanic Gardens in West London to watch acts including The Blues Band and Jools Holland.

Lighting Technology Projects (LTP), who have handled the technical production for the Jazz concerts for the last five years, were again in temporary residence, illuminating the stage and the beautiful glass structure of the Temperate House that provided a perfect backdrop as the sun fell.

Projects director Bruce Kirk designed the lighting for both the stage and general areas. The stage featured 100 Par 64s controlled via a Zero 88 Sirius 48-way desk, and six VL6s run through an MA Scan Commander. The Temperate House was lit both inside and out, and lighting for the surrounding grounds used over 150 architectural Powerlight fittings in blues and greens to accentuate trees and foliage.

LTP have also upgraded the venue over the last few years by installing a new mains power supply



The Temperate House glows from within as the sun falls, while The Blues Band perform on stage. Below, their FOH sound engineer, Des Jabir, at the PM4000 during the performance.



and specifying internal wiring to help with the placement of light fittings. A control duct has been implanted and runs 100m underground from the side of the stage to the control tent, all of which helps to decrease the period of upheaval that the delicate

gardens have to undergo each year.

The sound system, supplied by Concert Sound, comprised an EAW KF 850 system, with the band's own Yamaha PM4000 out front and a Midas XL3 running monitors. Rigging and stage lighting equipment were supplied by Theatre Projects.



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# Introducing Chroma-Q Colour Changing Redefined



When we set about designing a colour changer we decided to look to other industries for inspiration. First we talked to the computer industry. They advised us that investing in advanced software and utilizing sophisticated manufacturing technologies would result in fewer components than we originally anticipated. We then turned to the motor industry. They told us *how* you manufacture a product is just as important as *what* you manufacture. In addition they assured us that mass production was the key to cost reduction.

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

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

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

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

Oh, and by the way the motor industry was right. By taking their advice and setting up a mass production facility, we are now able to bring the Chroma-Q to you at only

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



## New Sound for Wakefield Theatre/Opera House

Stagetec (UK) Ltd have just completed a new sound system installation at Wakefield Theatre and Opera House. The theatre caters for a wide range of both touring and in-house productions and was struggling to stretch its existing system to meet the requirements. Thanks to a successful lottery bid, it now has a comprehensive new system.

A complete new sound cable infrastructure has been installed consisting of audio outlet boxes in the orchestra pit and on stage, wired back through a patch panel to either the control room in the gallery or rear of stalls mixing positions. After extensive testing of various loudspeaker enclosures, the theatre eventually opted for six Renkus-Heinz TRC 121 cabinets, one pair for each seating level, and a pair of BPS 151 sub-bass enclosures. A Renkus-Heinz SR62H under-balcony speaker is mounted beneath front of stage to provide fill for the front of stalls seating area. The whole system is being run passive, utilising the band pass filters in the sub-bass speakers. On stage monitoring is provided by means of four Ohm RWM wedge monitor speakers which are driven by seven Crown CSL installation amplifiers fed via three Furman LC6 balanced compressor/ limiters. A Soundcraft 24 channel K3 theatre mixing console is installed at the rear of the stalls - chosen to provide the optimum combination between the theatre and concert performances given at the theatre, whilst a Soundcraft Spirit Folio Sx mixing console is installed in the control room for handling sound effects on the smaller productions.

Processing equipment includes the new Behringer DSP8000 Ultracurve which includes a digital dual 30-band graphic equaliser, level meter and feedback exterminator with real time analyser. The theatre's existing Yamaha 2031 graphic equaliser was utilised for two of the monitor channels and a new Alesis MEQ230 provided for the remaining two channels. Effects are provided by means of two Alesis Midiverb 4 units. Source equipment was provided to enable the theatre to work with the varied array of incoming company's media and included a Denon DN1100R MiniDisc machine, Denon CD and cassette decks and a Revox B77.



## Spot the Difference

The Spot Company have made recent upgrades to their WYSIWYG capabilities. Following an increase in demand since they purchased their first system, they have created a permanent home for the unit and added another new system to their stock. The new suite, run by technician Nick Porter, is housed in a room within the Northfield Road labyrinth. One of the systems is flightcased and is used for rentals and 'dry hires', as well as in-house operations.

The company recently completed the entire lighting contract for The Tribal Gathering Dance Music Festival 1996 at Luton Hoo. The event was attended by 30,000 happy festival goers who danced the night away, in seven big top tents, to a selection of dance acts and DJs from around the world, the headline act being Black Grape (LD Mikey Howard).

Having just returned from the Roskilde festival in Denmark, Howard was extremely pushed for programming time and so one of Spot Co's WYSIWYG systems was called into action with Nick Porter replicating Gerry Caulderhead's stage design. Howard, who arrived on site on Saturday afternoon, was then able to programme with his Avo Diamond all afternoon on the WYSIWYG system, whilst Caulderhead operated away on his Whole Hog I.

Five minutes before Black Grape went on stage, the DMX lines were changed over from 'virtual reality' to 'actual reality' and away they went.



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## Obsession Goes Dutch

As a typical Dutch provincial theatre, it is not unusual for The Schouwburg De Kring in Rosendaal to stage some 250 to 300 shows or events every year. In constant use by major Dutch touring companies, the theatre is home to plays and musicals, as well as many local events.



Rotterdam-based theatre company 'Ro Theatre', also uses De Kring for rehearsals and as such the theatre could be producing five different shows a week. When the production crew replaced the theatre's control boards recently, it was this frequent plotting of new shows that was the main consideration and which led them to specify ETC's Obsession. Jansen & Jansen of Amsterdam, ETC Europe's distributor in the Netherlands, supplied both an Obsession and an Obsession 600. Seen above with the desk are (left to right) Mareo Sluis, Wim Dansk and Frank de Monnick of De Kring with Anjo Kuiper of Jansen & Jansen (seated).

## Multiform Technology Established

Following our news last month that former Avitec managing director Tony Kingsley has joined Multiform, it now emerges that the company is planning a controlled expansion into both the disco and stage lighting markets, whilst a new sideline selling alarm-triggered smoke machines into the security market is already taking off. Multiform will also be taking on the distribution of Griven products and a new sister company, Multiform Technology Ltd, is being formed for this purpose. Kingsley told L+SI that other manufacturers were being considered for possible inclusion in the new company's distribution portfolio. Avitec, meanwhile, has passed into the hands of Kingsley's former business partner Colin Hammond.

## Clay Paky Boosts US Presence

Clay Paky has reorganised and reinforced its pre-sales assistance and customer service activities in the US market through an exclusive contract with Group One. The contract was signed in mid-June at Clay Paky's offices in Pedrengo, Italy. Jack Kelly (pictured left), president of Group One, accompanied by vice-presidents Norman Wright and Vinnie Finnegan, travelled to Italy to sign the contract with Clay Paky president Pasquale Quadri (pictured right). Clay Paky products are being specified on a wide number of events, including Pavarotti & Friends Concert in aid of the Children of Bosnia and Italian singer Ivana Spagna's current tour. The company is also preparing to go on-line and will soon launch its World Wide Web site.



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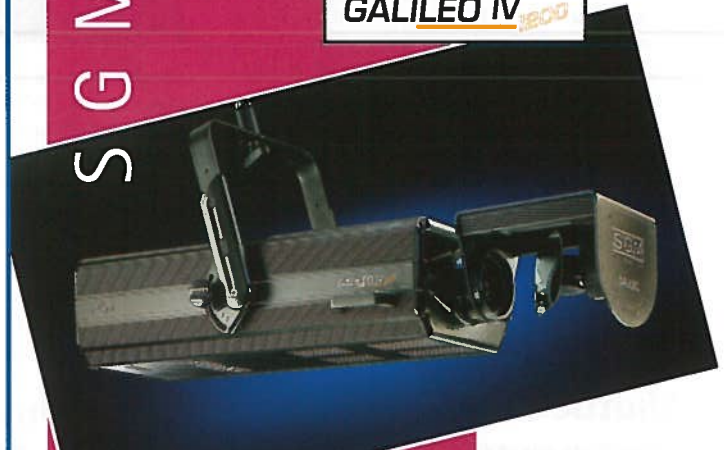
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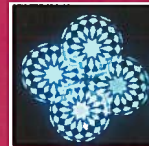
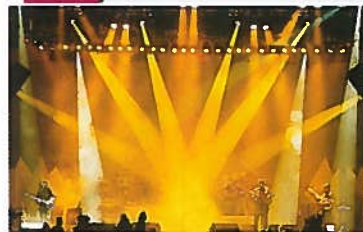


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## Motoring On

As the summer festival and event season has swung into action, so the demand for more Lodestar motors has continued, with PCM shipping over 60 in the last month. Concert Lights UK purchased four one-tonners for the new Bridgewater Hall in Manchester, the venue that is replacing the old Free Trade Hall, whilst Lite Alternative bought four half-tonners. Audio Rent in Switzerland have added yet more to their massive stock that now totals over 200 motors. This latest sale of 18 was prompted by the massive Prince's Trust concert in Hyde Park at the end of June (see main feature in last month's L+SI) featuring over 70 Lodestar motors for PA rigging.

Edwin Shirley Stages (ESS) have acquired an 8-way Lodestar system from PCM for another of their stages, bringing their total of Lodestar lifted stages to four. This staging-specific system consists of eight two-metre-a-minute, two ton Model R hoists. The standard package offered also includes a controller, flight cases and all necessary cabling.

## NSCA Boost for ShuttleCAD

Vertical Data report sales of more than \$36,000 (£23,500) for their ShuttleCAD design and presentation software during the recent NSCA Contracts Show in St Louis.

Advance orders from existing customers wanting to upgrade to version 4 were in excess of \$16,000 (£11,000), and new business was even more spectacular, with nearly \$20,000 (£12,500) in sales of the existing DOS-based ShuttleCAD v.3. All those who bought at the show will receive a free upgrade to version 4 upon its release.

## Victoria Peak

In last month's issue of L+SI, we inadvertently implied that AC Lighting had supplied four Strand LD90 dimmers to the Rise of the Dragon ride at Hong Kong's Victoria Peak Development. The dimmers were, of course, supplied by Strand Asia, who were contractors on the project, along with AC Lighting.

## TP Launch CAD Service



Theatre Projects is launching a brand new CAD service with a WYSIWYG (What You See Is What You Get) interface.

This new AutoCAD 12/13 based facility enables real time viewing and programming of a show in terms of lighting movement, colour, intensity and gobo pattern of both moving and conventional fixtures. TP/CPL's new facility has already been used by lighting designer John Sinden, for the planning of the M People concerts at Alton Towers (pictured above) and Crystal Palace.

## Plans Unveiled for London Showcase

An ambitious plan to showcase London as the music capital of the world was recently unveiled by the owners of London's Business Design Centre. With it comes an investment of £14 million which will be used to create an annual event aimed at celebrating British music.

London Music Week, announced by Business Design Centre managing director Andrew Morris, will take place from April 26th - 2nd May, 1997, and is designed to focus world attention on the talents and achievements of the UK's writers, musicians, performers and technicians, whilst at the same time providing a platform for its European counterparts to put their own skills on show. It will also provide Londoners with a week-long festival of music with live events every night at over 32 venues in and around the capital.

London Music Week is expected to bring into the city over 6,000 industry professionals from all over the world, as well as many more thousands of music fans from the outskirts of London and around the country.

For further details contact Business Design Centre in London, telephone 0171-359 3535.

## Picture House Opens

Lightmasters UK have carried out a sound and lighting contract worth £118,000 for clients Enteramma at the Picture House Nightclub in Stourbridge, set to open this month. Built on the site of a former cinema and bingo hall, all equipment was supplied by Lightmasters, who designed the sound system, while the lighting design and programming were undertaken by Carl Dodds of Making Light Work. The installation and commissioning of the system was carried out in conjunction with Enteramma.

The lighting system features four Pro Scan 2s, four Galactica 575s, a Nebula 1200 and Par 56 lanterns, all from FAL, plus eight Madscans and eight Mad colour changers from Mad Lighting, together with a combination of neon and Anytronics strobe pods - all run from ShowCAD.

The sound system comprises JBL 1770 mid/highs, P749 bass cabs and 1350 peripherals, with a JBL C236 system controller, driven by JBL MPX amplifiers. The front end includes a Cloud CXM mixer, two Pioneer CDJ 500 CD players and Technics decks.

## Leamington at the Lighthouse

Leamington Sight & Sound have installed a sound, lighting and video package into the first of a new brand of young people's venues for Banks' Brewery. The £35,000 of equipment supplied to the Lighthouse in Coventry includes Martin Audio sound reinforcement products - specified by the brewery after they heard the Martin system in action at the nearby Holyhead pub.

The Martin equipment comprises a combination of ICT300s and ICS sub bass, with Wavefront 1s and a couple of EM25s to address the different areas of the pub. Leamington also fitted Digital Music Express (DMX), linked via the Astra satellite, as part of the video set-up at the pub, and put a searchlight on the roof of the venue to give it a genuine lighthouse feel.

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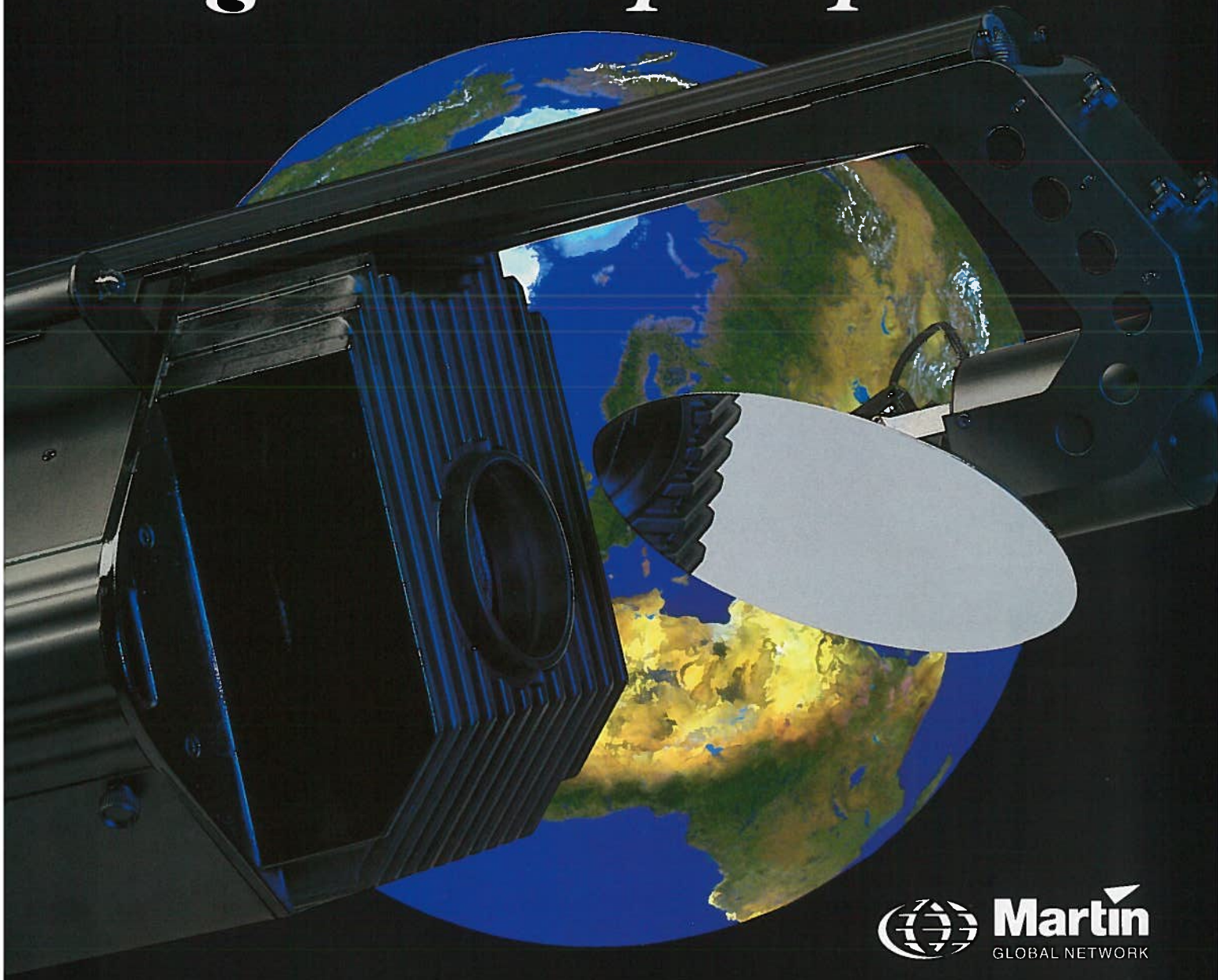
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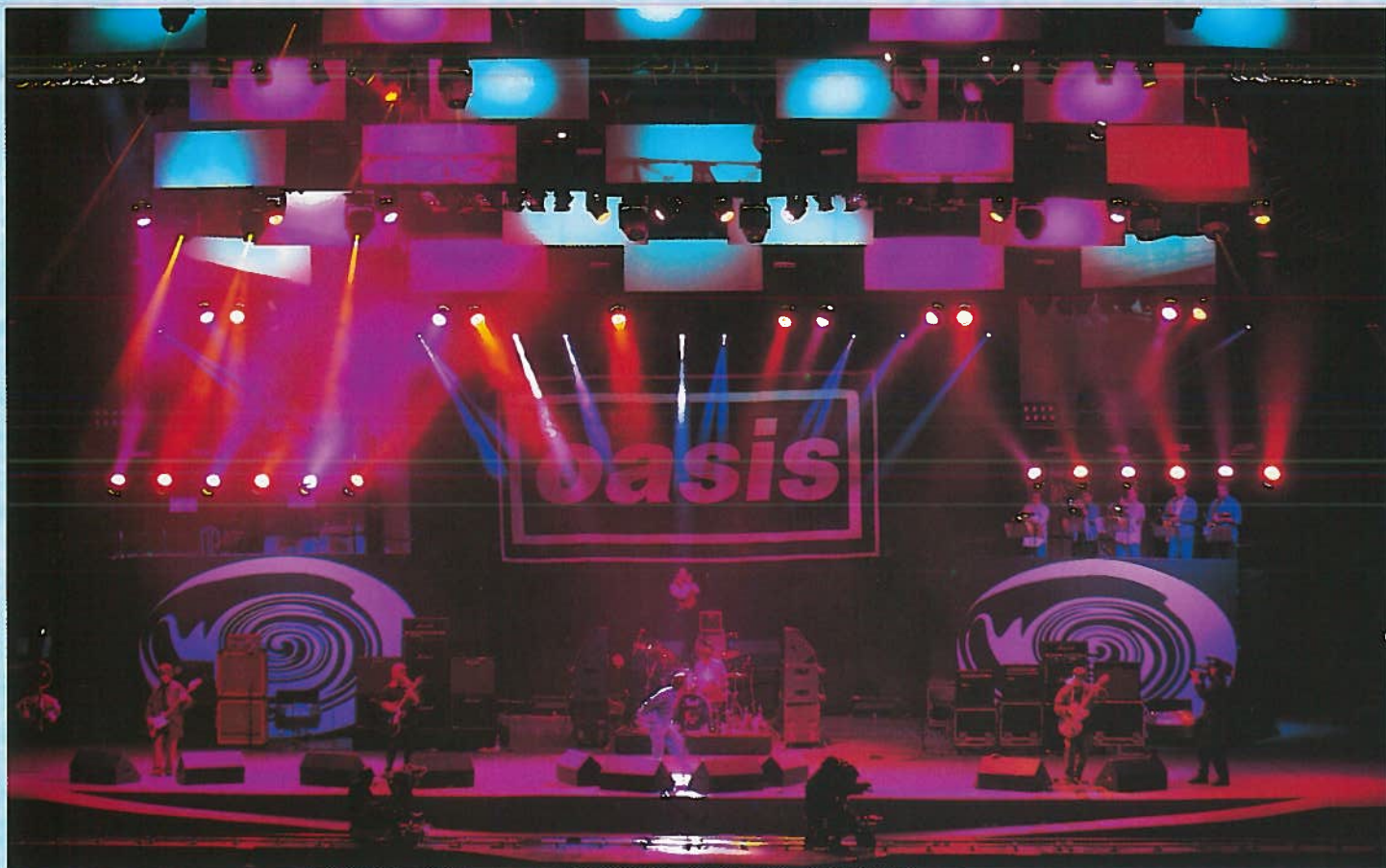
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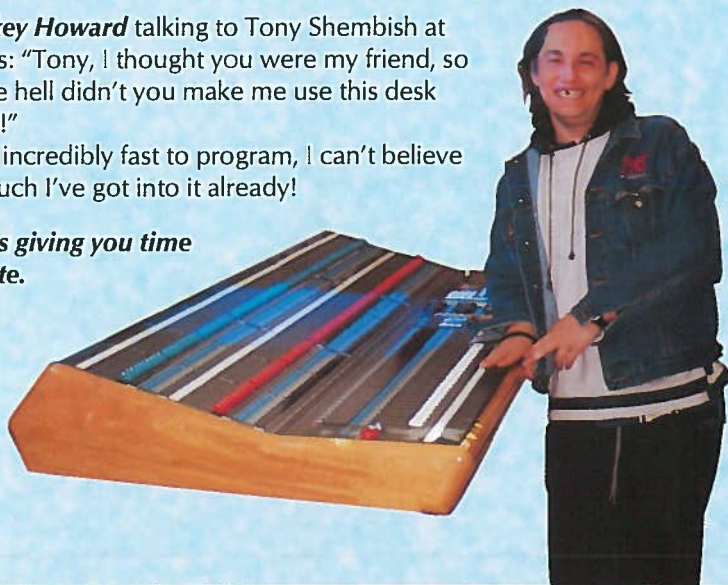
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*LD Mikey Howard* talking to Tony Shembish at Avolites: "Tony, I thought you were my friend, so why the hell didn't you make me use this desk before!!"

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*Avolites giving you time to create.*





## Club 'M'

When M People finished their successful UK tour last December, Jonathan Park (designer) and Patrick Woodroffe (lighting designer) were asked to design two special open air shows for the summer of '96. They proposed turning the audience area into Club 'M' for the evening, but there was one slight complication: the two shows were on successive nights in mid June, but the first was at Alton Towers, whilst the second was 200 miles away at Crystal Palace!

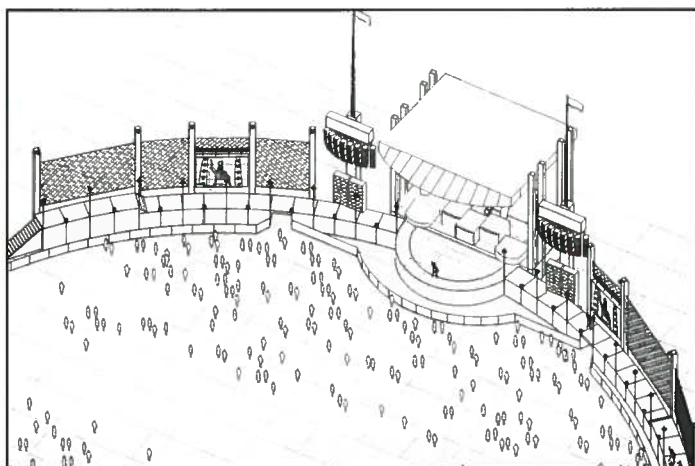


Clearly two stage structures were required, but the problem was how to make it possible to dress and transfer the larger than life 'Club' setting overnight at an economical price. Patrick Woodroffe was keen to get lighting out into the audience to develop the club enclosure and atmosphere. Jonathan Park's solution was to make the stage the centre of a curving wall of highly coloured 'bizarre fruit' scrimms 90m across. The Star Hire roof structure of silver trussing was stripped of all frills and combined with the silver and black touring set, with its curved sharks' fins lighting columns, to produce a strong central architectural feature. The Brit Row Turbo system was disengaged from the stage structure and backed by two lightweight 28m tapering radio masts to heighten the expressionistic effect. The eight 8m high scrimms were suspended from catenaries between an array of 10m high silver trussing uprights along the rear edge of a curving metallic silver screamer 2.5m wide. 18 decorative flambeaux -Olympic style flaming bowls - were arrayed along the front of the curve, to be used with great effect during 'Search for the Hero' as darkness fell.

Lighting Director, John Sinden, added a matrix grid of open white aers between the sharks' fins whilst the silver towers of the wall were faced with simple six lamp rows of coloured parcans. The scrimms, with their silver net 'distressing', were brilliantly lit by Molefays with Molemag colour changers and floor-mounted VL5s completed the screamer lighting. The fluorescent colours of the scrimms provided a festive club-like feel and, as the sun went down and the lighting took over, two energetic concerts took place.

The use of the existing touring set, a bundle of coloured scrimms, 18 flambeaux and basic lighting instruments provided a simple and effective way of transferring a big look overnight without breaking the bank. It also provided the perfect setting for the debut of Screenco's latest JumboTron technology, the JTS17. Each screen, measuring 5m wide by 3.6m high, was positioned either side of the stage., and because of the screen's increased resolution, the minimum viewing distance is now no more than five metres offering those close to the stage as good a view as those at the back of the audience.

The screens were installed by attaching two snap braces to each module and clamping these to the scaffolding structure behind. Each column of modules was craned into position and lowered onto a base beam, specifically designed for this system. To avoid the need for unsightly weatherproofing, simple, curved aluminium roofs were designed for each screen, providing a rain cover and acting as a further brace across the top of the columns.



CAD Axonometric view.

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## Yoko Ono Hits LA2

Fans of the avant garde were in for a major thrill when performance artist, singer and widow of John Lennon, Yoko Ono, made a London appearance at LA2 in Charing Cross Road in June backed by her guitarist/keyboard player son Sean's new band, IMA.

The tour, which began in the USA before reaching London, was notable for monitor man Steve Wallace's appearance as FOH engineer. Consoles, monitors and control equipment were supplied by Britannia Row, while LA2's own Tarsin-specified ASS house system, consisting of six MX500 2 x 12" mid/highs and six MX1000 2 x 15" bass units, was used as the main PA. Monitors included six bi-amped Turbosound TFM 350 2 x 15" front wedges and pairs of Floodlight and Flashlight subs for the side fills. The console chosen by both Wallace and monitor engineer, Jerome Fox, was a 20-channel Midas XL3.

Amplification for both monitors and FOH was provided by racks of BSS 760s and 780s, while the microphones specified by Wallace included Ono's Shure Beta 58 vocal mic.

## Midas Sales Leap

Mark IV PAG has announced increased sales of the Midas XL200 front-of-house audio console via the product's exclusive UK dealer, LMC Birmingham.

Introduced last year, the XL200 is classed as an alternative to Midas XL3 and XL4 desks, and in its basic format features a 13 x 8 matrix, eight aux masters, six mono and two stereo groups, eight AutoMute masters, three master faders (L/R/Mono) and eight VCA master faders. Following the first UK sales to Starlight Entertainments for use on musical theatre productions, the desk can now be found on a wide range of applications including conferences, tours and theatre installs. Recent sales include a 44-channel board to JB's in Dudley, a 48-input model to ESS, Mansfield, and a huge 8-input board to MAC in Cheshire who are using the desk on the current tour of Chess.

In addition, XL200s can be found in Blackpool's Winter Garden complex, Bristol's Radio City and Sandwell College. The consoles have also been purchased by a wide range of audio companies including Entec, Cane Green, Blue Box, FX Music, Richard Nowell Sound, Paul Dodson Sound Productions and The Sound Company, plus the Warehouse and Perfect Beat in Scotland.

**DETAILED INFORMATION ON THE SEMINAR PROGRAMME AND PRODUCTS TO BE LAUNCHED AT THIS YEAR'S PLASA SHOW STARTS ON PAGE 60 - FURTHER NEWS NEXT MONTH**

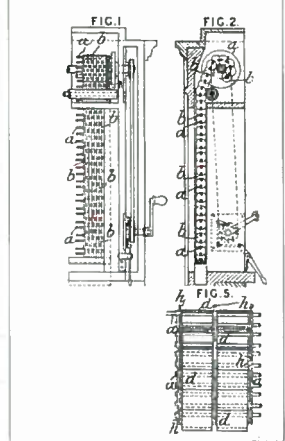
## ONE HUNDRED YEARS AGO THIS MONTH British Theatrical Patents 1801-1900

**Patent 17132 of August 1896: A.E. Schmidt: Fireproof Curtains**  
Throughout the nineteenth century the theatre press and, in particular, *The Stage* and *The Era* are littered with reports relating to theatre fires. Indeed, in January 1896, *The Cambridge Music Hall* in London had been burnt down - but this was not extraordinary. Whenever theatre fires occurred, fire prevention patents followed closely.

This invention relates to a roll shutter type of fireproof or safety curtain, which might be particularly useful for a theatre without a significant fly-tower. The patentee was one August Edmund Schmidt, a jeweller by trade who lived in Leipzig, Germany, and the invention was also considered to be applicable for the protection of jewellers shops against burglary!

See also *Book Reviews*, page 53.

17,132. Schmidt, A. E. Aug. 1.



## Bomb Halts Royal Exchange Theatre

The Royal Exchange Theatre, Manchester (see L+SI May 1995), is temporarily moving premises following the explosion of the IRA bomb in Manchester on June 15th - just 150 yards away from the venue.

Thankfully, there were no major injuries to any of the company, although *The Philadelphia Story* was in rehearsal until the actors and staff were evacuated 45 minutes before the explosion. Damage to the structure of the building is quite extensive, but the famous glass domes, though affected, remain largely intact. The results of detailed structural reports are being awaited and, depending on the outcome, it could be up to one year before a performance can take place at the theatre again.

In the meantime, the theatre has received help from Arts About Manchester, who provided office space for theatre staff, and the Library Theatre, who provided rehearsal space for *The Philadelphia Story*. On June 24th, the operation took up temporary residence at BBC North, who made office space available, together with rehearsal and studio space for performances of the current production, *Hindle Wakes*.

## Autopilot's Invitation to the Dance

Theatre Projects provided an Autopilot for the Chance to Dance event being held at the Fairfield Halls in Croydon. Croydon College of Technology (CCT) School of Art and Design, staged the show in conjunction with the Doreen Bird School of Dance. The event, which is lit by second year lighting design students from CCT, provides aspiring dancers with the opportunity to demonstrate their skills to West End designers and choreographers who attend the annual showcase.

Rob Muller, course director of the theatre department at Croydon College, told L+SI: "There were 22 different dance pieces, some of which were quite complex in terms of following individual dancers and these would have required a huge amount of programming time which we simply didn't have. We decided to give Autopilot a real test. Several of the numbers were quite difficult and particularly a solo piece which started with two open scan heads with an increasing number of primary colours added as it followed the dancer around. The design and operation was by second year lighting design students, so it was an excellent opportunity for them to be using cutting edge technology."

## Crazy for M&M

The Crazy for You tour, which opened in Birmingham in late June, has a host of equipment supplied by M&M through Stage Electrics in Bristol. Lighting designer Paul Gallo replicated his lighting for the original show in the US by opting to use Source Four spots for the UK tour. These are used in a mix of 19, 26 and 36 degree beams, with fast colour changes provided by Rainbow colour changers on the 26 degree lanterns. Effects are being supplied by a Scotty, the portable battery powered smoke machine from the Smoke Factory of Hanover, plus two of its made-for-touring Skywalker smoke machines, also distributed in the UK by M&M.



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## The Real Thing



Euro '96 sponsors Coca Cola employed Laser Grafix to provide projections and display information during the England versus Germany semi final. The display, projected onto a nearby building, was seen by over 70,000 visitors to the game. Laser Grafix used a 140 degree Precision Beam Table with 80 degree Cambridge scanning head controlled with the computerised 'Prisma' control system and mixed Gas ion laser sources.

## Brit Row Celebration

L+S's Mark Cunningham was one of the hundreds in attendance at a party on July 5th to celebrate Britannia Row's 21st anniversary. The bash, held at the London Rowing Club on Putney Embankment, took place exactly 21 years to the day when the company, then owned by Pink Floyd, handled all of the production for the band's legendary Knebworth show.

Wall to wall videos of live performances by The Cure, Simply Red, Peter Gabriel and Pink Floyd traced the company's highlighted achievements, while the incredibly talented solo act, Willie, entertained the party-goers with an authentic range of rock classics, including (appropriately) 'Shine On You Crazy Diamond' - despite the absence of a mound of trademark blue boxes!

Industry luminaries at the party included Cliff Richard's manager, David Bryce, Chris Redburn of Redburn Transfer, Ollie Kite of Edwin Shirley, Screenco MD Dave Crump, LSD MD David Keighley and Oasis's tour manager, Margaret Mousakitas.

## All in a Day's Work

Stage Electrics of Bristol recently secured orders for three Strand lighting desks all in one day! The 430, 530 and 550 desks form a complete family of memory desks and orders for these were placed by Weymouth Pavilion (430), The Mayflower Theatre, Southampton (530) and The Anvil Trust, Basingstoke (550).

## Lighting Shows Merger

The organisers of The Lightshow, Litex and Electrex, with the support of LIF, are in discussions which they hope will lead to the establishment of an international lighting show in the UK for all sectors of the commercial lighting industry.

## New Web Arrivals

Recent new appearances on the World Wide Web include Vari-Lite, Jamo, Crest Audio and Irideon, which are all hot-linked to the PLASA site.

The VL site contains complete product information, specifications, news releases and current listings of the company's Series 300 dealers, as well as Vari-Lite locations across the globe - <http://www.vari-lite.com>.

Loudspeaker manufacturer Jamo can be found at <http://www.jamospeakers.com>, with details of their various representatives around the world. The site is still under construction, but will eventually include full product information.

Also in development is the Crest Audio site, at <http://www.crestaudio.com>. The site will initially serve as a general information resource, but will eventually include Crest's Electronic Product Guide (EPG), a graphics-based, fully interactive tool incorporating video, audio, animation and multi-dimensional graphics.

Architectural lighting manufacturers Irideon can be found at <http://www.irideon.com> for product info, specifications, and news releases, as well as a product support and service area. Coming soon is a technical documentation area.

Other new additions to the Web include Modelbox, Stage Technologies and Turbosound, all of which can be found on PLASA's 'Members on the Net' Web page, which now includes 40 companies. New on the PLASA Web site is the Recruitment Post. For further information contact Lee Baldock at PLASA, on (01323) 642639.

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## New Audio System for Masonic Centre

Long considered a distinguished landmark in Milwaukee, the Humphrey Scottish Rite Masonic Centre recently underwent extensive interior renovation with the addition of a new sound system for its auditorium, centred around power amplifiers and a house mixing console from Crest.

Specified and installed by Professional Audio Designs Inc of Milwaukee, the system features a total of nine Crest amps, eight CA6s and one LA60, which power the auditorium's main speaker systems. Half the CV 601 drives the EAW JF60s at the back of the room, and the other half drives the fly rail and the stage programme monitors. A Crest CV 601 70-volt amp powers the dressing room speakers.

The Crest amps drive a total of 35 EAW speakers, including the two clusters that comprise the main house monitor systems: an array of two KF300isP virtual array systems flanking an SB330P VA subwoofer installed above the valance area at the top of the proscenium and, inset in the ceiling above the arena performance area, six further KF300isPs.

Sound mixing for theatrical productions is based around a zoned/matrixed system using a Crest Century TC 24x4 console. This can be operated from two positions: one fixed at house back-right, and the other a remote multi-pin floor jack for moving the mix position onto the house arena floor. Pictured above are Scott Leonard and Kim DeSpears of Professional Audio Designs Inc with the Crest Century.



## AR5 Award

Irideon's AR5 interior wash luminaire received the 1996 Best New Product of the Year award at Lightfair International in San Francisco. The AR5 interior luminaire and the Composer control system provide an architectural lighting system which creates flexibility in lighting design.

Irideon created the Composer control system specifically to maximise the full potential of the AR5 luminaire. It allows for system configuration, programming and playback from an IBM compatible PC with Windows 95 software. For more complex system set-ups, a remote Master Control Processor can be used, including on-line clock/calendar control, remote station input, and external sequencing input. AR5 luminaires can also be controlled with an Irideon DMX Interpreter which allows programming and operation by a DMX512 console.

## Martin Worldwide

Martin sales worldwide continue apace: Massemo Buriani of Buriani Service Bologna, Italy, has recently ordered eight stacks of the F2 concert system. In the States, TGI North America have added six more W3s to those already installed at Opryland in Nashville's home of country music, whilst on the other side of the world, at the recent China Light and Sound Show, Martin distributors Powersonic took an order from Hui Feng Trading for 10 stacks of Wavefront 8 for installation into The House discotheque in Beijing.

## Celestion Expands Asian Distribution

Celestion has expanded its network of distributors worldwide to include the Kanda Shokai Corporation in Japan, who will distribute the loudspeaker range through their new 'Professional Systems' division. Also joining Celestion's expanding network are professional audio distributors Audio Visual Land in Malaysia and Music Plaza in Singapore.

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## Big TOW Goes East

Following their successful visit to the EnTech exhibition in Australia, Stage Technologies have been awarded the contract to supply a winch/truss system for Cameron Mackintosh's international tour of *Les Misérables*. The show, which will move from Hong Kong to Korea in June for a 16 week run before transferring to south Africa, requires a small power flying system which can be easily moved from venue to venue.

The special requirements of this production necessitate touring a portable system which allows set pieces to fly at speeds of up to two metres per second in every venue. The specially-designed Stage Technologies system incorporates the Big TOW variable speed winch built into a custom-designed portable truss system. The control for each winch will be from a hand pendant which allows for multiple dead positions and variable speed control. The complete truss and winch system has been designed to be flown from the theatre's own bars which can then remain static, leaving the Big TOW winches to lift the set pieces in and out.

John Hastie at Stage Technologies explained: "This particular production of *Les Misérables* is touring in a jumbo jet! We have therefore had to design a system which is strong and light enough to satisfy the requirements of the show itself, but which can also be quickly packed up into suitable pieces for transportation by air."

## Celco up to Spec

The Institute of Electrical Engineers in London has purchased a Celco Pathfinder EPX console and 24 Fusion digital dimmers for installation in their main auditorium. The lighting was specified by Lighting Design Partnership, and formed part of a package purchased from Celco's parent company, Helvar Electrosonic. The Pathfinder EPX and dimmers will run a mixture of stage-type lighting, with Fresnels and profiles in 2kW loads. Electrosonic's Ambience dimmers - identical to the Fusions, but without the DMX512 capacity - will be used to cover the architectural lighting.

Celco have also won an order to supply a Pathfinder desk and Celco Fusion dimmer systems to the Bangkok Marriott Hotel. The sale was confirmed by Celco's Thai dealers, Dyntec Audio Visual. Meanwhile, the company's distributor in the Baltic states, EW Sound & Light, has won a tender to install Fusion dimmers into several television studios in Eastern Europe.

## Milestone for Apogee



Apogee president Ken DeLoria (back left), export co-ordinator Lesa Kinney (back right), vice president, Jim Sides (front left) and national sales manager James Lamb, celebrate the 10th anniversary of the AE-5.

Apogee Sound are celebrating the 10th anniversary of their AE-5 loudspeaker, which continues to be the company's best selling loudspeaker worldwide. The AE-5, the most versatile member of the Apogee product family, has enjoyed a successful 10 years. Thousands of the units have delivered sound to millions, in applications ranging from Democratic and Republican conventions to the Oscar and Grammy award shows and the 1996 Olympic Games.

## Lulu and the Lampshade!

*Howard Eaton Limited has provided Glyndebourne's new production of Lulu with a massive, flying tracking and retractable rotating lamp incorporating a 5kW zoom. This imposing lamp, which features an unusually large 800mm Fresnel lens is central to the scenic design of this new production and had to be capable of following the action on the stage. HELL designed and built a circular track and rotating beam from which the lamp is suspended.*

*This was undertaken in conjunction with the recent project to produce the five, four and a half metre high, cracked glass bottles of various colours, for the new production of Theodora at Glyndebourne.*

## BASH Supply National Convention

BASH Theatrical Lighting, based in New Jersey are to supply the full lighting, control, power distribution, rigging and truss system for the 1996 Republican National Convention, which takes place from August 12th to 15th, 1996 in San Diego, California.

The lighting system has been designed by Jim Tetlow and includes over 200 ETC Source 4 spotlights, more than 1,400 Par 64 units and over 2,000 ETC Sensor dimmers. Control will be via an ETC Obsession console with five remote nodes connected via an Ethernet network.

Among the special effects on the show are 50 High End Systems AF1000 Dataflashes, over 100 Wybron ColorRam II scrollers and 100 High End Cyberlights. Control for these will be from a pair of Whole Hog II consoles. Projections will be handled by four Great American Market RDS 2.5k HMI projectors.

Power distribution for the event will include more than 15 miles of six circuit multi-cable. The truss system will utilise more than 2,300ft of BASH 20 inch Box Truss and will be suspended from over 220 CM Lodestar chain hoists.

## Turbosound Order

Another record-breaking order has been signed with Turbosound, this time by the Spanish subsidiary of the European industrial giant, Siemens.

Siemens was a prominent supplier of lighting and sound systems to Expo '92 in Seville, and, in its wake, set up a rental division to provide the equipment on a commercial hire basis. As a result of its success, Siemens S.A. has now decided to invest in its longer-term future, and the purchase of 48 stacks of Floodlight and 24 stacks of Flashlight is the first stage of this initiative. The Sound & Light division, based in Seville under the guidance of Oscar Fragio and Ivan del Rio, purchased its inventory from Turbosound distributors Lexon.

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## Lord of The Dance



Former Riverdance front-man, Michael Flatley, is touring with a new show called Lord of the Dance. The producers John Reid and Harvey Goldsmith went to great trouble to support Flatley's creative talents with an experienced team - the director Arlene Phillips and costume designer Sue Blane from the West End musical theatre, coupled with the designers Jonathan and Cheryl Park and lighting designer Patrick Woodroffe, from the world of rock and roll. In addition, a celebrated Irish dance 'master', Marie Duffy trained the troupe of 36 young Irish dancers in the new choreography, whilst Ronan Hardiman, a young Irish composer, provided a new score of music.

'Time stood still . . . the stories had all been written . . . but the ancient clans, sitting in their stone circles, were troubled - a new dark power had emerged to challenge the Lord of the Dance'. This is the spirit's dream which, moving symbolically through time and space, tells the old story of love, desire and danger as the different dances segue into each other and the mix of theatrical and rock and roll techniques produces an ever-changing set.

Designers Jonathan and Cheryl Park have created a stunning set where the 18m x 9m 'dance zone' is flanked by six 5m high towers or arches, reminiscent of standing stones faced with superscale Celtic strapwork. These are backed by a giant portcullis suspended beneath an angled arch of 28m that extends the universe of the set wide out into the wings to give it the necessary heroic rock and roll scale for arena venues.

Patrick Woodroffe has, together with lighting programmer Dave Hill, lit the set with great flair (18 VL6s, 20 VL5s, 120 Aeros/Pars, eight Molefays and Colourmags, nine DHA Light Curtains, 24 Pars plus colour scrollers, three overstage and two FOH spots). Preferring side lighting, he has incorporated three narrow beam short nose pars with colour scrollers into the lower legs of the towers and given them each a pair of sweeping VL6 eyes. Four additional colour scrolling Pars colour and uplight them. The mid-stage truss carries the DHA Light Curtain, whilst a rear moving truss with six VLs creates tension and drama as it drops in for two scenes. The lighting was supplied by Meteorlites.

Starting out framing the portcullis and evocative of a castle keep, the six towers change position (man-draulics!) through the performance - close and intimate for solos, wide and expansive for the huge set pieces and famous 'line' dances. Silk banners, with Cheryl Park's original designs, drop-in and then off, kabuki-style, to symbolise the 'Celtic dreams'.

The show opened on 2nd July in Dublin and has since played at the Liverpool Empire and Manchester Apollo, before taking up its current month-long residency at the London Coliseum. Thereafter, the show returns to its grand scale to tour the UK arenas before setting off worldwide.



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## World Lighting Fair

The bi-ennial World Lighting Fair opened at the Pacifico Yokohama Exhibition Hall in June, with a record number of companies exhibiting. The hall, which forms part of the rapidly expanding waterfront area of Minato-Mirai 21, played host to an international gathering of lighting manufacturers. Amongst these were some of the major players in the market, including **Clay Paky**, there to promote the Golden Scan HPE, and **ETC** from the US, showing their range of lighting control and dimming equipment. **TMB Associates** also travelled from the States, and, as usual, had a grand array of essential equipment, whilst Australian manufacturers at the show included **LSC Electronics**, with their range of control equipment and **Bytcraft**, who demonstrated their State automation system.

A cluster of UK companies were to be found at the show, including **AC Lighting**, showing the Wholehog II and Jands-Hog 250 and 600 desks and **Artistic Licence** (represented by Space Engineering Works), who launched the AL 3012, a dimmer designed specifically for the Japanese market using Artistic's dimmer chip technology. **Avolites** were on the stand of distributor, **First Engineering**, and were kept busy demonstrating the Diamond 2, Sapphire and Pearl desks.

**Celco** were to be found on the stand of Technical Supply Japan (TSJ) where the M9 videowall system, together with Celco's established range of desks, was being put through its paces. **Pulsar**, on the stand of **Ushio U-Tech**, were showing Masterpiece, whilst **Slick Systems** and **Total Fabrications** were there to talk trussing.

Inevitably, Japanese manufacturers had a major presence at the show and **Fuji**, **H Ito & Co**, **Matsushita**, **RDS Corporation**, **The Rock Corporation**, **Space Engineering Works**, **Technical Supply** and **Tokyo Butai Shomei** all had impressive stands. By far the biggest display was a combined effort by **Vari-Lite Asia**, **Lighting Big 1 Co**, **Hibino Corporation** and **Shimizu Production Services Inc.**



The impressive stand of Vari-Lite Asia, Lighting Big 1 Co, Hibino Corporation and Shimizu Production Services Inc.



The official opening performed by Marc Brickman (LD), Tsuneo Tanaka (general director/chairman of the organising committee), Toshikazu Inui (Ministry of Trade) and Yasuo Ito (Technology Association - Japan).



Wayne Howell of Artistic Licence, with Kewichi Kumagai and Takeshi Hayakawa of Technical Supply Japan and Keith Dale of Celco.

Running alongside the show were a number of seminars, with invited guests including lighting designers Marc Brickman and Motoko Ishii.

## High End Munich



High End president Bob Schacherl (left) officially opens the new office with Harry van den Stemmens, who will run High End GmbH.

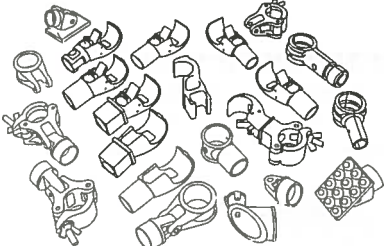
Texas-based lighting manufacturer, High End Systems, has opened a new office in Munich, just a short distance from the city's airport. High End GmbH is the third HES location worldwide and follows the opening of a Singapore office last year. Harry van den Stemmens, formerly of Zitron and Strand Lighting Germany, will manage the company. Claas Ernst, also of Strand Lighting Germany, has joined as sales engineer whilst Mark Sledentopf will head the technical department. Frank Lischka, a lighting designer, will also join the team shortly.

For High End, the last few years have been a period of major growth and the company now exports to over 60 countries worldwide. In the last year alone, they have seen a 25% increase in sales, and the new office is intended to be the foundation for further expansion into Europe, particularly the Eastern European markets. The rapid growth has been stimulated by new product development, and the latest, of course, is the Studio Color - 2,000 of which have now been shipped worldwide. A raft of further product developments are promised, whilst there are hints that a new architectural range will be launched at PLASA.

Bob Schacherl, president of High End Systems Inc, hopes that the Munich office will emulate the success of the Singapore operation, which now carries a \$2million inventory and has picked up some major projects in South East Asia. Following the departure of Anthony Goh, the Singapore office is now being run by C C Tan.

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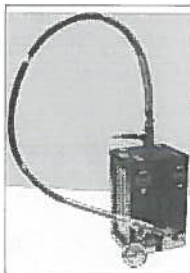


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# C'EST LA GUERRE

Schönberg and Boublil's latest creation, *Martin Guerre*, comes to life at the Prince Edward. Robert Halliday, a member of the technical team, charts its progress

It was probably inevitable: on the one hand composer Claude-Michel Schönberg and writer Alain Boublil, the team who had taken a classic French novel, *Les Misérables*, and converted it into one of the most successful stage musicals in history; on the other, another classic French story, that of *Martin Guerre*, a man who abandoned his bride but whose place was taken by an imposter who carried the deception off for many years - until the real Martin returned. It is a story full of dramatic potential; so full, in fact, that it had already been plundered for two films - the *Return of Martin Guerre* with Gerard Depardieu, and *Sommersby*, with Jodie Foster and Richard Gere.

The greatest surprise probably isn't that Boublil and Schönberg would seek to bring the legend of *Martin Guerre* to the stage, but that it took so long. Perhaps they didn't want to be labelled as writers of French musicals, or adapters of other people's stories. Certainly their second show, *Miss Saigon* - a sweeping epic set against the backdrop of the Vietnam war - didn't fit into either of these categories. But as it followed the path blazed by *Les Misérables* around the world, it cemented their reputation, the only people able to match the commercial success of Andrew Lloyd Webber. The lasting appeal of their work was clearly shown last October, when the 10th Anniversary of *Les Mis* was celebrated with a spectacular concert at the Royal Albert Hall.

But even as the audience rose to its feet to acclaim that performance, Boublil and Schönberg's *Martin Guerre* was moving into its final phase. The process had been lengthy, from an initial idea while preparing the New York production of *Miss Saigon*, through a major change of approach at Cameron Mackintosh's request in 1993, to the appointment of a director and designer soon afterwards. Moving the show out into the real world had also been delayed by the log-jam of shows occupying London's musical-sized theatres.

## THE PRODUCTION

One of Mackintosh's great strengths lies in finding the right people for his shows, even if the choice at first seems unconventional. Trevor Nunn is now firmly established as one of the leading directors of musicals, though that wasn't the case when Mackintosh decided to let the very seriously-minded then-director of the RSC oversee *Cats*. The years since have seen Nick Hytner picked from the world of subsidised opera and drama for *Miss Saigon* and Sam Mendes given a budget far larger than those for his acclaimed Donmar Warehouse musicals to take a fresh look at *Oliver!* *Martin Guerre* was going to be in a different style from the authors' earlier shows and called for the story to be told by a strong ensemble company, carefully served by a precise - but minimal - quantity of scenery.

These considerations took him to director Declan Donnellan and partner, Nick Ormerod. Both gave up careers in law to form Cheek by Jowl, the innovative touring theatre company which, since 1981, has gained a formidable



*Martin Guerre* - a story full of dramatic potential, ideal for Boublil and Schönberg.



reputation worldwide. Their approach has been to give clean, clear readings to classic stories - occasionally with a novel twist - but with the productions always actor-led.

Away from Cheek by Jowl, the pair's reputation has been further enhanced by a series of acclaimed productions at the Royal National Theatre: *Peer Gynt*, *Funeteovejuna*, the British premiere of *Angels in America* and a revival of Sondheim's *Sweeney Todd*. It seems likely that it was the combination of these that influenced Mackintosh's decision.

Of course, creating a large-scale West End musical is not the same as creating a small-scale touring show. Audiences paying £30.00 or more for a seat expect to see where their money has gone - there has to be at least some scenery. And the schedule of a large scale musical demands that the scenery be designed long before the rehearsals start, so that it can be built and installed ready for the cast to move into it.

With director and designer new to this style of working, Mackintosh completed his creative team with trusted collaborators - choreographer Bob Avian, orchestrator Jonathan Tunick and, on the technical side, David Hersey as lighting designer and Andrew Bruce (the man with the greatest experience of Boublil and Schönberg shows) as sound designer.

Overseeing all of their work was production manager Nic Harris, a Mackintosh 'old-hand' who has been responsible for *Follies* and *Miss Saigon*, as well as knocking off a quick tenth anniversary *Les Mis* concert in the midst of planning the new show.

## DESIGN

Nick Ormerod's design for *Martin Guerre* went through several versions prior to the one that can now be seen on the stage of the Prince Edward Theatre. All represented the sixteenth century French village of Artigat, but in slightly different ways. The version most talked about by those who thrive on West End gossip was the one presented two years ago where, in the final scenes as the fighting between the protestants and catholics (a major theme in the show) intensifies, Artigat was actually seen burning on stage. After lengthy negotiations with Westminster Council, Nic Harris even had the concept approved - but that kind of spectacle did not fit with Donnellan and Ormerod's minimalist approach; the only remnant of that concept is a scarecrow which really does burn each evening, courtesy of Howard Eaton Lighting - or Sussex Scarecrows, as they have now been re-christened by props supervisor Yolanda Jeffrey.

The final design is deceptively simple: a 'box' of green side and back walls and green borders featuring a large revolve, close-on 10 metres in diameter, set into a gently textured brown floor. There are also tall, thin trees, five permanently on stage as part of the most basic setting, with a further seven that can be flown in, and four more that can track on and off-stage to form various sections of forest. All of these elements are automated to facilitate scene changes of the kind where the trees land exactly as the revolve stops moving. The trees were powered using Stage Technologies' Big Tow counterweight assist winches attached to the theatre's



The forest scene features a mixture of Pani projection, DHA gobos, and ETC Source 4s which combine to create the stunning dappled effect on the trees and forest floor. photo: Wyatt Enever

counterweight system for the flown trees, and Tow Track winches to move the tracking trees.

ST's Ted Moore also had to overcome the tracking trees' tendency to swing when knocked by passing actors, which he did by building linear actuator 'stamper' into the base of each; when in position, these drop down to lock the tree to the floor. The company's motors also power the revolve, using a new, as yet un-named, revolve drive consisting of one of their standard motors driving a toothed belt, which engages with another belt attached to the rim of the revolve. The *Martin Guerre* revolve uses two such drives, one slaved from the other; compared to traditional revolve drives they occupy a bare minimum of space and, because they shouldn't slip, the control system can keep track of the revolve's position.

This just leaves the little matter of five trucks that can be arranged in various positions to form different sections of village. The trucks are all two storey, open-frame structures designed to resemble the wooden-framed houses that Ormerod found on a visit to the real Artigat, and in the pictures of the sixteenth century artist Bruegel, whose work has provided much of the inspiration behind the show's look. The two smallest trucks run up and down either side of the stage on tracks and can rotate around their own centres to sit at any angle to the stage.

Relatively late in the design process, it was realised that these trucks would need to vanish at times; the solution devised by Nic Harris and Delstar, who were responsible for the engineering on the show, was to take the tracks upstage and then turn them 90 degrees, so the trucks actually run round a corner and off into the wings. The biggest truck also runs on a track: straight this time, but with the complication that the truck has to be able to run up and down the revolve, but also off the upstage edge of the revolve into a parking bay, where it could then be hidden by flying in a moving section of the upstage green wall.

This made it impossible to use any kind of chain or belt drive: instead the truck drives itself up and down-stage using motors powered from its own batteries. Control is sent from Stage Technologies' Acrobat! control desk by radio to an on-board computer, and here the advantage of the new revolve drive becomes clear, since

the computer should be able to guarantee that the track on the revolve is lined up with the upstage track before allowing the truck to move upstage. As a back-up, the traditional circle-front camera giving a full-stage view of the stage has been replaced with one that has remote control of position, zoom and focus, allowing the automation team to zoom in to any section of the stage to check positioning.

The two medium-sized trucks provided the biggest challenge: Mark Ager of Stage Technologies had to make two trucks that could move anywhere on stage, quickly, along a straight or curved route, under their own power, sometimes carrying members of the cast - and accurately go to the right place even when being spun around on the revolve. This is not a new challenge. The 1962 production of Lionel Bart's *Blitz!* had freely moving trucks attempting to solve the problem by putting a driver in each, UV marks for them to follow on the floor, and a 'spotter' in the grid with a radio in case it all went wrong. The New York version of *Chess* employed a similar scheme, but with LEDs drilled into the floor, which was not entirely successful by all accounts.

But it is a challenge that has now been met. *Martin Guerre*'s two roving trucks can be programmed to run to any point on the stage, to move along a straight line at any angle or a curve, or even to rotate about their own centres - and they do it, to an accuracy measured in millimetres.

The trucks have a rotating castor in each corner - they are, at heart, just giant shopping trolleys! Movement is generated by two Delstar friction drives, but these can be lifted and rotated to any angle independently of each other. When set to the same angle the truck will move in a straight line in any given direction, when set to different angles it will move in an arc. The motors are powered from a collection of car batteries built into the base, and control is sent from the Acrobat! desk via a radio link to an on-board computer. Safety comes from a built-in emergency-stop cord and also from a radio safety system: if the radio signal to the truck is cut off, it stops moving.

This system alone would work well in a perfect world; tell the truck how far to move, in which direction, and how quickly and watch it

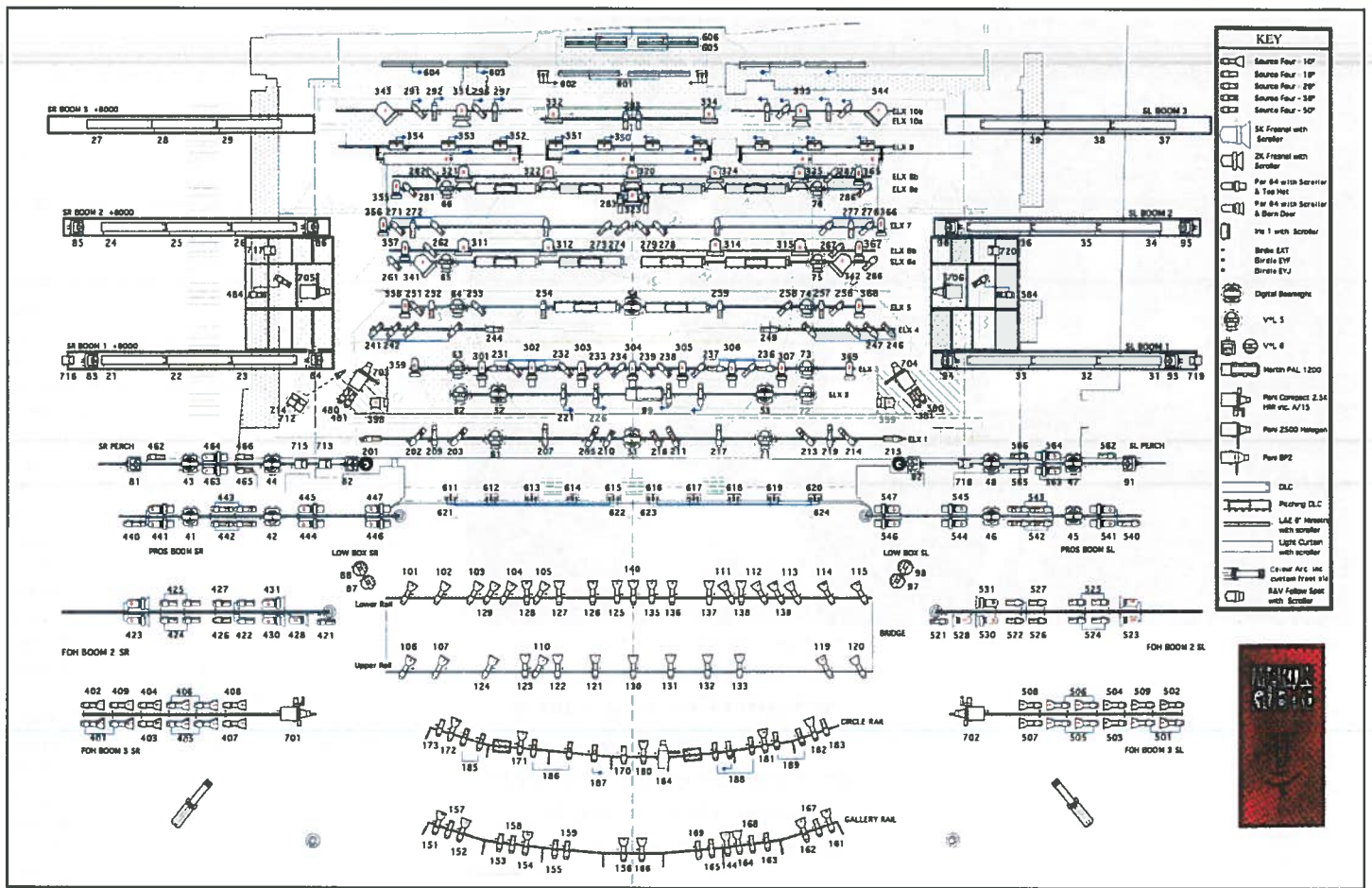
go there. The problem is that if, for any reason, the truck didn't run to the right place, every subsequent position would be slightly out, and by the end of the show could be a long way off. The production team strove to minimise the problems; extra metalwork had to be installed to support the revolve (since it weighs three tonnes and, in turn, would have to support trucks and actors), and Paul Craven of Delstar spent long hours with a laser leveller ensuring that the new floor was completely flat and level with the surface of the revolve. The usual gap between the revolve and its surroundings was also minimised - remarkably, it is consistently just a few millimetres all the way around.

But the chance of positioning errors remained quite high; if nothing else, a cast of almost 40 running around the stage and jumping on and off the trucks would probably knock them off their positions every now and again. Ager realised that he needed some way of establishing where the trucks actually were, rather than where the computer thought they ought to be. He looked at several ways of doing this, including talking to the people behind Global Positioning satellite systems, who told him that in a theatre buried in the middle of London, they couldn't give him the precision he needed. Eventually, his investigations led him to Autopilot, Wybron's automatic follow-spotting system. A prototype truck was made and tested at Delstar; this showed up some teething problems which were quickly overcome, but more importantly, and much to the relief of the creative team, proved that the concept could be made to work.

The final trucks, created by Delstar with the scenic work carried out by Victor Mara, now each carry two Autopilot transmitters, one in each of two corners; this allows the system to accurately monitor the truck's precise angle as well as its position. The Autopilot receivers are distributed on overhead bars and at the top of the proscenium booms - a set-up which took some time to refine, because the desire to mask the lighting rig also made getting complete stage coverage with the receivers, while keeping them out of sight, quite difficult.

The Autopilot box was calibrated with the receiver's positions using a spare transmitter - and from then on has tracked the position of the trucks, passing the information to some custom software added to the Acrobat! desk. The whole system has subsequently been christened Explorer! This allows the desk to generate a real-time graphical display of the trucks' actual and target positions, giving automation operator James McKee a clearer display of what is going on than a screenful of numbers would. For plotting new positions, the trucks could just be pushed into place by the stage crew and the position recorded.

But if the technology is a triumph - and it is, then the real heroes of the operation are James McKee and stage manager Greg Shimmin, who had to take the rough set movements generated in the rehearsal room, which was equipped with a revolve and three small, manually operated 'baby' towers, and translate them into actual movements on stage. Their patience as two weeks of careful programming was thrown out of the window when the director, designer and producer arrived in the theatre, finally grasped the true potential of the set and started to play with it, was quite incredible. And the triumph of the show's scenery owes much to their work.



The intricate and elaborate lighting set-up designed by David Hersey.

And the real triumph, for once, isn't the technology being used for its own sake: it is that the audience are completely unaware of the way the technology is used; the set simply appears when it's needed and disappears when it isn't. But the final sequence of the show, as Artigat burns and the trucks go through a series of complicated twists and turns on a continuously rotating revolve, is incredible to watch. After *Oliver!*, then one of the largest systems Stage Technologies had worked on in terms of the number of automated items, Ager commented that he was still waiting for the show that pushed their control system to the limit - he thinks this show is it.

### LIGHTING

In many areas, *Martin Guerre* felt like the final proving ground of the expertise and technology built up over a decade of producing the British 'mega-musical' - the new technology used in automation, in particular, felt like it was the achievement that many earlier shows had been leading up to. David Hersey's lighting design had a similar feel - as if technology was finally matching years-old expectations, summed up when, plotting in the two Pani 2.5k HMI projectors FOH, David remarked: "I can't believe I'm turning projectors down!" In fact, much of the lighting technology used on *Martin Guerre*, although new, has roots that can be clearly traced through David's earlier shows.

His design makes extensive use of glass gobos, to project tonal forest images onto the set's green surround, for example. Glass gobos are notoriously fragile and in the past have required careful lantern selection and precise field alignment if they are to last for any length of time. A year ago, this problem was encountered on *Burning Blue* - and solved by switching to ETC's Source 4 profiles. Their

dichroic reflector means that the gobo stays cool. And their superb optics and custom bulb mean that the image is still very bright and, if required, razor sharp. Source 4s have become the standard Broadway lantern in the past few years; the availability of the 240V bulb now means that British users can enjoy their benefits. *Tommy* led the way, but *Martin Guerre* followed quickly behind - every profile spot in the rig is a Source 4, a mixture of 10, 19, 26, 36 and 50 degree units.

It's incredible to think that where *Crazy for You* had three ellipsoidals ganged together on the Prince Edward's high FOH lighting bridge, and *Oliver!* had enormous Alto 2.5k profiles front of house, *Martin Guerre* uses Source 4s - and they are brighter! No, they don't have the versatility of a zoom-lens profile, but the lenses are easily interchangeable, if required.

The rest of the conventional rig is more traditional: Arri 2.5k Fresnels, picked for their compact dimensions, Par 64s, Iris-1 floods, and 5k Fresnels providing three-quarter backlights. With a simple, but versatile set, it would be left up to the lighting to provide much of the variation in appearance and, to this end, Hersey and assistant lighting designer Jenny Kagan felt that they needed as many colour options as possible. To achieve this, around 33 of the Par cans, all 13 2.5k Fresnels, all four 5k Fresnels and 10 Iris-1s were topped with Rainbow scrollers. The Iris-1s alone weren't felt to provide quite enough coverage to the bottom of the back wall, however, so six of M&M's nine-lamp light curtains with built-in scrollers were included to provide a strip of toplight to the centre of the wall, along the line where the light from the Irises started to drop off.

It was also felt that light from the bottom was needed to give a sense of depth to the horizon line; there was just room to squeeze L&E

M16-battens into a floor slot between the back wall and the metalwork required to support the trucks. The problem was, though, that the throw was so short that unless all of the lamps in the batten were on, gaps would be visible - so using three colours in the three circuits to allow colour mixing was impossible. The solution had to be a scroller - but no-one produced M16 batten scrollers.

Until Dave Isherwood and Bryan Raven of White Light, who supplied the whole rig, came up with an ingenious solution: the prototype light-curtain scrollers that were created for *Miss Saigon* and survived for six years before being replaced by Digital Light Curtains. By attaching short 'legs', the scrollers could be made to stand astride the battens. The four outer units had plenty of space; the two central ones required Isherwood to shorten the scrollers by a few centimetres, with the control electronics separated from the scroller itself. The result is that where the metalwork used to proudly proclaim 'Rainbow', it now says 'ainbow' - apart from that minor change, the scrollers function perfectly in their new location.

There was still, however, the problem of the gaps between the battens caused by the positioning of the up-and-down stage steel girders supporting the big truck. On a 'normal' show, the lighting designer might have lived with the gaps. Here they were filled by sitting three birdies underneath a Par scroller. With the battens and scrollers topped by macralon, the only remaining concern was whether the scrollers were getting overly-hot. Production electricians Gerry Amies and Greg Hamlyn tackled this by installing a comprehensive 'air conditioning' system, with fans blowing cold air through ducting that runs along the lengths of the troughs. By pointing two Smoke Factory Skywalkers into the intakes, and making some



Above and opposite page: scenes from the West End production of *Martin Guerre*.

judicious holes in the macralon, this now does convenient double-duty as a very effective smoke distribution system!

Designing a lighting rig for a show months before that show has even started rehearsing, is a process fraught with problems. The traditional approach of putting in some covers, then specials carefully selected for particular moments seen in the rehearsal room, just isn't possible. This show presented an even greater challenge than usual. Normally at least some elements of the set are fixed: a track will indicate the likely position of a truck, and so some lamps can be usefully positioned for action on that truck. The free-ranging trucks being produced by Stage Technologies, while superb at allowing artistic freedom, made it very hard to decide where to put any lights.

David Hersey went as far as he could along his normal route of claiming as much space as possible and filling it with lights - though this did lead to an unusual assortment of split bars necessary to work around the flown trees. Hersey went down the route of automated lighting because a light that can move and change colour can not only be focused quickly as and when required, but can serve many functions, so making as much use as possible of the limited rigging space. The set seemed likely to call for strong backlight, so 10 pitching Digital Light Curtains were included in the overhead rig, for their ability to provide strong directional strips of light through the wooden structures - and for the possibility of pitching them in and so getting light inside the trucks even if they ended up quite close together. The wooden texture of the set also seemed likely to take sidelight well, and so strips of three non-pitching Digital Light Curtains were rigged on each of three booms either side of the stage - which were actually custom-made ladders from MetScene Fabrication.

There was also need for a washlight of some kind, and for this Hersey turned to the Vari\*Lite VL5B, the variation of the successful VL5 with a revised set of dichroic filters that promised to be able to deliver the cool blue tints that the original couldn't. Six of these per side were deployed on bar-ends above the tracks for the small side trucks, the intention being that their primary function would be to provide light into

***"As Martin Guerre sets off on what will hopefully be a long run, it leaves behind a bunch of people slowly trying to re-adjust to real life."***

these trucks wherever they ended up on stage. In practice, they do this very well, even in cool blue shades; they also do much more besides, including the strong colour and movement for one deliberately surreal 'nightmare' moment in the show.

Which left two gaps in the 'armoury'. The first was for a hard-edged moving light, mainly to provide gobo washes into the set. The problem with all of the hard-edged moving lights currently available, from our point of view, was their light source - generally some kind of HMI, MSR or other discharge bulb dimmed using a mechanical shutter. For rock and roll this is fine, but for theatre, especially on those where the rigs are predominantly tungsten, it is a problem. The white discharge lamp always stands out, and it is impossible to match colours to the rest of the rig. And the dimming, especially when controlled by DMX, is always - whatever the manufacturer's claim - 'different' from every conventional lamp. In the past, lighting designers have lived with these problems because the lamps' versatility made up for it.

But this was a big-budget, large-scale West End musical. Why should we live with it? Anyone able to offer an alternative would have a long-term West End hire that was essentially guaranteed, probable 'repeats' of the show around the world and a brilliant product for other theatre lighting designers into the bargain. There have been accusations that shows like this are all about 'boys talking about their toys'; in fact, it is this kind of show that provides the impetus (and funding) for this type of toy to be developed. And, over time, those 'toys' will filter down through the rest of the industry. The scroller was once a 'toy' developed for this scale of show. It can now be found on productions at all levels.

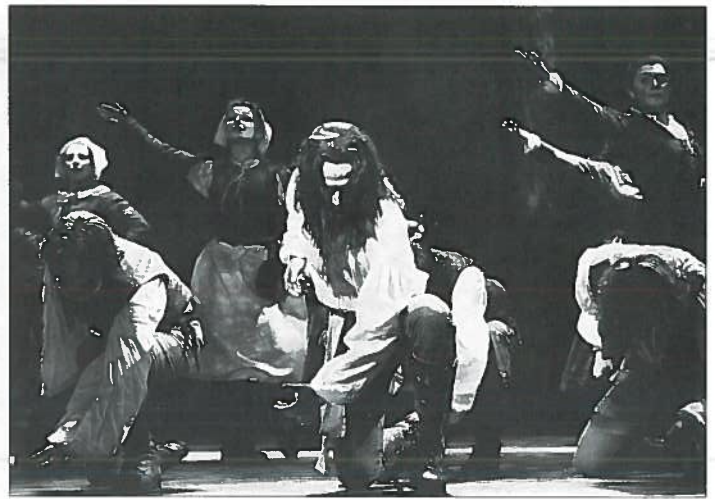
Vari-Lite have been making gentle mutterings

about a tungsten version of the VL6 for some time, and Ed Jackson and the team at Greenford quickly took up the challenge, modifying a 6 to take the old VL3 tungsten bulb and altering one of their new Constant Current Control dimmers to generate the 55V supply it required. Once Hersey had agreed the light met his requirements, Dallas produced a batch of the 'real thing', or the VL6BX as it is known. The result is a compact, versatile little tool. It's not as bright as the traditional VL6 with its 400W MSR lamp - and having something as bright as a 1k lamp (or a Source 4) would, of course, have been better. To achieve this, Dallas need to commission a custom bulb and modify the reflector, and I sincerely hope that they decide to move forward with this project. But the highest testament to the 6BX is that, in *Martin Guerre*, you never notice them. They are the same colour temperature as the rest of the rig, and fade in and out in exactly the same way.

While pressuring Vari-Lite for that product, a little bit more pressure was thrown in by asking them to make the lights controllable by 16-bit DMX - i.e. using two control channels for each of pan and tilt to increase the positional resolution of the light. This is becoming common practice in moving lights, and is something else Vari-Lite had been thinking about for some time. Brian Glenn and the programming team in Dallas decided that the time was right, and so Vari\*Lite DMX software version 4 was born. The result is that, for the first time, it is possible to do long, slow movements on the lights using a DMX desk, yet still retain much of the smoothness they have when run from an Artisan. More importantly, the lights return to plotted positions more accurately. Here another 'new' piece of technology proved invaluable: electronic mail really does banish the problem of dealing with people in different time zones.

Whereas the VL6BX was a modification of an existing product, the other 'gap' in the armoury took much more work to fill. David Hersey has long been a fan of beamlights, specifically the R&V 500W unit, which appear on most of his shows either as on-stage followspots, as specials, or both! His 'dream product', which he has long talked about, is a beamlight which can move and change colour. But the beamlight is a niche product - none of the big players in moving lights could understand the attraction of that type of unit. When they said the same thing about the Light Curtain, DHA set to work to develop their own version, completing the first DLCs for *Miss Saigon* in New York.

DHA had been kicking the Digital Beamlight project around gently for a while and so some initial design work was already underway, but suddenly the team, led by chief engineer Philip Nye and hardware designer Richard Harrison, had a real deadline to beat. In six months between November 1995 and April 1996, the Digital Beamlight was born. It uses the same 500W crown-silvered bulb as the R&V unit, but everything else from the reflector out is completely new. With its single swing-arm design and compact lamphouse it looks like no other moving light: the lamphouse is so small because the spill-rings are integrated into the scroller, and the scroller is incredibly thin because the drive motors are built into the colour spindles. Its optical performance is also unlike any other moving light: when first brought into the theatre, it was subjectively a tighter beam than any R&V 500W - but also



much brighter, with the brightness approaching that of a 1k R&V. More importantly, the beam is remarkably free from the scatter that plagues some R&V units. DHA later measured the unit, recording an output of 13506 lux at 10m and a half peak angle of 1.9 degrees.

And, of course, it moves - very smoothly and very accurately, running in 16-bit mode from DMX. It also changes colour (the scroller containing up to 11 colours) and you can remotely control the movement of the bulb in the mirror, so if the beam is ever too tight - and this is a distinct possibility with this unit - you can spread it a little. It's also remarkably easy to set up - you simply give it one piece of independent mains, which provides both control power and power to the built-in dimmer and either DMX or DHA's own LightTalk protocol. The final version will be launched onto an unsuspecting world at the PLASA Show. It will be well worth looking out for.

Of course, all of this equipment is completely useless without something controlling it. The Prince Edward owns a Light Palette 2 - a legacy of *Chess* 10 years ago - but it was realised from the beginning that it wouldn't be used to run this show! The ambition was to devise a control system which would leave the control of both the conventional and moving lights with one operator. On *Oliver!* this led to the combination of the house Galaxy 2 running the conventionals and an Imagine 3 running the moving lights, both triggered from one 'go' button by one operator. When that set-up was specified, lighting control manufacturers were only just beginning to wake up to the problem of moving lights - and it is this that has become the main theme of desks launched in the past 18 months. This meant that there were plenty of options to examine. We were increasingly looking to pick one desk that could run the whole show - over 300 conventional channels, 80-odd scrollers, and 40 moving lights.

Which led us to Strand and their 550 range. This desk had interested me when first previewed at the PLASA show in 1994 and software upgrades since have seen it come along in leaps and bounds. We tentatively proposed using it on *Martin Guerre*, sending Strand a list of software improvements we'd like to see implemented. They achieved most of them (including 16-bit position fades, thus allowing us to make full use of the 16-bit control available in all of our moving lights), and the desk was on the show.

Or rather, two desks were. The problem with dealing with a big mixed rig isn't usually the

technology keeping up - it's the humans. A lighting designer will generally interact with moving lights in a different way to conventionals and plotting a show is therefore quicker if one person can get on with dealing with the moving lights while the other plots the conventionals. We thus specified a Strand 550 to plot the moving lights, and a 530 which Kevin Burgess, the theatre's chief electrician, would use on the conventionals; once the show had opened and settled down, the data from the two desks was merged leaving one desk and one operator running the show.

Power and data from the desks then had to be distributed to the rig. The conventional lights, DLCs and VL5s were run from the theatre's own Bytecraft dimmers. For independent power to the automated lights, Gerry Amies had White Light build a custom breaker rack that allowed independent power to be patched into spare ways on multicores running dimmer feeds, so reducing the number of cables that had to be run to each bar. For data, we decided to run two separate DMX rings, one controlling the house dimmers, scrollers and Pani projectors, and the other all of the moving lights.

The Prince Edward contained a simple DMX network installed by Howard Eaton Lighting as part of the earlier refurbishment, but it wasn't really designed for the amount of equipment on *Martin Guerre*. HELL were thus called back in to replace it with a DMXPort installation, which ran two separate DMX rings to every useful point below, on and above the stage, and to the top of each of the front-of-house lighting booms. At each position the data could be accessed by plugging into a buffered outlet box, and in key positions multiple boxes were installed to allow isolated data to be run to different locations without the need for splitter boxes. Data could be fed into the system from the stalls or the lighting box, and data could be returned to either location.

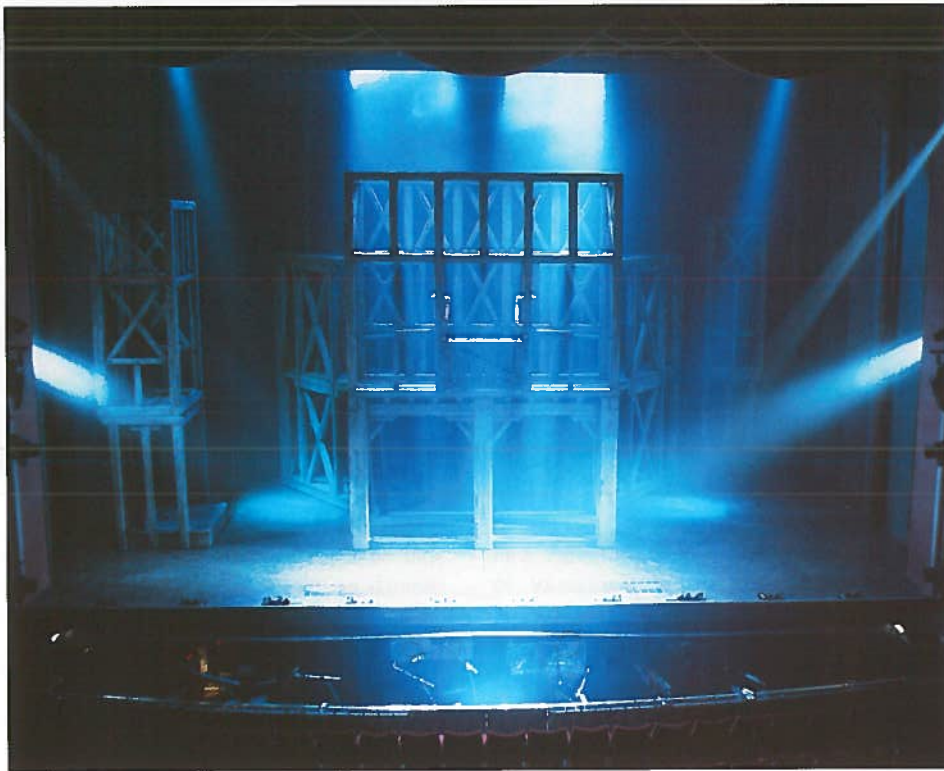
Returned? Well, with an Autopilot box kicking around on stage, it seemed silly not to make use of it! Originally, there was a nightmare sequence in the show which David Hersey envisioned lighting by having a beam of light follow an Autopilot-wired actress. To achieve this, one of Martin's PAL1200 moving mirror lights was included in the rig. Having taken part in the moving light super-session at last year's PLASA show where Autopilot was used in 'Co-Pilot' mode to record moving light positions back into the desk, it seemed wise to include that function as well - especially since the 550's 'copy from DMX' command makes

this so easy. DMX from the Autopilot box is thus split, being fed both to the PAL and to the VL5Bs (though we haven't had time to upgrade the Autopilot with the new software necessary to drive the 16-bit VL5s) and back to the 550.

In the end, the data recording mode proved most useful: the nightmare scene was re-written to a version that didn't need auto-following, but we gained a sequence where the PAL needed to follow a point on the revolve - a hard task, since the PAL was rigged away from the revolve's centre. But by placing a transmitter on the edge of the revolve, having automation rotate it by a series of known amounts and recording the positions back into the desk, a movement sequence was built up that could then be used as required. In the end, that sequence was cut as well - but not because the technology couldn't cope! And the PAL has still proved invaluable - its gobo wheel is deep enough to take the dichroic colour glass gobos that DHA are now producing, in this case, a beautiful stained-glass window.

And the results achieved with all of this technology? From a technical viewpoint, the equipment has all worked very well. The desks are a triumph; the way that the 550 groups colour information with lamps makes it very easy to keep track of what is going on. When we started plotting the show (indeed, for most of the technical period), Declan Donnellan would launch into a scene pausing only when absolutely necessary to let the scenery catch up. Then, with the actors and scenery sorted out, he would move on, leaving us desperately trying to light over a departing set.

The majority of the show's 'looks' are combinations of broken gobo light and images that translate the green surround into a forest, or an imaginary cathedral, or the centre of a village. This is the lighting that has had praise heaped upon it by many of the critics. It is the result of a combination of two sources. The first is large-format projection, with images created by artist Frances Hamel Cooke, based on both Bruegel images and images inspired by the set, projected from two Pani 2.5k compact HMI projectors with A-15 random access slide changers and LCD grey-scale dimmer shutters mounted on the auditorium booms, and four 2.5k tungsten Pani projectors on stage - all of the projection equipment having been supplied by Production Arts' new European operation in one of their first contracts. The projections completely change the base 'look' of the set, and at times provide practically all of the front-light into the stage, giving it a vast, dramatic open feel.



The framework is lit with two Light Curtains pitching towards centreline. The two upstage pools are created by VL5s and the low side beams are from two Digital Beamlights. photo: Wyatt Enever

The second source is the Source 4. Practically every Source 4 in the rig contains a gobo, and the results are incredible. Source 4s on the circle front project images of tree trunks onto the upstage wall; the images are photorealistic and, even though they are monochromatic, where they fall on the upstage scenic trees, they appear to have colour. Overhead, Source 4s throw a variety of gobo toplights and backlights onto the stage and eight contain gobo rotators.

The Source 4s make the lighting of this show possible; the gobos give life to the surround and floor, turning them from flat surfaces into a living, breathing, three-dimensional world. Light is then cut through the gobos, whether from the beamlights, Vari\*Lites, Light Curtains or the two ColorArc followspots front-of-house and two R&V 500W followspots on stage, operated by the Prince Edward's excellent followspot crew.

## SOUND

A seat at the back of the stalls at the Prince Edward Theatre costs around £25. With eight performances a week, that adds up to over £10,000 a year. Multiply that by 30 seats, and you hit £300,000. No wonder, then, that the sound designers of large musicals are starting to feel gentle pressure from their producers about the number of prime seats occupied by mixing desks. On the current production of *Tommy* at the Shaftesbury Theatre, the team's solution was to pile the processing equipment as high as possible, with some of the racks reaching the ceiling. For *Martin Guerre*, sound designer Andrew Bruce decided to take a different approach: to locate as much of the equipment as possible out of the way in the theatre's sub-stage area.

The ultimate aim was to use Soundcraft's new Broadway computerised mixing desk. Sadly, it wasn't quite ready in time for this show, though there can be no doubt that it will be appearing in a musical theatre somewhere, soon. In the meantime, the sound team turned back to the tried-and-tested: a 68 input, 14 VCA

Cadac J-type desk, with a shallower 26 input K-type wing added to handle the stage microphones and reduce the space occupied to a minimum. The desk is controlled by Matt McKenzie's MIDI control program, which handles the switching of channels to VCAs.

Eschewing the Cadac flying fader system, Bruce instead uses Outboard Electronic's Octopus automated submixers to handle the work that can be automated - one is used to mix the effects, fed in from an Akai S3200 sampler with a MiniDisk player always on standby as a backup, and the other handles the foldback mixing. However, the sound department received some help with their foldback from an unexpected area: the automation team.

The two roving trucks each have several small foldback loudspeakers built in to them. The signal is fed into the truck through a radio link, but it was found that different speakers needed to be used depending on which way the trucks were parked on stage. Spare automation control ways were thus pressed into use, and there are several automation cues which just switch relays to alter the truck's foldback routing!

Despite the loss of some seating due to the size of the Cadac, Bruce, associate designer Nick Gilpin and production sound engineer Tim Lynn, were still determined to keep as much equipment as possible out of the way; the majority of the processing equipment is thus now housed in the substage area. This led to the problem of sending control and channel insert signals there and back, which in turn led to the use of BEC fibre-optic multicores to carry MIDI signals, remote signals for the Lexicon reverb units and the channel inserts.

The system has proved very robust and reliable - though the quantity of MIDI control channels used meant that they couldn't find a spare for sending triggers to the lighting desk; the sound-to-light linked cues in the battle sequence are thus now triggered by a slightly lower-tech contact closure. A second contact closure produces one superb effect in the show

- a cannonball is heard whistling over the auditorium then down to the stage. Precisely at the moment it lands, a pyrotechnic is triggered - the sound control program switches a contact, which passes through a 'clear to fire' switch held down by DSM Linda Winton and so triggers the effect bang on cue.

Like its two predecessors, *Martin Guerre* is a through-sung show, and is therefore mic'ed throughout. 32-channels of Sennheiser SK50 radio mics are used; when the chorus are on-stage, they tend to all be on stage and so there are just two microphone changes during the course of an evening. The signals are received by Sennheiser 1046 receivers - these include a graphic display of RF and audio strength which is run to the desk and other points around the stage, and sound technicians Stuart Andrews and Van Burden can also listen in to the signals at three points around the stage using a system devised by Autograph's Tony Robinson.

When the radio mic frequencies are added to the radio signals used for controlling the trucks, sending foldback to the trucks and for the walkie-talkies used by the stage management team, the potential for catastrophe quickly becomes clear: Great Circle Design and ASP Frequency Management were employed to ensure that all of the equipment would work happily together.

The signals then run up to operator Veronique Haddesley at the Cadac, bounce up and down the fibre optics a few times, are fed through the VariCurve equalisers, then out through a mixture of Cyberlogic and Amcron amplifiers to the predominantly Meyer UPA-2 speaker system. The Cyberlogic amps were chosen for their space saving capabilities, as they cram eight channels into a six-unit high module. The UPA-2s, a new box from Meyer, are being used because their trapezoidal shape allows them to be arrayed more precisely than earlier Meyer units; the speakers are located on the proscenium booms and on the theatre's sound advance bar.

More speakers lurk elsewhere, most notably in a void above the auditorium ceiling. This contains two Meyer 650 bass units, two DF2 mid-bass units and two UPAs, with their amplifiers also located in the roof. They are used for the cannon and battle sound effects, and for the fire at the end of the show - though some discretion is called for so as not to set the roof trellis and all the houselights rattling.

To set the system up, Bruce, Gilpin and Mark Menard, Bruce's American associate, used the Meyer SIM system to analyse the 'real world' behaviour of the loudspeakers. The system uses either music or test tones collected through a series of measuring microphones to build up a frequency response display of the auditorium.

The team could then alter the system's equalisation using the VariCurve EQs, and measure the effect of those changes. To help compare options, Bruce used the VariCurve remote control connected to a radio microphone transmitter, allowing him to change EQ settings freely as he moved around.

The result of this careful setting up is a sound which many people have described as being 'softer' than some of Bruce's work on earlier Boubil/Schönberg shows - understandably, given that this is perhaps their softest and gentlest show. When the system has to kick out, during the battles and the fire, it certainly can. But it is equally happy just taking two

# the

# BIGGEST

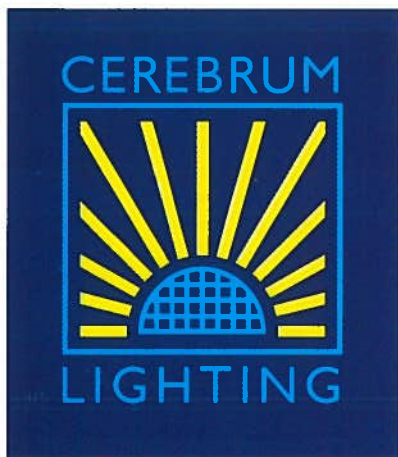
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As *Martin Guerre* is a through-sung show, the cast of almost 40 is therefore mic'ed throughout.

voices from the stage, blending them with the sound of Jonathan Tunick's lush, sweeping orchestrations generated by the 27-piece band and carrying them out to the audience.

#### PUTTING IT ALL TOGETHER

More than two years of planning by production manager Nic Harris eventually started to move to fruition in the middle of March, as a team led by production carpenters Glyn Cook and Michael Murray and riggers Colin Le Gendre, Simon Holley and Tony Harvey started moving the theatre's flying system around to suit the show, and work began on installing the lighting catwalks. A week later the lighting rig started moving into the building, with production electricians Gerry Amies, Martin Chisnell, Richard McBurnett and the house crew of Kevin Burgess, Elaine Bridgeman, Ali Morgan, Nathan Bowler and George Green rigging, cabling and flashing out the overhead conventional lights before carefully wrapping them in plastic bin bags, not to be seen again for a month.

With the overhead rig out of the way, Paul Craven, Adrian Dellar and Richard Nunn and the theatre's crew, led by master carpenter Alan McCall, could then begin the serious work of installing and carefully levelling the steel rings that the revolve would run on, the showdeck that would surround it, and the tracks and mechanics that would be installed in it.

Tim Lynn and his team could start knocking through roof voids to rig speakers, and crawling through floor voids to run fibre optic cables. And the lighting team could move off round the front-of-house positions, installing Source 4s in the theatre's superb FOH bridge, up its three auditorium booms and around the lower and upper circle fronts, as well as having the mid-auditorium booms reinforced to take the weight of the Pani 2.5k projectors.

Even as this work started, though, pressure was lifted by the announcement that the opening of the show was being moved back, with previews now starting from June 21st leading up to a July 10th first night. By mid-April we had well-and-truly moved in, as demonstrated by the number of production desks spread across the stalls. Lighting held the real-estate record (the centre section of six rows, and the side sections of two more), and the monitor-count record (15, at one point).

Behind us was a long sound production desk with another three monitors; behind that was the mixer with another two monitors. In front of us was the Acrobat! automation desk with a few more monitors, and to the right of that was Nic Harris's desk complete with laptop.

Most visitors to the stalls immediately remarked on the visual similarities to NASA's mission control, before going on to decry the excessive number of computers in use. But there were no more than in an office containing a similar number of people, and for the duration of the production, the stalls became our office and home. David Hersey even moved in a new acquisition, an A0 colour plotter, that became the envy of every other department.

In early May, we caught our first glimpse of the show; this was the week that the cast were originally scheduled to arrive on the stage, and so they lost the use of their rehearsal room. No other suitable rehearsal space was available for that week so a forestage was installed and, every morning, work stopped and the stage became a rehearsal venue.

The following week, programming started, with James McKee, Greg Shimmin and design assistant Jonathan Allen patiently taking the set positions devised in the rehearsal room and transferring them into actual positions for the real trucks. Apart from that the set was complete, and the stage was ready for the cast to move in and technical work to begin. Only, Declan preferred to work to a final show in the rehearsal room before letting his cast get distracted by the problems of scenery, sound and lighting.

It was therefore another two weeks before we saw or heard any more of the show, though there was another cause for celebration when the Digital Beamlights - the first, and only 12 in the world at that point - arrived. And even more so when they connected to the data cables installed two months earlier and started moving around without any problem, quickly attracting interested glances from visitors - even Richard Pilbrow was impressed!

Gerry Amies, meanwhile, was working on a lower-tech, but equally impressive, solution to another technological problem: the lights on the bottom of the scrollers, glowing distractingly in the auditorium. His solution

involved attaching a strip of plastic prism to the bottom of the Rainbows. This bends the light from the LEDs through 90 degrees, directing it towards the stage. The LEDs are no longer visible to the audience, but can still be seen by electricians carrying out a rig-check on stage. Rumour has it that you may get to see these at the PLASA Show - and they probably have to be called 'BendyLight'!

It is May 24th when we get to see the show. Of the many oddities in working on something of this kind, perhaps the oddest is that most of the people working on it actually know very little about it until their work is almost done. The first run through immediately made it clear that all of the commitment and effort was worthwhile. Four days later, the cast moved into the theatre for real. Twenty-three days later we performed the show in front of an audience - albeit an invited audience - for the first time.

Those 23 days are a blur. There are over 300 lighting cues alone, but it is hard to remember actually creating any specific cue. The trouble with having an infinitely versatile set is that there are an infinite number of possibilities just waiting to be explored. The most dreaded change became the 'half revolve' change - if you cut or added a complete turn, then all of the trucks would still be in the correct position to start their next move. Cut or add half a revolution and they would all be the wrong way round, and so their movements through the rest of the act would need replotting.

In the midst of this chaos, Andrew Bruce and his team patiently got on with the job of making the show sound good, while simultaneously fending off comments from the composer, conductor, orchestrator, producer and anyone else who happened to be listening.

The previews became a period of re-writing and re-directing scenes. And there was further re-writing and re-directing right up to the star-studded press night on July 10th. The first night was flawless. The audience were on their feet applauding at the end. The show couldn't really have achieved a better reaction. And yet the reviews were still mixed, though most praised the 'cleverness' of the set, and the lighting. Fortunately the show's producer is Cameron Mackintosh, who loves his show and has the money to ensure that it rides those reviews. That may mean some changes are still to come - Declan Donnellan is used to working on his *Cheek by Jowl* shows throughout their lives, believing that theatre should stay alive by evolving; it would be surprising if this show were to be any different.

Even as it stands, *Martin Guerre* is a fine new addition to the West End; a musical that sometimes tends towards the operatic, that isn't afraid to tell its story through mime and dance as well as words, and carries the evening without the big 'spectacle' moment that many expected of it.

As it sets off on what will hopefully be a long run, it leaves behind a bunch of people slowly trying to re-adjust to real life. To having leisurely lunches rather than snatched sandwiches. To being outside in the evening. To daylight! It's a surprisingly hard adjustment to make, and one that won't last, because later in the year we re-convene to do it all again: *Jesus Christ Superstar*, the Lyceum Theatre, September. Can't wait.

**All photos Michael Le Poer Trench, unless otherwise stated.**



# AMATEURS IN THE STALLS

There's been some huffing and puffing in recent issues of *The Stage* about the amateur movement - should all those bank managers and hairdressers be given lottery money for the better pursuit of their hobby?

It does seem a little insensitive to be handing out grants to amateur groups in areas where professional theatres are closing, but in many parts of Britain you wouldn't have theatre on a large scale without the vast pool of unpaid labour the amateurs can trawl. Nor does this necessarily mean unskilled labour - in the best societies, the amateurs are as good as many professionals and usually blessed with more rehearsal time.

It all depends of course on what you mean by amateur. Let me take you through a few of my random theatre experiences of the last few weeks so we can play a game of spot-the-amateur. Last night, as it happens, I had the bizarre experience of watching the end-of-term show at the local Academy of Dance and Drama. 'Academy' is the posh term they use now, apparently, for all those little ballet and tap classes in church halls everywhere, training tiny hopefuls for certificates and medals from real academies like the RAD or Guildhall. The first half was a series of the dance pieces which these girls from four to 14 had offered for their Grade 9B or whatever - one of the most fascinating categories was 'infant modern'.

All the little charmers had ballet-dancer hair pinned tightly back, inane grins almost permanently affixed (when they weren't gazing with panic into the wings to check whether they were standing in the right place), and a rather natty line in final bows that made them look as if they were hailing a taxi to get them off stage. In their mechanical-doll performances there was not a sign of any individuality, and alas not a sign of any of the qualities that might make a dancer - rhythm, movement, grace, fluidity . . . yet they all had certificates to prove it, and could be considered by doting, unwary parents to be taking the first steps towards professionalism. Music was provided by a short-sighted youth hunched over a tape-deck, who spent half an hour warming up her equipment and then managed to start the first tape half way through. Amateur or what?

The Academy also does The Drama - more certificates are handed out to anyone over four who can remember a 10-line poem. In the second half of the evening the drama class did a little play, in which a steady feature was the reassuring murmur of the prompter. The purpose of the rather impressive, but strangely irrelevant, backdrop to the dancing became clear now, and for nearly an hour a cast aged between five and eight used it and the whole stage refreshingly well, having great fun, fluffed lines and all, acting with a wealth of unforced natural charm and delivering lots of genuine enjoyment to the audience. The strange thing is that these avowedly happy and very successful amateurs were drawn from the youngest of those same would-be professionals who had populated the dismal first half of the evening.

Overseas, the lines are not so finely drawn. I've just been to the Almada festival in Portugal, where, for two weeks, amateurs, professionals and in-betweens mingle in a busy programme. Portugal's is a young theatre, and nearly all the established troupes that now make up its professional core started as amateurs, many of them having roots in the years of counter-fascist dissent. The little municipal theatre in Almada, which takes on the task of running a sizeable international festival (now in its 13th edition) on top of an annual repertory, is itself amateur in origin, though now its alumni are represented in professional theatre groups throughout the country.

The technical organisation of the festival would bring a warm glow to old Fringe hands. Two or three new shows a day, staged in



Axioma perform at the Almada Festival, Portugal.

temporary spaces (apart from the generously-equipped Almada Theatre itself) with overnight get-ins and minimal rehearsal time on site. The main 800-seater was a substantial, covered stage with open-air seating, with performances starting late in the cool of the evening.

Here, and in half-a-dozen smaller venues, we saw presented a broad mix of theatrical styles that more than fulfilled the festival's purpose, which is not to show off a lot of exotic, expensive work, but to open up the many possibilities of home and overseas performance to the local community. They were as thrilled by an ageing Russian diva emoting her way through an obscure piece of Heiner Muller as by the local group hamming it up in a couple of bawdy 'farcelets' by Gil Vicente, the prolific Portuguese national playwright who was writing well before either Shakespeare or the Spanish Golden Age.

Some of the most notable contributions to the festival came from Portugal's bigger neighbour: Jacara from Alicante showed tremendous discipline in a production by the star Catalan writer-director Sergei Belbel of a zany piece by Georges Perec, *The Raise*, while the three actors from Teatro Meridional of Lisbon who shone in a fascinating version of *Romeo and Juliet* did so in Spanish. Their conceit was to present only the male, Montague side of the story, so that we saw no one on stage but Romeo, Benvolio and Mercutio, apart from some lighter contributions from the last two doubling as

Friar Laurence and Friar John. So concentrated was their acting that even in an unfamiliar language the piece worked very well on a bare stage, with some tight lighting supplying all the atmosphere that was needed. For a new scene, they would simply move into the next lit area.

Another Spanish group, Axioma, had demonstrated on the previous evening just how much could be done technically on this big festival stage. With an ample lighting and sound rig hung and slung overnight, not to mention a complicated set of cloths, they flew, slid, dropped and otherwise manipulated four tons of two-dimensional scenery in a design extravaganza which decorated two hours of rather empty clowning. The company's three principals were supported by three tireless black-clad alter-ego SMs, who did rather better than their visible stage doubles. These guys were very obviously professional in their equipment and attitude, but the level of their actual performance was not up to that of some of the 'amateurs' elsewhere in the festival. Size isn't everything.

Which brings us back to London on this brief tour. So far I've seen half of *Martin Guerre* (see feature this issue) and am therefore reserving my critical judgement on it for a while, but I can tell you that up to now, David Hersey's lighting is more effective than Nick Ormerod's set, and Andrew Bruce's sound made me take back all those rude remarks about distortion in last month's column. Only when Iain Glen's mic started to belch and hum in a most disconcerting manner was I fully convinced that he was getting amplification - it was that good.

Unfortunately, the belching and humming were the heralds of an interruption in the local power supply, and though the theatre's own system ran the houselights and public area lighting without a hitch, it proved impossible to continue the show. The amateurs here would appear to be the London Electricity Board, who managed to pull the same stunt for *Jolson* the very next day. Word has it that *Starlight Express* regularly suffers loss of power, which must be pretty spooky with all that metal heaving around.

Lastly, for sadists only, let me tell you about the 'Stage Manager's Nightmare', otherwise known as the first night of *Promises Promises* at the Bridewell. This was a professional show, but the usual slender budget of the Fringe meant that standards of lighting, design and orchestra size left something to be desired - a desire which would probably have been fulfilled in any self-respecting 'amateur operatic' production of the same show.

Early in the show, the leading man turned the handle on his apartment door, only to find it still in his hand as he moved away. His efforts to replace it unobtrusively were well worth watching. In the second half, shortly after tripping over a badly-placed vodka bottle and by now more than a little rattled, the poor guy picked up the phone, only to see its lead fall out in full view. I'd love to have heard his conversation with the SM after that performance.

Ian Herbert

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

# RAISING ATLANTA

*In the run-up to the event, Steve Moles visited a bustling Atlanta to assess the technical preparations for the biggest ever Olympic Games*

The centre of Atlanta is, for a modern American city, remarkably congested. Although the familiar grid pattern is there, it's fractured: many of the streets are narrow, just two or three lanes, positively tiny by US standards. This is all the more remarkable when you are reminded that this is a relatively modern city, totally rebuilt after the great fire of 1864 immortalised in *Gone With The Wind*.

Indicative of the way Atlantans cherish tradition (this is still very much the land of Southern hospitality) is that, in spite of the traffic problems, the small streets impart a bit more soul to the city and make it a friendlier setting for this year's centennial Olympics. As you scrutinise the map the first thing you notice is just how many of the major venues are crammed into the heart of the city. Not only the main stadium for track and field events, but 15 other halls and arenas are packed into barely a square mile that sits neatly astride the main intersection of the city's two subway lines.

How is this possible in a densely populated city of over three million? Just like many other US cities the culture of the car and, more recently, the out-of-town shopping mall, has seen the population gravitate to the suburbs, leaving the centre barren and deserted.

As I stepped out the from lobby of the CNN centre, when I last visited Atlanta 11 years ago, I was greeted by the sight of run-down old warehousing, winos in doorways and crack-cocaine for sale on almost every street corner. The centre was a combination of dereliction interspersed with spectacular modern skyscrapers that rose imperiously above it all. Now much of that dereliction has been bulldozed aside and replaced with fine modern stadia that fill the yawning canyons. When you step off the subway downtown you know you're in for a treat - even the platforms have Martin 1220s hanging above them, gently scanning logos across the walls and floor. As you walk west down Baker Street towards the Georgia Dome, you descend a gently sloping hill that overlooks the Centennial Olympic Park (or COP as it is known in the inevitable US shorthand).

This park is the absolute epicentre of Atlanta and is the brash face of commercialism that has made the frenzy of stadia building possible without begging the good people of Georgia. I say brash commercialism, because much anguished debate - in the USA at least - has been made over the use of sponsors to fund the games, and particularly the overt commercial nature of the COP. (The COP comprises a collection of pavilions, each proudly sporting the logo and merchandising of its corporate owner.) It's an easy stone to throw in the glass house of amateur sports, but this is 1996 and the world has turned since Baron Pierre de Coubertin resurrected the Olympian principle a hundred years ago. For example, a statue of the Baron stands proudly in the plaza of the park, funded from donations by the citizens of Atlanta, yet towering 100 feet above and behind



The Centennial Olympic Park.

***"The main stadium for track and field events and 15 other halls and arenas are packed into barely a square mile."***

him is a temporary sculpture in aluminium dedicated to the world's largest brewery. In this setting, it does not look too incongruous, and besides, the Baron's statue will be there long after the games are over and all the fine pavilions have been torn down and packed away, aluminium sculptures and all.

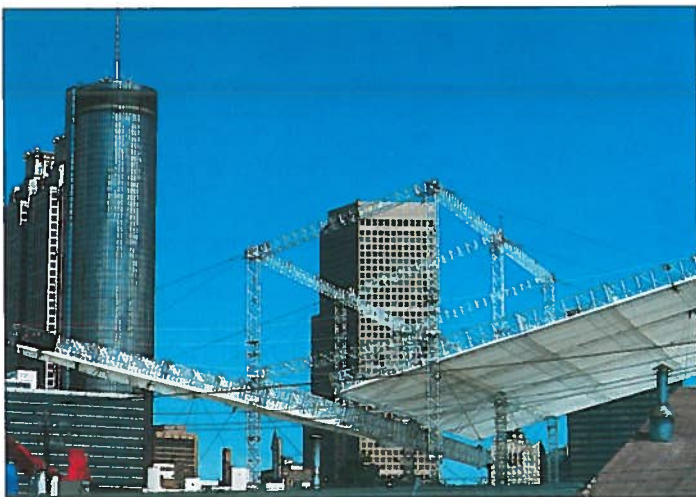
The pavilions themselves function as a welcome respite for the Olympic visitors; there are places to sit and eat, cool chambers of air conditioning to escape the semi-tropical climate of the deep South, and all are filled with things to do, see, eat, and of course, buy! There are many pavilions in the park, too many to list in detail and apologies to those overlooked. In terms of equipment supplied from the service sector, just about every major player in the US market is represented somewhere. The park covers some 21 acres with the adjacent Coca Cola Olympic Centre adding another 12 (this is Coca Cola's place of birth and their presence is everywhere). By virtue of position, the most dominating feature of the park area is the Nike Pavilion. It is also the most controversial and arouses not a little jealousy. Nike have cheekily taken over a multi-storey car park just outside the park perimeter (only official games sponsors are allotted space within) and geographically it has proved to be the prime location, being clearly visible from most places round about. The main feature of the pavilion

and what makes it so eye-catching is the enormous canopy built by Total Fabrications that rises high above it. This is no ordinary outdoor roof: John Trotter, from Nike Image Design, who was responsible for the conceptual design, wanted the canopy to embrace two functions: "To provide a large white back-drop, a glowing beacon of lightness for the Swoosh logo," and more prosaically, "we wanted it angled to give the greatest amount of shade from the sun".

This latter function gave Ian Coles at Total Fabrication the greatest challenge. The canopy is in two parts, each 105ft wide and 70ft deep; overlapping at the centre, the two pieces rise like the wings of some huge butterfly above the building. Simple enough, if a little large, you might say, but there was one further demand behind John Trotter's concept: "We wanted this to be an outdoor venue - all the others are enclosed. As people walk from one place to another we wanted them to feel comfortable when walking through our open display on the way."

Thus, the two elements of the canopy, rather than being supported in the conventional way with a leg at each corner and perhaps a few more in between, are cantilevered off six central columns (two rows of three just 38 feet apart). It is, Ian Coles believes, "the largest free standing truss structure ever". Emmett Anderson of Anderson Associates in Florida (long-time consultants to Total Fabrications in the US) were brought in to quote chapter and verse to the Atlanta, Georgia Department of Engineering who were unused to approving structures made from aluminium, particularly such large ones. Architectural project manager David Dies from the Atlanta architectural practice of Stang & Newdow, oversaw the strengthening of the car park structure and the installation of reinforced building columns upon which to place the six towers. The result is an aluminium canopy capable of withstanding winds up to 80mph, a factor of considerable reassurance to all involved, particularly on the day I left, as Hurricane Bertha bowled its way up the Florida coastline.

Skinned in white nylon gauze, the canopy cries out for lighting, but for such a large area LD Peter West has specified a surprisingly modest system. West, a major part of Lindsay West Inc, has been a lighting design consultant for Nike since the early eighties and has built a reputation designing trade show stands, special events and the lighting for Nike Town Atlanta, part of a chain of large retail stores that Nike is building across the US. Peter's grounding is in theatre lighting and before establishing himself in the industrial market he spent 14 years lighting opera, ballet and modern dance: "Being asked to light a show for Nike back in '84 proved an extraordinary opportunity," he noted, explaining his change of métier. "Nike saw the potential for visual effect to enhance its products. Their genius is in marketing and innovation - they are able to improvise. For



**The Nike Pavilion - the most dominating feature of the park area.**



**The AT&T Pavilion by night - the most spectacular in terms of lighting.**

example, the Atlantan display is worked as a development of actual sporting events, rather than the emphasis some put on the fashion aspect of sports equipment. From the point of view of lighting they ask for restraint, or to use just the true colours of the actual event."

The rig, supplied by LSD Inc, comprises 36 Icons, 400 Pars, 24 Washlights and some 300 or so retail fixtures. "Once the concept is worked out, the execution is quite simple," said West. "We use the moving lights mainly for background. This is about reining back, taking just one aspect of what the light can do and letting that reveal what is already there."

What's there is an unusual display of sporting goods with equipment set in context, all compressed and intermingled in the confines of the large shaded area. CSS, a staging company from Arkansas, installed a complete false floor on the top deck of the car park, but this is no ordinary scaffold and plywood structure. One half is a re-creation of a track and field area, four lanes of a rubberised running track which not only curves around the perimeter, but is also accurately inclined to mimic the actual drainage contours of the real thing. Sunken within the track confines is an astroturf surface featuring gym and athletic equipment, while to one end is the penalty zone of a basketball court, again authentically surfaced, with the hoop mounted to the sole of an 18ft high upturned tennis shoe. The 3D elements of the display (there's also a 20ft tennis racket with fibre optic strings, a 25ft diameter football of steel geodetic construction, and many other larger-than-life items of sporting gear), are all fabricated by IDEAS (International Design and Exhibition Associates). The other half of the deck space is divided, one half has a shallow pool built in, needless to say, with working pump and filtration system that has a real sand beach to one side for a mock volleyball area, while the centre zone has the world's fastest mechanical tennis server, reputedly able to deliver a ball at 120mph. The area is enclosed by a large net chamber but has a large perspex panel at the business end so you can experience what it's like to face Andre Agassi at full bore.

Similar accurate recreations are to be found in the environs surrounding the car park: everywhere the attention to detail is faultless. The pavilion will prove popular, not just for its display but for its upper shaded area which has large fans mounted within false walls to guarantee a continuous breeze, while below there is a fully air-conditioned retail area and a

three-screen display theatre. Entrance to the pavilion is free (unlike Coke which charges \$13 a head) and with access to facilities, especially water and proper toilets, Nike's estimate of 5,000 visitors per hour is probably spot on.

AT&T have one of the legitimate pavilions actually within the confines of the COP, and for my money it's the most spectacular in terms of lighting. It's actually a cluster of structures known as the Global Olympic Village (or GOV) and is so named not for reasons of pretension or corporate bluster, but for the global telecommunications explosion it has taken as its theme. The main part is in form two half cones laying prone with the large open ends facing one another. Birdair are responsible for the structure, this type of building being their speciality; large galvanised curved steel trusses act as ribs with high tensile synthetic fabric stretched between. In total, the two cones stretch over 100 metres. With the strength of the building dependent upon the fabric and how it attaches to the tensioning wires, the means by which Birdair have designed a fabric to wire rope connection that not only looks and is incredibly strong, but is also delightfully elegant, is a credit to their expertise.

Between the two cones is a full size outdoor stage that during the day and each evening throughout the games host performances by a variety of musical acts from across the spectrum of popular taste. Supplied by

Upfront, their familiar curved stage roof, although mildly mimicking the two cones, is dwarfed by them and does spoil the overall line of the pavilion. There is a curved aerial walkway connecting the two cones behind the stage and the stage proper is also an elevated bridge, so that the crowds can pass beneath to reach the third part of the GOV, a smaller circular structure to the rear.

The two cones are devoted to athletes, media people and selected VIPs, and contain mainly pleasantly furnished resting areas where people can either relax or be interviewed. Both have two storeys within; a darker downstairs area featuring large Panasonic videowalls that relay current sporting highlights, while the upstairs lounge areas have central islands rather like bars found in city centre pubs, which are fitted out with large screen intelligent terminals where anyone can gain free access to the Internet. The third structure of the GOV is a public access area with many more Net terminals and a profusion of telephones, including a couple of six feet high plastic handsets in booths. These pieces of cartoon humour actually work, though you feel a bit of a nerd standing in a glass phone-box speaking to thin air rather than a mouthpiece, and the sound quality is a little on the lavatorial side.

The lighting is designed by Candace Brightman, who will be known to many for her extensive work with the Grateful Dead, and like the band, the equipment list here is monumental. LSD are once again the suppliers and, in dimmers alone, the statistics are breath-taking - 32 400amp, three phase supplies give power to six 72- and four 96-channel ETC racks, five 72-channel Avolites consoles, 10 Strand CD80 racks and 10 single 12-packs, plus other bits and pieces dotted about that head electrician Jerry 'Hodgie' Vierna couldn't quite bring to mind.

As well as truck-loads of Pars, Icons, Washlights, VL5s and VL6s, there are over 12,000 architectural fittings to be controlled. Four DMX systems are used to marshal 2,000 dimmer channels, with a further 1,500 channels for moving lights run from two Obsession 1500s, a Jands Hog 600, a full-size and Mini Artisan, an Icon desk and MIDI Show Control. Just to keep things simple, Hodgie also volunteered to beef up the existing street light style fixtures out in the park with an additional 120 Pars and ellipsoidals hung from the lamp stands to reach into those little dark corners. Where he might be a touch vague on one or two of the smaller dimmer packs, Hodgie has



**Ian Coles (right) and Simon Franklyn of Total Fabrications on site in Atlanta.**

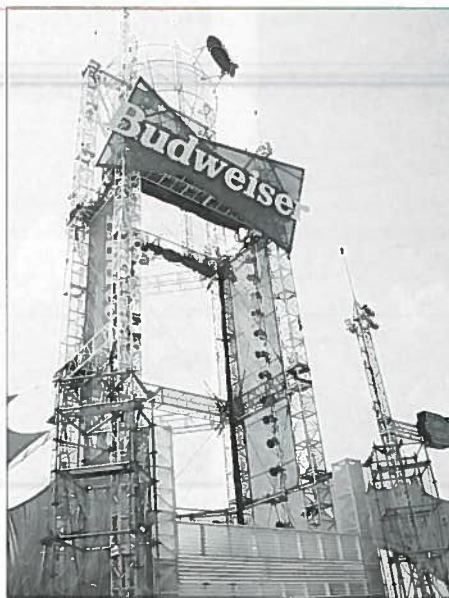
no problems with the cabling: "86,000 feet! And I ought to know, I drew all this up on Mini CAD and specified the lot," but then things like that stick in the mind when you've got to wrap it all up again afterwards.

When darkness falls, the two cones become a huge projection surface to each side of the stage hosting bold gobo patterns in giant relief, or when soft-edged wash lamps gently scan around the cone interior, taking on an organic quality, like some humongous sci-fi grub. The sound system for the stage, delay towers, and for much of the environs of the main plaza utilises Meyer's series of self-powered cabinets, particularly MSL4s. In purely logistical terms, cabinets with built-in amplifiers are an ideal solution to providing well distributed coverage over a wide area like this. Unfortunately, I cannot give any insight as to how the system performed, as sound-checks were still days away.

The World of Budweiser, or World of Bud' as it is more affectionately known, was the most utilitarian of pavilions, but with a mean temperature of 95 degrees in July and August, I get the sneaky feeling it will still manage to gather in the greatest number of visitors. That said, Bud' World is not without its merits. A simple oblong domed tent, not unlike the orbit structures we are used to seeing in Europe, enclose one enormous bar area, but great efforts have been made to make it more than just a beer hall. Parent company Anheuser Busch has, like Nike, its own 'in-house' creative department, appropriately named Busch Creative Services Corporation. Not content with supplying chilled beer in limitless quantities, BCSC's Jeff Hangartner was charged with taking care of the ambience of the interior and making certain that from the outside everyone knew the promise of what lay within.

The interior had to remain largely functional: the floor area of approximately 20,000sq.ft is open standing room, with a small mezzanine to one end for people to sit and snack, and to the other, a large Panasonic videowall for sporting action replays. With an all-white interior, the ceiling lent itself to projection and the bow-tie shaped grid suspended beneath (the bow-tie is one of Budweiser's most potent logos) carried many moving mirror lamps, mainly Trackspots and some Cyberlights. There were also many Pars, but these were concerned with providing lighting to see by, rather than for effect.

In truth, Hangartner admitted he'd been forced to scale down more ambitious designs for the interior, devoting more of his budget to



**Bud World's imposing tower.**

the outside. Nevertheless, the furnishing for the mezzanine level was both comfortable and attractive, and it was nice to see an Optikinetics K1 take pride of place over the bar, projecting onto a disc at the centre of a huge Bud World logo. Outside was the 100ft tower mentioned earlier that dwarfed Baron Coubertain's statue. Also built by Total Fabrications, and at very short notice, the tower comprised five upright trusses topping out at different heights to form a Disney-style fairy castle look. At first glance apparently simple, the tower proved to be rather complex due to a quite stunning effect installed within. At a height of 48ft, a 12ft wide panel was installed, containing 6,000 computer-controlled nozzles with a 2,000 gallon water reservoir above, so not only did the tower have to be stable enough to support itself, but also strong enough for the considerable additional weight of water and machinery.

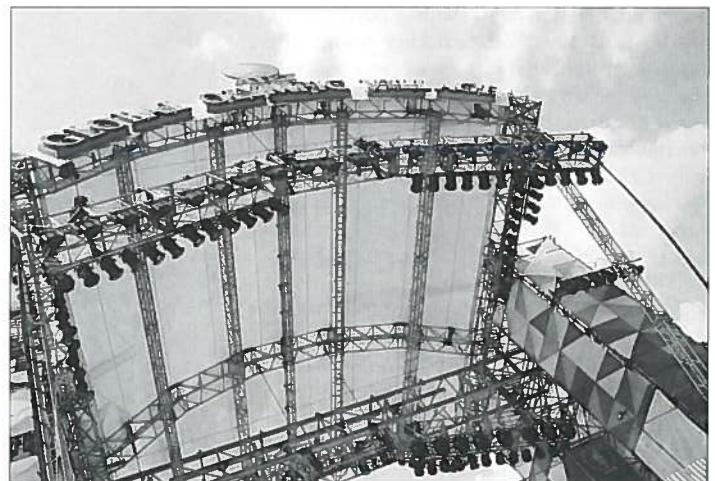
In essence, the weight of water mid-way up improved stability against high winds, but quarter wall tube was used for all cords of this truss-based structure to cope with the increased compression over all joints. To erect the tower, Total Fabrications called in the services of Simon Franklyn of High Wire Enterprises, an expert in the field of rigging the odd and unusual, and incidentally the man who oversaw the construction of the Nike canopy. Due to the complex structural nature of the upper parts of the tower, he employed the skyscraper technique of building from the top

down, using a crane to lift each section and insert the next stage beneath. The top of the tower also sports a 16 feet diameter skeletal aluminium globe, continuing the Bud World theme. Built by A&A Special Effects of Hollywood, this company is best known for its founder, the man who made the pies for the Three Stooges movies. But it's the nozzle system that provides the 'wow' factor to the tower. Developed and built by Rainfall Special Effects, the computer control of the 6,000 valves effectively permits the ensuing waterfall to be used as a dot matrix printer. The 12 feet wide cascade falling 48 feet can have letters, logos or any abstract form, cut into the water sheet, or alternatively only the shape of the letter or whatever can be dropped in water with nothing but fresh air around it.

A simple and perhaps obvious idea, the realisation is not quite so easy. Brian Tolbert of Rainfall explained that the nozzle valve delivery system had been six years in development and learning to control flow rates to form different letters had taken equally as long. In the evening the waterfall is at its best, with strong open white up-lighting already giving the tower a silvery shimmer. In the dusk, the waters turn crystalline, an illusion made stronger by the images cut within that trick the eye into believing it's seeing something solid rather than liquid. Add in a bit of coloration and some laser writing (something already in development) and it won't be long before we see such devices in Times Square and Piccadilly Circus.

With regard to all but one of the stadiums, the need for environment-enhancing sound and lighting equipment was much less. Most are already well equipped with up-to-date sound systems: live commentary from the referees being relayed to the crowd is commonplace. Flood-lighting is there in abundance to satisfy American TV's insatiable desire for live sport of any kind. There is also some demand for additional lighting, but mostly to brighten up the crowd for wide camera shots.

Again, equipment with familiar names like Bash, Production Arts and LSD stencilled all over it is to be found in the unlikelyst of settings. The Georgia Dome is a good example of a place where a little extra is needed. Built for indoor American Football, this huge concrete building has a tensile fabric roof rising to a height of 275ft above the arena floor. Capable of seating 71,500 people in air-conditioned comfort, it makes clear why the brand new 83,000 seater, outdoor Centennial Olympic Stadium (known as the COS,



**Left, the AT&T entrance to the Global Olympic Village (GOV) and right, a closer view revealing some of the hardware.**

naturally) will have one end demolished after the games to convert it to a new 50,000 seat baseball stadium. The floor area of the Georgia Dome covers 102,000 sq.ft (room enough to park two of the USA's largest aeroplane, the Galaxy C5, the publicity blurb states) and when fully seated for rock concerts increases capacity to 95,000!

For the purposes of the games, the translucent nature of the fabric roof proved a problem. It fell to local rigging company Atlanta Rigging Systems to black out the 8.6 acre expanse. Lining the inside with almost half a million square feet of black vinyl took just eight days, but then a further 14 to tweak into place. Company president Rick Rushing, no slouch when it comes to climbing himself, said he was amazed by how many members of his team volunteered to venture out onto the centre section of the Dome. "That middle portion is supported by tensioned nine inch thick wire ropes run to a huge concrete compression ring round the top of the building. But it still bounces a heckuv a lot. Those guys 'r crazier 'n I am!" he said, as only a true son of Georgia can.

To give you some idea of the impact the games has on the local economy, apart from the minor distraction of the Georgia Dome, Atlanta Rigging provided 400 people around the city for climbing and rigging services for the fit up and will pull in an extra 200 for the out. In the main COS stadium, professional AITSE stagehands have been pulled in from New York and Pennsylvania to augment the over-stretched Stagehand Unions of the Southlands. The COS stadium does, of course, require something more than other venues

(being the site of the opening and closing ceremonies), hence the need for such unprecedented stage crew demands. The spectacle planned was a closely guarded secret, so access was not possible during my visit, but by now you will all have seen it and hopefully been well impressed by the efforts of main lighting contractor LSD and the design of Bob Dickinson.

I departed Atlanta 10 days before the opening ceremony: I knew this because a large digital display hangs on a bridge downtown over Interstate 75 that runs to the airport. It has been quietly counting down the days since 1992. With just 240 hours left it was more than a little scary to witness how much work was left to do. The pavilions might have been in place and most stadia ready, but the surroundings and infrastructure were far from complete. Reports coming from crew working at the COS similarly made references to an extremely tense atmosphere within, although none doubted they'd get the job done.

As I sat contemplating an ice-cold beer while awaiting the final call for flight DL10 to Gatwick, the TV news reported the death of a construction worker on the Olympic site by electrocution. Apparently another man working on a roof top was throwing copper sheets down to the ground as part of the clearing up process. One piece snagged an overhead power-line and brought it down on to the unfortunate man below. It's a shame that for one family at least the games will become the grim reminder of a bereavement. For all the success and achievement that commercialism gives to the Olympics, a little loosening of the financial reins to buy a bit more time might not go amiss.

## STOP PRESS: OLYMPICS

- Spirit consoles undertook some of the most important broadcasting roles, with many of the US radio stations employing Spirit Folio Sis for their outside broadcast production studios, while Richter Scale Productions, who covered the Olympic Torch Relay across the country, followed the flame's journey with a 24-ch Spirit 8.

- A 24-box Martin Audio Wavefront 8 was used as the front-of-house system on the Roswell, Georgia performance stage. Supplemented with 16 Martin Audio VRS-1000 cabinets, the sound system was supplied by North Carolina-based Raleigh Music. The monitor system featured PM3 cabinets with MX4 controllers.

- Sennheiser's UHF wireless, shotgun and interview microphones, headsets and monitor headphones, as well as Neumann shotgun microphones were used to cover the entire event. Close to 800 Audio-Technica microphones provided stereo for every televised event.

- A complement of 67 Apogee loudspeakers provided coverage in Atlanta's Olympic Stadium. 36 AE5s, 26 AE-5NCs and five AE-2s were mounted on custom-designed stanchions with adjustable swivel mounts, located at the rear of the seating areas.

- Group One have supplied Audiotek with 30 of XTA's DP200 digital equalisers/processors for signal processing for both the opening and closing ceremonies.

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# THE SILICON SOLUTION

*Lee Baldock visited Belgium-based Silicon Controls, whose latest transistor dimmer represents a new era in dimming technology*



The Metropolis cinema in Antwerp, engineered by Decatron with dimming by Silicon Controls (left) and the ballroom at the Hilton Hotel, Antwerp.

Words like 'prudence' and 'foresight' prove very useful when attempting to define the history of Silicon Controls, the dimmer manufacturer based in Deinze, Belgium. During almost 16 years of operating under the combined banners of Light Beams and Silicon Controls, the man behind the company, Cedric Heyndrickx, has successfully steered the company away from potential trouble spots, towards success. The culmination of these years of sharp awareness and attention to detail is an interesting new product which, today, makes Cedric Heyndrickx a very happy man - Silicon Controls' new transistor dimmer.

Back in 1981, Light Beams was a young company, and a supplier for a number of manufacturers, among them British company Zero 88 and Spanish company Satel, who were, at the time, a well-known manufacturer of discotheque lighting, having been responsible (along with another manufacturer, Kremesa) for the first pin-spot. Heyndrickx and Light Beams had an excellent relationship with Satel, and it was purely because his business acumen had impressed the Spaniards that they asked him in 1985 to outline what he thought would happen to the market over the coming years.

During the early 1980s, business was booming, and there was little cause or inclination in such rosy times, to think that the future would be any less lucrative. However, the request from Satel gave Heyndrickx cause to think, and the implications of what he thought did not bode well for Light Beams. He saw, in the near future, steadily increasing competition among suppliers and distributors, which would inevitably - and very rapidly - lead to increased pressures on profit margins. What was needed to preclude his own company from this damaging struggle was an added-value product - something that was bought for reasons of high quality, or certain levels of support, or design, or customisation. With this strategy in mind, he shifted the emphasis of Silicon Controls towards development and manufacture of high-quality dimmers.

In 1987, the company produced their first dimmer, a high-quality heavy duty model

***"There are still manufacturers around who will tell you that this is impossible."***

which sold very well, with around 50 systems being sold to hire companies (who, as Cedric points out, are "quality-minded, technically-aware people.") in Belgium alone. The problem was that once all the hire companies had bought enough units, the market dried up. The need to push the product into the rest of Europe eventually led to a relationship with Coemar GmbH in Germany, who exhibited Silicon's dimmer at Frankfurt in 1992, with considerable success.

However, as the potential for the first dimmer approached its limits, Silicon looked to creating a wider product range to cater for different types of installation. A logical step, yet Heyndrickx reveals that all was not as straightforward as it appears in retrospect: "It seems so logical and easy when you look back in this way, but then it was a struggle. The decisions were daunting at the time."

In 1990, following several years of healthy success as a manufacturer, the company had rapidly expanded with 17 staff working at the Deinze headquarters. This was certainly a promising enough situation for a young manufacturer, but Cedric Heyndrickx began to be worried by the tremendous increase in overheads resulting from the growth years.

At this point, another very prudent change of direction took place, and he began to strip down his workforce until just five remained. This he managed by devoting the on-site staff to R&D, quality control and some stages of product assembly, whilst the majority of the manufacturing process was sub-contracted. Now, semi-assembled product is stored off-site by sub-contractors, and completed in whatever form - standard or customised - when a client makes the order. Customisation is an important part of the Silicon Controls service, and having

the product in a semi-finished state aids the process. "We take a purely modular approach to everything we make, so that we can be very flexible with our systems and provide whatever specification our clients require," explained Heyndrickx.

The clients he refers to have been growing in number, too, with Silicon finding more and more favour in the architectural lighting markets. Their systems can now be found in hotels, shops and conference centres, with a number of prestigious installations already under the collective company belt. Extensive dimmer systems are installed at both the Hilton Hotel and the Cathedral in Antwerp, the Conrad and Ramada Hotels in Brussels and the 300m-long building complex that makes up the EC headquarters, as well as multi-screen cinemas in Antwerp and Lille, to name just a few.

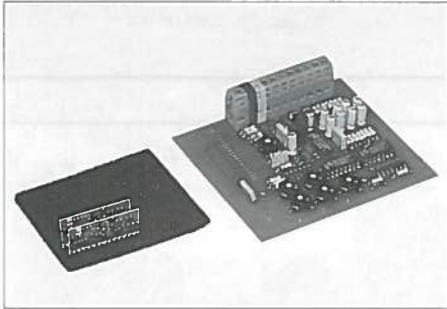
The lighting design at the Conrad Hotel was undertaken by WGSS Associates of New York, who were so impressed with the quality of the Silicon systems that they recommended them for use in subsequent work for the Renaissance hotel chain. "The architectural market here is a difficult one to move into, as there seems to be no 'pyramid structure' of dealers, distributors and installers, which means it is very hard to find the work. But we have done quite well, as the work with WGSS has shown."

The more recent success of the Silicon range in the architectural market has been due in no small way to the achievement of the transistor dimmer, which has been developed by the Silicon team over a four-year period. The real beauty of the dimmer, and the thing that sets it apart from all others on the market, is its ability to provide 0-100% dimming on all three types of electrical load - inductive, capacitive and resistive - simultaneously.

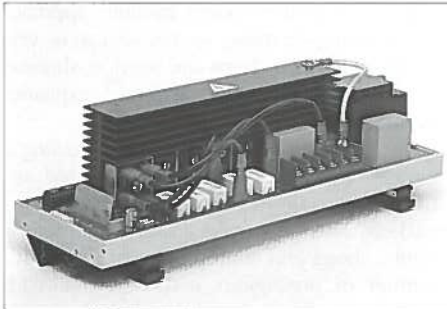
Heyndrickx explains further: "There are still manufacturers around who will tell you that this is impossible. The problem is that transistor dimmers have a habit of blowing up when connected to an inductive load. There are dimmers on the market which have two sets of circuitry and switch back and forth, depending



Silicon Controls' MD, Cedric Heyndrickx.



Small, but perfectly formed: two tiny hybrid circuits are pictured alongside one of the control circuits they now replace.



Silicon Controls' transistor dimmer. The hybrid circuit, protected by a brown plastic coat, can be seen to the left of the picture.



Ronny de Guesquiere is one of the company's small team, working on product assembly and quality control.

on which type of load is being dealt with - this is all very well, but it is obviously impossible to run both loads together. It would look more like a smoke machine than a dimmer! What we had to do was to engineer an electronic solution to this very difficult problem."

Another problem highlighted is that transistor dimmers tend to run hotter than conventional dimmers. "If you cannot master the electronic technology that will solve this problem, you will soon find that the transistor dimmer has become a *lot* hotter than a conventional dimmer. It takes a great deal of research and development and technological know-how to keep this temperature rise to a minimum."

Apart from the obvious advantages of the load management, the Silicon dimmer is around half the size and weight of an equivalent conventional dimmer. Add to this the fact that it is virtually silent under all conditions, and you have a very attractive package indeed. Part of the secret of its success is the use of an extremely high-spec piece of technology - a hybrid circuit. This is essentially a tiny, laser-printed and multi-layered ceramic circuit board, originally developed for use in space exploration, where size, weight and reliability are of extreme importance.

As to reliability - you just don't get any more reliable than this: each hybrid circuit is absolutely 100% perfect, due to being continually monitored during the entire manufacturing process. Resistors on the circuit are laser trimmed until the correct value has been achieved. Another restrictive factor is that it takes around three months from start to finish to manufacture a new hybrid circuit, as opposed to a few days for a normal PCB. Of course, for a company like Silicon, the cost of producing the circuit in the first place was almost prohibitive, but they have proved healthy enough to stomach the investment, and it seems to be another very prudent step by Mr. Heyndrickx.

Being 100% reliable is an unusual luxury for an electrical component, and it means that the hybrid can be permanently wrapped in a heat-shrunk protective coating. From beneath this cover, the circuit is responsible for an impressive range of functions. It automatically tests the dimmer on start-up, and an LED indicates the satisfactory completion of the test. During operation, the circuit continually monitors the load, several hundred times per second, controlling all instantaneous compensative measures for changes or fluctuations, as well as triggering protective measures when there is a problem.

In demonstrating the speed of the protective reaction, Silicon wired the dimmer to a true short-circuiter, and ran the power through a residual current device (RCD), sensitive to fluctuations of 10 milli-amps. When the short-circuit was activated, the hybrid took control instantly, cutting off power to the unit, before the RCD had even registered a problem, and continued to let the power through. "This speed of reaction is impossible in a conventional or triac dimmer," explained Heyndrickx. "The MCB requires certain level of short-circuit before it will activate, and even then the triac can only be switched off when it is at the zero point of its cycle. If you have to wait a few milli-seconds for switch off, it's already too late."

In order to demonstrate the silence of the unit, he ran it alongside a triac dimmer manufactured by Silicon in 1991. Even dimming a halogen lamp at 50% - usually the noisiest level for a conventional model, there was nothing more than a barely discernible hum from the transistor dimmer, while the triac unit sounded like a swarm of bees at close quarters when doing the same job - and that just one channel!

Naturally, the advantages of size, weight, silence and reliability dispense with many of the problems associated with dimmer installations. Cedric Heyndrickx is very pleased indeed to have reached this point in the process: "Now that it all works properly, it may seem easy, but it has taken four solid years of blood, sweat and tears to make it so."

Part of the reason it has taken so long, apart from the almost insurmountable engineering obstacles, is the total unwillingness on the part of Heyndrickx to release anything other than a finished, working product. "We wanted to be sure that it worked perfectly before it was released. We are not interested in releasing a prototype product - I think there is too much pressure on manufacturers to launch products before they are properly ready. We may lose money and publicity in the short term, but getting the product right was always the priority."

The origins of the dimmer, though, come once again from his prudence and attention to detail. He has followed regulations laid down by the International Electrotechnical Commission since 1987, and has pushed the manufacture of all Silicon's products to comply with them. He points out that the European directive concerning EMC (89/366) has been around since 1989, at which time the company first turned to the problem of emissions.

To say the least, Silicon Controls gave themselves a head-start in the battle for the CE Mark. "The EMC law which came in at the start of the year should have been implemented two years ago, but protests from 'big industry' have twice postponed the move. Everybody saw it coming, yet some refused to believe that it would concern them. Now we have the widespread situation where manufacturers are allowed to certificate the compatibility of their own products, and we are aware of some who are blatantly falsifying their results."

As to Silicon Controls' prodigal new offspring, of which Cedric Heyndrickx and his staff are so justly proud, the future will hopefully lie in providing the units on an OEM basis, and he is openly looking to discuss the possibility with other manufacturers, in Europe and beyond.

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# SECOND TAKE

## John Watt's View from Beside the Camera

Working in a theatre is, for me, like going home: true, on this occasion we were making a video, but it was in a theatre in front of a live audience. A quick change of gear and terminology, but like the proverbial bike, you don't forget - well, not much anyway. So what lessons were re-learned? Well first, all places of entertainment should have a stage door café literally opposite the dock door: unlike TV canteens, in every respect, they provide mugs of tea of gargantuan proportions and have no pretence at doing anything too fancy. We can all sit at long wooden tables, curse the director, management etc, while the crew slips in the odd 'have you thought of . . .', which I should have and didn't, but they have anyway.

Secondly, will anyone ever devise a better way of flying lights and scenery than with a common or garden counterweight set? OK, so it has to be balanced, but the clonk of those weights does give this romantic a buzz second only to the orchestra tuning up. The only serious problem I can see is that they run so quietly you don't hear them coming, but never mind, 'Fred' the flyman is the best safety device yet devised.

Thirdly, theatre sparks understand profile spots: if you come across a TV spark who does, then he used to work in the theatre. So for 80% of the rig to comprise profiles is no problem, but trying it in the studio you might as well give a Rubic's cube to some of them. Ask for a doughnut and they're done for, though you may get something to eat in the tea break, even if it wasn't quite what you had in mind.

Well, perhaps I shouldn't wax too lyrical about the theatre because we were making a video on the usual tight-ish budget. However, the cash did stretch to one of 021's big trucks which you seem to bump into all over Europe. Football, royal galas, ice skating, comedy videos - you name it, they have taken it in their stride. Led from the front as ever by genial Ed Everest, they manage to produce good pictures even when I'm lighting.

Maybe it's because they have learned to keep the speaker turned down in vision and so can

ignore any helpful advice. I suppose theatre productions are rather more pre-planned than television, but having the lighting control in the middle of the audience instead of in the box, really restricts the use of talkback and the ability to talk through changing situations.

Anyhow, we had a normal sort of freelance TV day, which stretched from rig at 8am to de-rig at 2am the next morning. The aforementioned café provided sustenance in the two half-hour breaks and the spot operators doubled as setting crew throughout the day as there was no money for an extra bloke.

Which leads me on to the equipment. Do you really trust tallescopes? After more than 30 years and no serious incidents yet, they scare the hell out of me. Before I get sued, I am sure they will perform as intended perfectly well, providing you can get used to the inbuilt flexing of the things. The trouble is, crews get over-familiar with them, find the outriggers too much trouble and push them around with the blocks on top. One day the inevitable will happen: try and make sure it's not on your show - think of the paper work!

Back in my familiar hunting ground I am lighting the same game show for the fourth series. Yes, you've heard about this before, but this is not your namby pamby 13 show run, this series is 75 shows at least. We take a run at it, and after a few days getting up to speed, make five a day. This is as much as the two audiences a day can take and probably the poor old presenter too. (The viewers have only themselves to blame). You get to a point when nothing looks right and you have to get a hold on yourself and resist the temptation to fiddle with it (or it will never get better, as Mum used to say). I have already been through all that on the drawing board, wondering why last year's plan was so unadventurous and then discovering why during rehearsals.

This show, of necessity, features a lot of (too much probably) bounce and soft light.



Expensive in power, stretching the mains and the air conditioning to breaking point, we always synchronise with a heat-wave, which has arrived, on cue, as I write. The air con' people, in a desperate attempt to keep the presenter cool, revert once again to high tech solutions and have Elephant trunks hanging from the grid blasting cool air. There then follows the predictable battle between the air con people and the sound techs, conducted in voices raised to fever pitch, not because they are particularly upset (it's TV, not brain surgery), but because they have to make themselves heard above the roar of the air.

It seems churlish for lighting to join in the battle, but as the hoists start to sway in the air movement, producing an interesting ripple effect on the contestants' beaming faces, you wonder, not for the first time, why monopolies fell from favour. The design of air conditioning is a black art - let no one persuade you otherwise. These engineers should belong to the magic circle, but I suppose wouldn't qualify as their tricks don't often work. (I know, I've walked the ductwork at Hawley Crescent when we put TV-AM together and it's as big as the London Underground which passes 100ft below). In a quest for slow and therefore quiet air movement, so far so good, but when the air falls through a grill onto the studio floor it creates a patch of cold amongst the warm. Well it did, a genuinely low tech mod (a simple baffle) designed by me fixed it, and you thought I was just a pretty face (see photograph!).

Another pretty face, legend Ella Fitzgerald, has left us, but happily her recordings leave so much to remember her by. BBC2 have been running a tribute, the first made in 1965 in black and white, of course, and maybe telerecorded, or was early two inch tape that bad? Anyhow, lit by Nigel Wright, it reminded me of the challenge of working without colour and the constant quest for an AC background. What did you use to project the gobos, Nigel? Was it CCT's first Silhouette and was the gobo a bit of speaker fret? Anyhow, Ella looked good and sounded better. At Ronnie Scott's, 10 years later, they shot on film, 16mm I guess and in colour of sorts. It's a pig of a place to light, but even so I thought they'd given up the struggle too early. She sounded good, but two elongated shadows of the double bass distracted terribly.



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# ON TOUR

by STEVE MOLES

AND PRODUCTION NEWS

## The Cure

Earls Court

LD: Roy Bennet

SD: John Lemon

There's something of the Peter Pan about The Cure's lead singer, Robert Smith. It's not so much that he refuses to grow up, but that he continues to sustain an audience which might loosely be termed the teenage college set. This alone would not be enough to fill the cavernous portals of Earls Court and he has, of course, also retained a large slice of each passing generation as they grow up, but it is salutary to note that next year will be the band's 20th anniversary.

This tour has made a faltering start, despite the best laid plans putting the band into full production rehearsals at the Docklands Arena, followed by half a dozen shows around the country, before bringing the show to London. A sudden and virulent attack of influenza, resulting in almost pneumonia-like symptoms, laid Smith so low that all shows were cancelled except Earls Court. In fact, the bug hit on the very day that rehearsals were due to start, and so it was only the day before the opening show that anything approximating a rehearsal was possible. This might not be so astounding were it not for the fact that this is an ambitious show, taxing and stretching for both sound and lighting, and as such is a stressful opening for all concerned.

I visited the second show at Earls Court: the baggy dark eyes were still there, but a lightness of touch was appearing already. Sound engineer John Lemon, when asked what the first night sounded like said: "I don't remember hearing any of it," 'Intense' is an understatement.

## SOUND

Lemon is using a substantial Turbosound Flash/Floodlight system from Britannia Row, a company of great resource, and he was the first to say how much they had backed him in giving him the exact tools he required. The magisterial Bryan Grant offered John these words of encouragement on the opening night: "Remember, Earls Court has been the graveyard of many a sound engineer." Thus armed with ice in his veins, it's hardly surprising he didn't hear anything.

The biggest challenge for Lemon comes from the new album *Wild Mood Swings*: "The album has a lot of strings on it, and the character of the songs means we're in for major dynamics," he said. "The string parts are all sampled to an Emulator and played by keyboardist Roger O'Donnell. There was talk of using real violins early on, but I persuaded them not to. I'd had experience of that on Depeche Mode - the string section would be great in the afternoon when the environment was controlled, but at night once the crowd came in and the room was full of noise . . . forget it."

The other big stretch in the dynamics comes from the drums. There are two kits on stage, a



Lighting designer Roy Bennet produces a 'riot of colour' for The Cure at Earls Court.



centrally positioned rock kit high on a riser, and a more modest affair to the left, played with brushes and those big sticks with the fluffy balls on the end. "One minute he's bashing hell out the rock kit, the next it's the gentle sound of brushes." Lemon has actively split the kit via a BSS Splitter to give two distinct handles for processing the signal. He's got AI Smart Compressors - one across the Toms, another across the kick and snare. "They work really well. They hold the drum sound really tightly together without dragging the high end out of it."

There are two Midas XL3s out front (a 24 and 40 channel). "I couldn't justify two XL4s - but because I had committed to the XL3s, Brit Row arranged for me to try out every known mic pre-amp. I chose the Rupert Neve Amek 9098 (eight of them to be exact) which are just stunning."

Used extensively on Smith's vocals, the two bass guitars and kick and snare, Lemon likes to rely on the pre-amp EQ alone: "I like the sound to just sit there unprocessed." This was not immediately easy to discern. The Cure's style of play is consistently full and busy - no dark, silent spaces between instruments, with signal right across the range, but once your ear had accustomed itself to the richness

of the aural confection, the vocal would materialise seemingly out of nowhere, with quite remarkable clarity.

This seemed a loud show but it wasn't - it was just that there was so much going on musically. There were, unfortunately, some appalling lapses in continuity between songs when Smith appeared to lose his place in the script. Freely extemporising to the audience about what was going on during these awkward breaks, you'd hear the booming echo of his voice around this glorified aircraft hangar, and realise in an instant

what John Lemon was having to contend with and exactly why Bryan Grant said what he did.

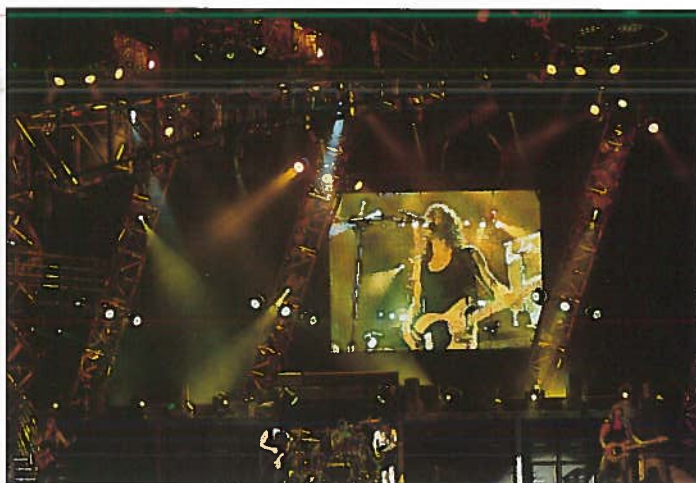
The monitor system is supplied by Firehouse Productions out of New York (State, not city) with the Yamaha PM4000 desk run by company owner Bryan Olson. He has also been mixing monitors for the band since 1983 and, with some justification, is able to say he knows just what the band want to hear. Despite the wide open playing area there are no side fills - the stage sound is fed entirely by Firehouse wedges.

Designed by Olson at the turn of the decade, the wedges contain a pair of 15 inch units with TAD 1601bs and a TAD 4002 for high end. At \$1,000 for the two-inch driver alone, these are top-price units, but the price/quality equation clearly pays dividends. "The wedges give a nice tight low end, especially for the kick drum and the guitars," made even tighter by Olson also choosing to use the AI Smart compressors so liked by John Lemon.

For Smith's voice, Olson is using the BSS901: "Around 400Hz is massive when he sings, especially at the opening of the show when his voice is strongest. The 901 detects that peak instantly and just comp's it out." Smith is also



The Cure take a ride on a 'rollercoaster' of lighting.



AC/DC at the NEC - 'honest to goodness, R&B-based rock and roll'.

prone to a bit of shouting from time to time, and a hot 2kHz just disappears with equal dispatch.

There are some 16 wedges dotted about the stage, neatly hidden below a false floor, mainly for the benefit of Smith who roves about a fair bit. To compensate for the lack of side-fill *oomph* a row of Firehouse square monitors (same 2 x 15" unit as the wedge, but no high) is placed beneath the backline cabinets and across the back of the drum riser, all facing forward. Smith sings through the new AKG WMS300 unit, a mic with plenty of rejection for when he's moving about and, contrary to what might be expected, Olson finds the UHF unit gives a better sound than hard wired.

#### LIGHTING

This band quite obviously stimulates the imagination of Roy Bennet to new heights. Fertile at the best of times, he has been given full rein by an indulgent song-smith who does not allow himself to be fettered by any stylistic constraint. Bennet was first approached by band manager Chris Parry 15 months prior to the tour going out: "Funfair and tin toys were the first images I saw," explained Roy. "The song Jupiter Crash was already done back then and somehow I thought about it in terms of those spacecraft toys of the 1950s - there's something dangerous about them."

It's such statements that give an insight to Bennet's creative process. There's no literal interpretation of the song per se, but an instant abstraction of what it meant to him in the first instance, and then a rapid development. The stage set (realised with gratefully acknowledged help from both Mark Fisher and all at Brilliant Stages), is dominated by a large wavy canopy. The canopy has been named 'the popadom' by Bennet's programming wizard Gary Westcott because of its slightly punctured texture.

It is like the webbed foot of some terrible dragon, the cloth hanging half taut between the six toes of trussing that fan out from upstage centre. The toes are defined by a jagged edge of cloth running beneath the full length of each truss. The stage itself is deceptive: on first examination it looks huge and busy - a riot of colour - but a closer inspection reveals just a central drum riser three feet high with familiar back-line cabinets lined up either side.

The impression of large scale is given in the fractured roller coaster tracks to each side. Realising two elements of Bennet's idea - the funfair motif and danger - the tracks rear up like dismembered horns, the two lengths of twisted metal forcing the eye up and outwards, providing width to the stage and making the connection to

*"As a member of the audience you can sit back and wallow your senses in the rich mud of the performance."*

the canopy above. All cloth, both backdrops and canopy, is supplied by Dave Perry. The lavish painting that adorns them is a tribute to his work - the set looks fabulous even before the first beams of light fall upon it. 'Fabulous' is also the best adjective for how Bennet has applied light to the stage, or rather 'fabulist'. In the tradition of film maker Terry Gilliam (Time Bandits, Brazil, Baron Munchausen), the lighting show is rich in imagery. Like Gilliam's camera work it's a very wide angle view filled to bursting at every corner. Roy's rationale is clear: "The set shouldn't pigeon-hole you - you should be able to pull many different emotions out of it."

And he does, but using an enormous amount of hardware. The lighting rig comprises VL5s, VL4s, Icons, Cyberlights, Emulators (possibly the first outing for these mock lasers from High End on a mainstream tour), Diversitronic 3000 strobes, five 5kW Xenon projectors from ETC, plus Bob lights and Mole type cyc lights from LSD, both fitted with Colour Mags, as are the strobes. The Cyberlights sport custom-made full chromatic glass litho gobos, the artwork for which was designed by Roy Bennet's sister Misi, who also contributed to the scroller images run through the PIGI system on the front of the ETC projectors.

Between these two sources comes a range of images powerful enough to either submerge the set altogether or totally transform it. The strobes too are a powerful tool - it is possible with this latest version from Diversitronics to have the light source at full energy virtually continuously, making some intense cold colour washes. Add to this a number of backdrops on a rear traveller system, one resembling burnt flesh with seemingly burst blisters of skin spread across it, and the potential for variety is immense.

The startling thing about Roy Bennet is that he seems unafraid of running out of ideas, and so never holds back if the opportunity is there. Song after song, he hits us with new combinations and layers of lighting. This is not just about lighting the band, it is a lighting show of magnificent proportions where lighting and music become a seamless whole. So it is with the sound too. As a member of the audience you can sit back and wallow your senses in the rich mud of the performance.

#### AC/DC

NEC Birmingham

LD: Charlie Wilson

SD: Paul Boothroyd

How do you categorise AC/DC? "What they want is to sound like a pub band, but incredibly loud," said front of house sound man Paul 'Pablo' Boothroyd. A simple enough requirement, and one he readily fulfils, but is their sustained success really that simple? "You don't often find a band who shoots their wad in the opening number," was a slightly more enlightening comment from LD Charlie 'Cosmo' Wilson, but it was the added "and then keep it up for the next two hours," that really gave the game away.

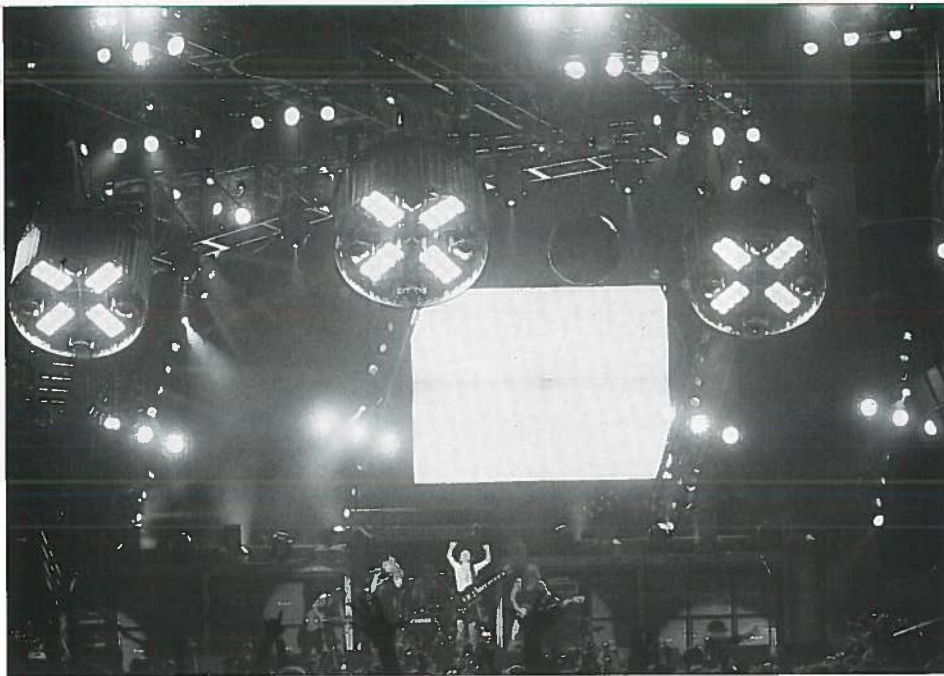
Not heavy metal (though they have the volume), and not power pop (though they do have a few hit singles under their belt), AC/DC's style is full throttle, hammer to the forehead, honest to goodness R&B-based rock and roll. If you are male, like to dress up in schoolboy uniform, and want to shout yourself hoarse all night, this is the band for you.

#### SET/LIGHTING

Mark Fisher (set) and Patrick Woodroffe with Cosmo Wilson (lighting), all worked together to bring this particular beast to fruition, and splendid it looks. A derelict construction site is the theme: the opening gag is the defining moment of the show, setting the scene in terms of power and visual spectacle, with just a sprinkling of humour as befits a band that, to its credit, doesn't take itself too seriously.

A huge cantilever crane reaches out almost into the crowd, swinging a large demolition ball beneath it. The stage is already lit, showing a high masonry wall (20ft at least). The crane squeals and screeches as old worn bearings are coaxed into motion, a monstrous Detroit diesel coughs, grunts, finally clears its throat, and then roars as the ball is sent crashing into the wall. It's a coup de théâtre without equal, and despite having already done 89 shows, it was quite obvious that all the front of house crew relished this moment still.

As the dust clears, the amps are turned to 11, guitars and drums come crashing in like a pile-driver and Cosmo floods the stage with white light from every direction. As he said, they shoot their wad in the first number. The lighting specification (main contractor Light & Sound



AC/DC: a huge cantilever crane reaches out almost into the crowd, swinging a large demolition ball.

Design) is modest by the standards of previous tours - just 28 Icons, 28 VL6s and 69 VL5s for the moving lights. Most are hung from three orange-painted trusses at a rakish angle across the back of stage, that join to fingers of truss projecting out above the band. The trusses also hold eight Molefay blinders on the downstage extremities, 64 ACLs and 24 AF1000s liberally sprinkled about, and two 70kW Lightning Strikes tucked away for a bit of muscle.

"This band are known for their punch," said Wilson, "so I put the VL5s out into the audience's face so to speak. Lighting-wise, I had to make a trade - something that would have the impact of those old thousand-lamp rigs they used to take out - so I throw light into the audience." Whilst the band let off a full broadside in the first song, Wilson keeps his powder dry a long time. The first three songs are all lit in open white, though admittedly many different whites with FBEs in the Molefay, the variety of moving lamp sources and four Lycians in the rig, plus six Super Troupers out front.

The truss toners don't get used as an effect until song five, and without doubt the strongest element of the lighting rig, the triplets of VL5s on the almost vertical rear trusses, are used very simply to start with, a two-colour combo not appearing until the ninth song 'Dog Eat Dog', nearly an hour in to the show.

In a departure for Wilson, he has finally bitten the bullet and been trained on a moving light console, the Icon board, a desk he describes in a manner uncharacteristic for an American which has something to do with dogs and a certain part of their anatomy. Despite the potential of the desk to run the entire rig, he has retained long-time fellow operator Guy Forrester to run the Vari\*Lites from an Artisan.

"Learning the desk has given me a lot," Wilson explained. "On previous tours I would have to try and find ways to describe a lighting idea to Guy. Despite our rapport, this didn't always work or was slow and awkward. Now I can show him. I've kept working with Guy because I want his input, as he develops stuff on his own that I value." And

that's what stops it being pap, plenty of development and input.

## SOUND

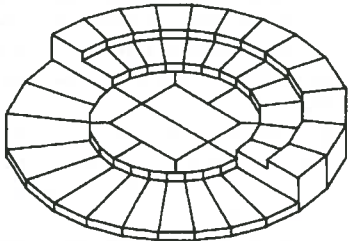
Before taking this assignment Paul Boothroyd had been out mixing for Paul McCartney's last world tour. Although a sign of his undoubted prowess, it's not quite the qualification you might expect for AC/DC, but as he explained: "They didn't want to pick up a known heavy metal engineer. They wanted someone to mix them exactly as they are."

The Electro-Voice system is predictably large, though the weight of components (a mix of MT2 and MT4 from SSE) is concentrated enough that the sheer physical presence of the PA doesn't overwhelm the stage. It's that awkward equation between people's expectations - literally a physical wall of sound - and what's both practical and balanced to deliver the desired effect. In light of the band's stated demands, it's a very naturalistic mix. Boothroyd uses just channels of the Midas XL4 out front: "There's no heavy duty effects or samples," he said. "I just select the bits I want to boost and keep it as tight as possible."

It is very loud - from the desk, which was approximately 100ft from the stage, Paul's meter showed 111dB flat weighted SPL from the backline with the PA turned off during sound check. This could indicate a staggering 140+dB on stage, although the famous 4 x 12 inch cabinet does seem to generate deceptive beams of concentrated energy out front, and there were regiments of them here. Not surprisingly, he watches singer Brian Johnson's microphone like a hawk (he's using the Beyer 700 series VHF system with a cardioid head), riding it manually: "If you don't use an electronic gizmo, it's one less thing to go wrong."

Having said that, he does run Johnson's channel through a Summit TLA 100, which he finds useful to grab the vocal and pull it back up when the occasion demands. With the amount of high end there is flying about on stage, Boothroyd relies heavily on his meters and analysers, watching the curves and levels: "You could say that I mix by numbers," he joked, but it's serious stuff and his careful attention to reining in the more damaging higher frequencies was noted and gratefully received by yours truly.

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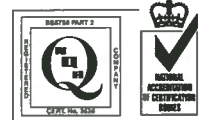
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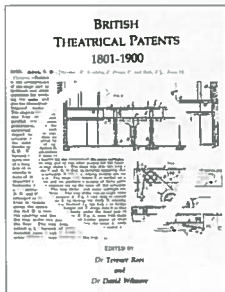
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Dr Terence Rees and Dr David Wilmore  
The Society for Theatre Research  
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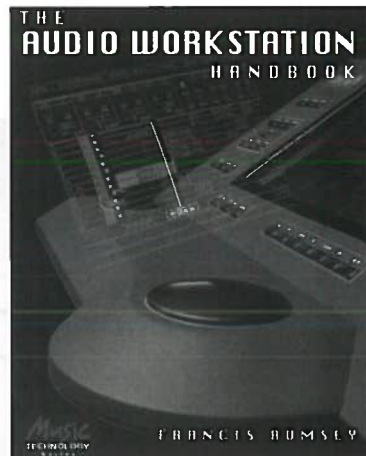
John Clancy has 25 years' experience as a DJ, and as a disco journalist contributes to a number of national publications. Freelance Dee-Jaying is available from bookshops or from How to Books, Plymbridge House, Estover Road, Plymouth, Devon, PL6 7PZ.

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Francis Rumsey  
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Francis Rumsey is governor and chairman of the Northern European branch of the Audio Engineering Society and senior lecturer in acoustics and sound recording at the University of Surrey.

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John Watkinson  
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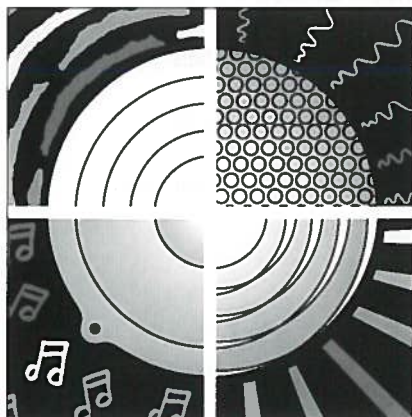
Though taken for granted, television is a complex process and involves moving pictures in colour with sound fed through a variety of mediums. The technique and processes necessary to create, record and manipulate television pictures form the major part of this book.

Whilst this is an introductory book, it does not seek to simplify its subject matter. Although some of the concepts are quite advanced, each is presented in a logical step-by-step manner. The author, John Watkinson, is an independent consultant in digital video and data technology. He is a Fellow of the AES and presents lectures, conference papers and training courses worldwide, whilst also being the author of numerous books.

Television Fundamentals is a comprehensive reference source covering all aspects of digital, video, VTR and non-linear video editing amongst its subjects, and will act as a useful guide to anyone working in the television and broadcast industries.

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# EAGLE-EYED

*Officially the biggest grossing tour of all time, The Eagles' Hell Freezes Over tour, signed off with three shows at Wembley Stadium. Mark Cunningham reports*

If the Nineties are to be remembered for anything, it is bound to be the trend for Jurassic rockers to bite their lips, forget their differences and reunite with their estranged megastar band members for one more run around the block before expiring. If The Beatles could do it on record, for whatever the reason, then why not the Sex Pistols on tour for huge wads of Filthy Lucre?

The Eagles have not seen the light of day as a unit since their acrimonious split in 1980, when they vowed that the day they played together again would be the day that hell froze over. Which brings me neatly to their reunion tour, appropriately titled Hell Freezes Over.

Profits made by the regurgitated Pistols pale into insignificance compared to the cash earned on this one. Although wholly unanticipated by the band, and probably their accountants, Hell Freezes Over has officially become the biggest grossing tour of all-time, breaking even the most recent records by Pink Floyd and the Rolling Stones. The Eagles' retirement fund, it would seem, is fair bulging.

The tour began on May 24 1994 in the States and reached Wembley Stadium on its European leg in July and August, where the fully-seated audience (mostly over 30) waited for the big event with all the excitement normally reserved for a bowls match. All cynical thoughts of money-grabbing opportunism on the part of the band (£40 for a sweatshirt!) were quickly forgotten when drummer Don Henley, guitarists Joe Walsh, Glenn Frey, Don Felder and bass player Timothy B. Schmit ambled onto the stage and opened up with their 1976 West Coast anthem of decadence, the famous 'Hotel California'. Classic country-rock tunes such as 'Heartache Tonight', 'Lyin' Eyes', 'One of These Nights' and the emotional 'Desperado' were strategically placed alongside the members' solo creations, with Walsh's 'Life's Been Good' and Henley's 'The Boys Of Summer' deserving the extended applause. Aided and abetted by four back-up musicians - Al Garth on horns and violin, Scott Crago on drums and percussion, and keyboard players, John Corey and Timothy Drury - the Eagles kicked off the second half with an acoustic section in which their guitars shimmered sweetly to a sunset backdrop and pre-empted a rock and roll climax. It was a show for those who remember the sound of music played from the heart.

## VISION & LIGHTING

A simple, but impressive, stage set was designed by John McGraw and Don Henley, and built by Edwin Shirley Staging, whose sister company also handled the trucking in Europe. The set, an angular mish-mash of broken architecture, intended to convey a post-holocaust scene, as seen in the 1968 movie, Planet of the Apes. To enhance that imagery and also add a flavour of the desert, so vivid in the Eagles' music, a sandy mountain range painted on to acoustically transparent scrim was placed in front of each PA tower.

Positioned on the outside of each PA tower was a 30ft x 20ft video projection screen,



The Eagles in post-holocaust mood at Wembley Stadium.



The acoustically transparent screen in front of the Clair Bros PA and to the side, one of two Nocturne projection screens.

supplied by Nocturne in the USA. As with many UK shows in the summer, Hyde Park's Masters of Music included, the lighting and video crews faced the insurmountable problem of attempting to enhance a show which was mostly in daylight. Production manager Chris Lamb commented: "The screens don't come up until the sun goes down. They are purely for close-up documentation and we have a four camera shoot going on, with a team headed by video director Carol Dodds. There is a house camera in the mixing tower, one on a boom in front of stage left, another on a trolley in front of the stage and a hand-held moving around the band on stage. We're a little stuck over here in Europe because it gets dark so late. Normally in the USA and the rest of the world, we wouldn't go on stage until dark, but we're forced by curfew laws and public transportation to start the Eagles' part of the show at around 7.30pm and end early."

LD Richard Schoenfeld, better known as 'Nook', began working on Hell Freezes Over

with long-time Sting associate Nick Sholem who originally designed the lighting regime in 1994. "When this started out, I ran the console and he controlled the spotlights," explained Nook, "but he had a commitment to Sting and had to leave, so I've just been doing it all over the last few months.

"From a lighting perspective, it's a basic show because this isn't a band that likes flash and trash lighting. It's more about painting a pretty picture and letting it be. We have 56 LSD icons, over 200 different colour changers all over the rig, about 100 1kW groundrows and stacks of Molefays. Everything has been hired from LSD for the UK performances. We've used different lighting companies for most countries and it has been a very unique experience in each! We're taking the colour faders with us everywhere we go and we then contact local suppliers for everything else needed."

Nick Sholem was the among the first, if not the first, LD to use a Wholehog lighting console for a major tour (Sting in 1993/4), and a Wholehog was specified once again for the Eagles. "Every cue is on time phase," explained Nook. "I programmed this show with a Wholehog 2 because Nick likes the latest technology. If I have to close spotlights and keep hitting Go cues, that's enough for me, because I don't want to keep looking around for verse/chorus/verse/guitar solo movements and after a few shows it's all automatic pilot.

"For each song I have a list of cues on my computer monitor and the comments page, where I have all my spotlight cues programmed in, is fantastic. I'm talking all the time to my 10 operators and it helps to have a foolproof guide. There are five guys in the band and you have to have a light on each of them because of the video cameras. The Stones did it the same way and you could always see them clearly on the video screens, but on other shows like Page & Plant, they had the front spots in red which may have looked OK on stage, but it meant that the



**LD Richard 'Nook' Schoenfield.**

video guys were in hell! Having the members of the band lit at all times does take away from the show, but you can't just light one or two."

Outside the UK, Nook has been using around 30 Wybron mole scrollers, but for the UK LSD's Molemags performed the same role. Of the rest of his equipment, Nook commented: "I have 20 Cyberlights, a bunch of Wybron Par 64s, lightning machines (for the show intro), Martin lights and a Cloud projector. I also have a 2.5kW Pani slide projector and a 2kW glass loop wheel projector that was bought from Phoebus in San Francisco, but we won't be using that in Wembley because it's not dark enough!"

Operating 60 Icons from his Icon desk was Ken Delvo who began the tour as a technician, but took over from Chris Barron when he went on to another project halfway through. Nook has also periodically stepped out of the tour to work the lights for Lenny Kravitz, Sting and Megadeth, but says that Hell Freezes Over has been one of those tours that won't go away!

#### **FRONT-OF-HOUSE**

Chris Lamb pointed out that the 120-cabinet Clair Brothers PA system at Wembley was shipped to the band at the start of their European tour in Dublin, most of it coming direct from Hyde Park's Masters of Music megagig.

"There have been a few problems here in Wembley because we are playing the venue in a way it hasn't been played before, and it's almost like a new venue," explained Lamb. "This will be my tenth show and usually we play at one end, but this time we are at one side and this has had an effect on the sound design because instead of a long, narrow venue, we are now dealing with a short, wide area.

"We are trying to achieve the best sound possible because that's what the group's about, so we've been working all night to adjust the system, using the Stadium's own computer-controlled time-correction delay which has a range of JBL horns."

Hell Freezes Over was a combined audio effort between Clair Bros and FOH control equipment supplier, the Schubert Systems Group of North Hollywood, of which engineer J.D. Brill is a partner. He was using two 56-channel, Californian-manufactured Gamble EX Series consoles, with one mainly used as a sub-mixing board while he rode the faders of his main forward-facing board throughout the show. "I have all the main channels on my left hand board subbed across to the main board for ease of use," he said. "So I am working with eight different groups and it cuts my working



**DJ Brill at the FOH position.**

area down. Don Henley plays drums for about 65-70% of the show and his feel is a lot more mellow than Scott Crago. Glenn Frey's approach to playing grand piano is totally different to the other guys, and these are really the only times I have to ride the individual faders and respond to attack changes."

Although the Beyer M700 had been the favoured vocal mic on previous legs of the 26 month tour, Brill opted for the Shure Beta 87 for Europe. "The Beta 87 is a closer proximity mic and because we have 11 mics, I'm looking for the highest rejection I can get and those mics do it for me. We're using the new Beta 56s on all the guitars and on the snare drum, and SM98s on the drums. In the kick drum we have two different mics. There's an SM91 for my front-of-house requirements and there's also a Beta 52 in there for Chris Lantz's monitors."

Effects processing included a TC 2290 digital delay, three dual engine TC M5000 digital reverbs, two Lexicon PCM 70 multi-effects units and the new PCM 80. Brill was also using two new Yamaha Pro R3s and a Lexicon 480L.

For vocal compression, he chose Summit TLA-100 compressor/limiters and additional control was provided by a BSS DPR-504 Quad gate and a BSS DPR-402 dual compressor/de-esser/limiter, for which he found a unique application. "As well as using it on vocals, I use one channel to de-ess Al Garth's saxophone. When he's screaming loudly on the horn, the BSS will cut the 2.5kHz out and leave everything else in, the result being an exciting, but controlled, sound. When he's playing quieter, the 2.5kHz that is then needed will return to give a more natural sound."

Much Behringer equipment was to be seen in the racks, with a Denoiser for the keyboard rigs, 12 channels of Intelligates and three Composer stereo compressors. "You get all the attack, speed, release and hold features that are on the dbx 165A, a \$1,000 compressor that I use on the kick and snare drums, but the Composer costs only \$350. I use dbx 160As on the drum and percussion overheads because there are an awful lot of soft parts in the show and I need to limit them.

"There's much use of quiet shakers but they need to be in the mix, so I drive those mics harder than I might on most other gigs. When the cymbals are slamming, the 160A cuts in and limits pretty hard."

Brill's Schubert Systems Group manufactured a bank of six-band parametric EQs for use on the acoustic guitars and Schmit's DI'd bass, while a Yamaha SPX 990 was used for guitar processing. To EQ the PA system generally, Clair Bros' standard issue of a TC



**Monitor engineer, Chris Lantz.**

1128 EQ system with 10 channels all controlled by a TC 6032 graphic EQ remote with flying faders was used.

Clair CTS-2 crossovers took the reins of the Clair/Crest Audio amplified PA, which was configured six cabinets wide by 10 high. Brill explained: "The stacks consist of both S4 short throws, and P4 long throw boxes. Each have JBL drivers but they have a completely different sound. Our top six rows of PA are long throw because they have further to project. So to neutralise the differences we have the two sets of crossovers and I also run my long throw boxes about 5dB louder than my short throws."

At no time on the tour did the decibel reading on Brill's meter rise higher than 99dB, a sign of his wish to preserve a delicately tuned hi-fi sound. "There are moments when you can almost hear a pin drop, but we also crank it up on some of Joe's songs. A lot of engineers will compress and nail the volume down to one area, but I like working at a level where I can increase the band's dynamics and react to the music."

#### **MONITORS**

Monitor engineer Chris Lantz was using both a Yamaha PM4000 console and a Harrison SM5 to co-ordinate 70 channels and 22 on-stage mixes. 26 Clair 12 AM wedges and two drum fills consisting of two 12 AMs and two ML 18 cabinets were spread around the stage, and apart from Joe Walsh, the band used nine Garwood Radio Station in-ear monitoring systems. Lantz commented: "The guys use the ear monitors in one ear only, mainly to hear the vocals and vocal enhancements, but they are also listening to the wedges which fill out the sound. For the wedges I use 16 TC Electronic TC 1128 28-band graphics, but rely on just parametric EQ from the desk for the in-ears to take some of the high end out of them.

"The combination of the one ear and the wedge is excellent because when you use both ears you're stuck in the same world wherever you are on stage. With one in-ear you can walk around the stage and feel the different pockets of sound and warmth of the speakers with your open ear, as well as maintaining a balance with the ear monitor. I thought that would be weird, but in reality it works well."

Lantz used the Harrison SM5 as a routing console for the wedges and sub-mixed the signals to his main PM4000. "The only effects I'm using are delays and reverbs from three Yamaha SPX-1000s for vocals," he said. On the acoustic set, when the five of them come down and sit on stools, we add a couple of wedges and move them out front."



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# ZERO LIMITS

*'Unlimited Sound' is RCF's new global catchphrase. Mark Cunningham visited the company's Wickford office to cast an ear over its wares and learn of its future direction*

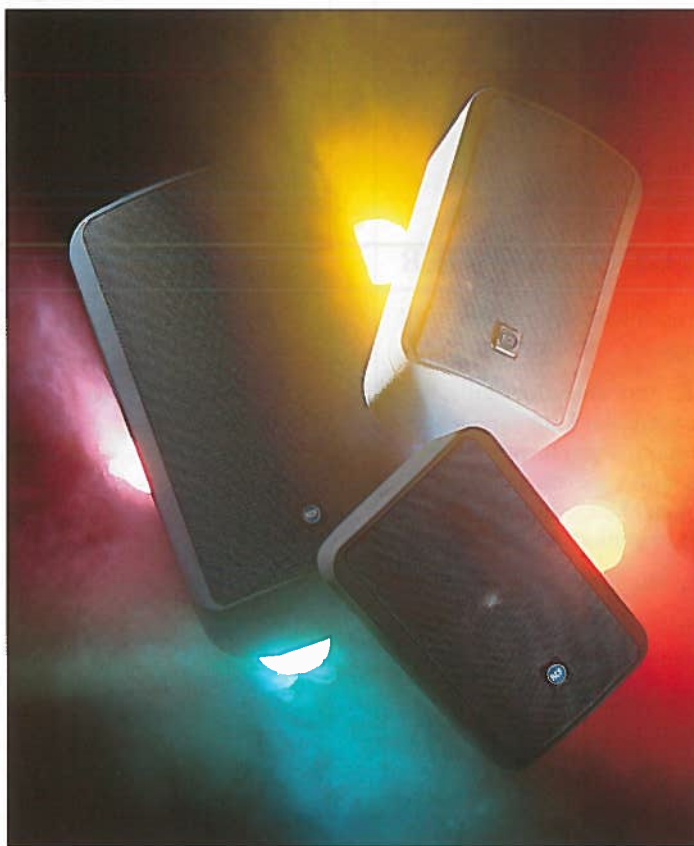
With the wind of change blowing hard through its corporate gills, RCF is beginning a tough marketing onslaught that, it is envisaged, will place it among the giants at the top of the audio industry within the next four years. And, as a certain movie critic might say, 'why not?' A manufacturer of quality sound equipment for almost 50 years, RCF (Radio Cine Furniture) SpA began life in Italy as the producer of transducers for OEM consumption, megaphones and ribbon microphones.

By the late 1960s, RCF was manufacturing its own 15 inch and 18 inch loudspeakers, with consultancy involvement from the late Dave Martin, and the company soon branched into manufacturing electronics, with emphasis on the commercial 100 volt line sector of the OEM market.

But it has only been since the late 1970s that RCF began to actively promote its own branded products, and the formation of the wholly-owned subsidiary, RCF UK, in Wickford, Essex in 1991, has played a significant part in the current buoyancy of the company. RCF UK's managing director, Philip Price, whose audio industry experience dates back to 1972 and previously included selling RCF products as an importer, says: "Our initial goal was to establish the core business of loudspeaker component sales and the commercial 100 volt line market products, and I think we went about that with more than a pinch of success."

The turnaround which led to RCF's sharper image and direction, came in March this year with a change of leadership at the company's Italian headquarters in Reggio Emilia, as Price explains: "The original owner and president of the company, Michel Rossi had reached his eighties and decided to retire. He wanted new blood at the top and at Frankfurt, we introduced the new president and MD, Arturo Vicari, who has been involved with the MI and professional markets with his own company, AEB for many years. AEB manufactures crucial components for a number of industry leaders' products and the technology it is best known for is wireless microphones. Now that AEB is a part of the RCF Group, we are reaping the benefits of its technology."

Although introduced at Frankfurt, this year's PLASA show has been chosen by the company as the UK launch platform for its new 'Unlimited Sound' campaign. To mark the occasion, RCF has designed a new stand, double the size of its space in 1995, with a comfortable, air-conditioned showroom which



**The Monitor series from RCF, now well established in the installation and contracting markets.**

***"... it was decided that RCF would expand its professional range extensively, beginning with, as Price puts it, extremely marketable, good quality 'bread and butter' products."***

will be available for hands-on demonstrations. "We have had an aggressive marketing campaign since 1992-93, particularly in the pro market," added Price, "but it was time to bring the company up-to-date with the rest of the industry, and we are now labelling the entire concept of our product range RCF Unlimited Sound.

"I think it's appropriate because we do have such a large and complex range of products, from small amplifiers for church meetings to touring systems. The concept came from Italy and we have supported it all the way through, because it means we will be delivering a simultaneous and consistent message throughout the world."

#### **BUILDING THE REPERTOIRE**

In Frankfurt, it was decided that RCF would expand its professional range extensively, beginning with, as Price puts it, extremely marketable, good quality 'bread and butter' products. "We showed prototypes of the new

MFA range of four low impedance, high powered Mosfet design amplifiers, all rateable into 4 ohms, for general contracting, PA sound reinforcement and MI. These start from the MFA 200, a small 100W per channel amp, up to the top-of-the-range MFA 1200, a 600W per channel model. The smallest amp is convection cooled which is important because church or theatre installers do not want the sound of a fan cooling the amp. The other three models are fan cooled, but very quiet."

Price promises two additional MFA amplifiers of a higher specification for Frankfurt in 1997. With the UK market already saturated with quality amplification products, did he not feel slight nervousness about introducing the MFA range?

"We are only too aware of the difficulties, and wondered for a long time whether we were making the right move, but I've been very encouraged by the reaction we've had and some high profile customers like Marquee Audio are already installing them."

With the expertise acquired from AEB, it was only a matter of time before RCF produced its own wireless microphones, such as the 400 Series VHF system, even though it had been marketing Far East-manufactured VHF products to the contracting market since 1994. "We have started off with a table-top diversity receiver with hand-held and lavalier mics, which between the two options appear to cover most applications in contracting, churches, conferencing, MI and general use. And for a low-cost VHF system, the electronics are very advanced. At PLASA we will be introducing a rack-mount receiver and models approved to the new European ETSE Class 1 specification."

RCF's plans for future additions to the wireless microphone range include a multi-channel PLL synthesised UHF system, which is currently under development in Italy and will be launched in Frankfurt in 1997. Price comments: "The technology to produce this has been in place for some time, but our R&D team have been looking at simplifying certain electronics on the receiver side even further.

"Obviously, with that system we are looking at a much higher quality end of the market but also bringing the pricing down even lower than some of the recently-introduced systems that have just been released. Our aim is not to cut margins. We don't need to because PLL synthesiser technology is becoming more affordable all the time as more chips have become available."



In the foreground, Phil Price, managing director of RCF UK, with sales director Linton Smeeton (far left) and sales executive Andy Brown (centre).

### PA SYSTEMS

Aimed at a small PA application, and designed in a similar style to the company's popular Monitor Series installation loudspeakers, is the new PM 100. The speaker has an integral 100W amplifier and is fitted with mic and line inputs. Also new, and ideal for supplementing the PM 100, is the PS 500, a small powered sub-woofer which features a 12 inch RCF sub-woofer driver and an integral 500W mono Mosfet amplifier. The circuitry allows the feeding of a stereo signal into the cabinet which is then summed into mono for the sub-bass. "You can either run a pair of PM 100s as a small voice reinforcement system or add the PS 500 to them for the additional full-range power.

"RCF obviously developed the transducer for the PM 100, a six-inch twin-cone device, and despite the absence of a separate tweeter, the HF response is excellent. The market acceptance, particularly in the A/V, conferencing and contracting markets has been very positive. In Europe, there are many small, space-saving systems like this on the market and they are very popular in the Mediterranean beach bars for duo acts with eight-channel mini mixers."

Teasingly, Price intimated that RCF will be launching an otherwise top secret new product at PLASA, which he described as a "very compact, revolutionary speaker system which will cross over into a variety of markets."

The mixer is yet another product which has not escaped the enterprising skills of RCF, and to complete a small PA rig with the PM 100/PS 500 speakers, the company has manufactured two eight-channel mixers: the MX-8 and

MX-8d. Each has four mono channels with line and XLR balanced inputs, two band EQ and 48 volt phantom power, plus two stereo channels with line jack inputs. The MX-8d model also includes a digital signal processor which can select between 16 effects programmes. Sales executive Andy Brown comments: "At the end of term party at Reading University in July, one of these mixers was used very effectively as part of an 18kW RCF Event system to split feeds and also act as a sub mixer for the DJ."

The Monitor Series is now firmly established in the installation and contracting markets, and a number of breweries, including Scottish & Newcastle and Bass, feature these products on their approved lists. "Bass specifically requested a white version of the Monitor 8," says Price, "and because of the quantities they required it was viable. That line of boxes was expanded at Frankfurt with the much smaller Monitor 3, which has a similar price to the Bose 101 and is ideal for background music applications. They are magnetically shielded, making it possible to place them next to television monitors for A/V without any problems."

RCF entered the touring arena in 1994 with the Event 3000, a 18 inch sub-woofer, 15 inch

and horn mid-high system, and quickly followed it with the 12 inch and horn Event 1000, and Event 6000, a 2 x 15 inch horn-loaded mid-range product. The range was finalised last year with the ESW 1015 sub-woofer, but RCF still have major plans in the large box field, as Price explains: "Next year we will be looking at more specialist short, medium and long-throw boxes with controlled dispersion for the contracting market. We will also be bringing into the frame a lower priced range of cabinets for the MI sector to replace our established no frills Espace range.

"All of our loudspeakers currently use cast metal chassis that require expensive production techniques, and we have been able to supply some of the big touring companies because the tolerances are very tight. But we have introduced another, more automated production line in Italy where they have already started producing some lower cost pressed steel chassis. It is now possible to produce 12 inch chassis for the same price as Eminence and Celestion, although RCF is currently only doing this on an OEM basis and it is a section of our business which is thriving."

One market which will be receiving much attention from RCF next year is the MI industry. "We are aware that as far as PA sales have been concerned, the MI business has been in the doldrums for some time, although we have been seeing some good signs recently. Fortunately, we have the background to be able to produce the right products at the right price, and we will be making a big push into that sector in 1997."

RCF's goal for the near future is to harness its inherited strengths and compete in the premier division, and nothing less is acceptable. Price also believes that expansion of the UK operation is inevitable within the next 12 months. "We've kept the touring area purposely low-key, purely because of the amount of OEM business we are doing, but it is an area that we are constantly monitoring. There is still, however, a lot more ground to cover in other sectors.

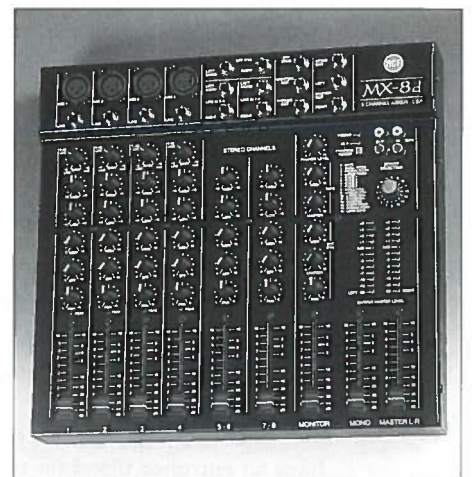
"We know the MI sector is particularly tough and there are some very good brands, but we aim to be with them. We like to think that with the Monitor Series we've established ourselves almost at the top of the contracting and leisure business, and there is no reason why, with our steady growth pattern, we won't be able to achieve all our aims."



RCF's MFA 1200 amplifier.



The Event 4000.



The MX 8d mixer.

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### Designer Talk

*A number of leading designers discuss the approach taken to particular productions and the methods they employed to achieve some dramatic results*

- 14.15 - 16.45

Professional Lighting and Sound Association

### Standards for Professional Dimmers

*A lively discussion is anticipated on the current situation covering Professional Dimmers and related standards*

## Tuesday 10th September

- 10.45 - 11.30

Association of Lighting Designers

### Equity, the ALD and Agents

*As the title suggests, this forum will concentrate on the liaison between all elements of the production, including the artistic members of the cast*

- 11.45 - 12.45

Association of Lighting Designers

### Legal Talk for the Designer

*This seminar examines the thorny issue of contracts, and what to do when the client won't honour their contractual obligations and refuses to settle an account*

- 14.15 - 16.45

Institute of Sound and Communication Engineers  
(The Haydon Warren Memorial lecture)

### Noise Cancelling Techniques in Speech Communications

*Prof P D Wheeler of Salford University outlines the various methods of reducing intrusive noise for clear and intelligible speech communication*

### Digital Audio and Sound Reinforcement

*Graham Boswell of Prism Sound in Cambridge examines the growth of digital techniques in sound reinforcement*

### Microphones in the Real World

*Independent consultant Peter Mapp discusses the use of microphones in a wide range of situations*

Admission to the seminars is free providing you have an entrance ticket for the PLASA Show or for Presentation Technology.

## Wednesday 11th September

- 10.45 - 11.45

Association of Lighting Designers

### Designer Talk/Inappropriate Styles

*Several leading designers have been invited to offer their views on unconventional approaches to lighting design, and the way in which one style of approach associated with one particular discipline may be successfully applied to another style of performance*

- 12.00 - 13.00

### Safe Use of Dry Ice in Special Effects

*Roger Palmer, manager of Dry Ice is currently managing the dry ice business in the UK. His presentation will cover the properties of the product, hazards, risk minimisation, storage, handling and use*

- 14.00 - 15.00

Society for Theatre Research

### David Wilmore and Theatrical Patents

*Following the launch at PLASA of David Wilmore and Terence Rees' book entitled 'British Theatrical Patents 1801-1900', David Wilmore will present an illuminating talk on nineteenth century theatrical patent discoveries*

- 15.15 - 16.45

Society of Television Lighting Directors

### TV Lighting - Talk to the Experts

*A panel of respected lighting directors and consultants will discuss the current role of the LD and consider the techniques and technology employed in studio and location lighting*

## Forum '96

Marlborough Room - Level 1

Wednesday 11th September

Gateway School of Music Recording and Technology, Kingston-on-Thames has joined with PLASA to present the following Forum.

*Chaired by Dave Ward, Principal, Gateway School*

- 10.45 - 12.00

### PA in the Small Venue

*An opportunity for discussion with experts on the problems of creating quality sound for small venues*

- 14.00 - 16.00

### Automated Consoles in Live and Theatre Sound

*A chance for live sound engineers to discuss the principles of automation in live sound with a panel of leading console designers*

# PLASA HIGHLIGHTS

**As the countdown begins in earnest to the largest show in the exhibition calendar, L+SI details just some of the major product launches taking place at Earls Court**

**Celco** are making a dynamic response to the demand for fully-integrated multi-purpose show control on a lighting desk. The launch of the Ventura 1000 is the culmination of a project to bring control of 1000 channels of up to 100 automated fixtures, along with 240 dimming channels and 18 playback faders to a single board.

The list of features found on Ventura also includes 1240 dimmer channels arranged over 10 pages, with 1024 DMX channels arranged on two lines and 16-bit internal resolution, with eight or 16-bit output, depending on the protocol selected.

■ **Celco - stand F34**

**ShowCAD** will once again be much in evidence at the PLASA show with the Windows version of the software being previewed. Considerable revisions have taken place, making the product more visually graphical and internally dynamic.

With increased capacity, access to Local Area Networking, multi-media features, CD Timecode reading, triggering of video and sound sample capacity, and with all software drivers written for Windows 95 easily available, manufacturers Axon hope that the system will be even more popular than the DOS-based ShowCAD.

■ **ShowCAD - stands E20 and F40**

**Lightfactor's** stand will be one of the largest, with sister company **Light Processor**, as well as **DAS Audio**, being adjacent to the main stand. Studio Color from **High End** will feature, this being the first year that these automated wash luminaires will be in full production for the show.

Light Processor, meanwhile, will be showing their range of lighting desks, dimming packs and controllers. Notable among these will be the new Q Commander multi-purpose controller. DAS Audio will demonstrate their full range of speakers, amplifiers and audio accessories, including three new speaker enclosures.

■ **Lightfactor - stand E7/E8**

**FAL** will show the new FAL2000 lighting projector on the **Lightmasters** stand. The company claims many features not found in scanners of this size, including two colour temperature correction filters and a three-facet bi-directional rotating prism. The unit offers nine dichroic filters (plus white) and 30 dual-colour combinations. It also carries four variable-speed, bi-directional rotating gobos, with four fixed gobos, all inter-changeable. Control is via DMX512 or automatic music activation, functioning via a mono jack input.

■ **Lightmasters - stand C38**

**Electrosonic** will be exhibiting a weird and wonderful range of technology, including a videowall airship, a video roller-coaster, the largest fruit machine in the world, Esbot the robot and a 53" rear projection video unit.

New products being launched at PLASA include a new version of 2 x View - 106" wide and 32" deep, a completely new processor - Imagestar 2 - which gives broadcast quality images from little more than VHS tape and C-Through for Windows videowall control software.

Electrosonic will also be launching, in

partnership with Cadsoft Graphic Systems Ltd, a new range of digital storage and delivery equipment - Cadsoft - which can be used for trouble-free replay of video.

■ **Electrosonic - stand G22**

**Avolites** will be launching the new Diamond III moving light console. The D3 combines all the reliability and flexibility of the Diamond II in a streamlined format, capable of handling 3072 DMX channels, with capacity for 120 moving lights.

Also on the Avolites stand will be the new ART dimmer, which, according to the company, uses leading edge technology to achieve high quality, silent dimming suppression. In addition, the Pearl, Sapphire and Diamond II will also be prominent on the stand.

■ **Avolites - stand C4**

**Batmink's** 100sq.m stand will be showing the new Omega intelligent moving lights from Genius, together with a range of DMX controllable smaller effects. Also on stand will be Lampo's Raffaello lighting effect, together with products from a host of companies including JBL, Citronic, C Audio, Denon and BSS.

■ **Batmink - stand G38**

The **Mark IV Pro Audio Group** stand this year will act as host to a number of companies.

**Mark Teknik** will show the recently-launched DN4000 digital, user-programmable, dual-channel, five-band parametric equaliser and delay line, which incorporates KT's newly enhanced 20-bit converter design.

**Midas** will be exhibiting the XL4 and XL200 live performance consoles, both of which are currently being used on numerous world tours. Midas has also recently launched a new communications/monitoring module for the XL4, specifically for use in live broadcast applications.

**DDA** will also be exhibiting a number of live mixing consoles, including the CS3, which has been specifically designed for live installations and theatre or concert applications.

■ **Mark IV - stand H48**

**PCM** will feature the comprehensive range of Lodestar electric chain hoists. Also on display will be a selection of the Load Arrest equipment that PCM have pioneered during 1996 together with 'Fall Arrest' equipment, consisting of harnesses and climbing ladders.

A demonstration table will show the use of the Pfaff Worm, a geared screw jack that is intended for applications such as stage elevation. Other Pfaff items on show will include chain blocks, lever hoists and a range of industrial hand winches.

■ **Pfaff - stand E28**

PLASA 96 will see the **Martin Audio** EM contractor range completely overhauled and extended with the addition of the EM56.

The company are also adding to the ICT Series, with the addition of the ICT 100, a high-power background speaker in a moulded plastic box and the ICT 500, a 10" ICT driver designed to give high quality bass performance from a compact cabinet. Martin will also be launching the MX5 controller:

## In Brief . . .

- **Allen & Heath's** GL4000 8-buss and GL2000 4-buss live mixers. *Stand E32*
- **Altman Stage Lighting Company's** Travel Lite. *Stand EP12*
- **Ampetronic's** ILD 300 - Induction loop driver. *Stand SQ44*
- **Audio Design Services** Ambassador and Monarch range. *Stand G26*
- **Axis Audio System's** Groove Tubes and Studio Monitor. *Stand SQ60*
- **Baldwin Boxall Communications'** new range of Midas amps. *Stand H32*
- **BSS Audio's** DPR-901 II, Omnidrive Install and Soundbench. *Stand SQ64*
- **Beyerdynamic's** S600 UHF hand-held transmitter, and V200 VHF wireless system. *Stand E40*
- **Bretford's** Series 400 Electric Screens and TV and VCR brackets. *Stand D18*
- **Bytecraft's** State II and Status 600 automation systems. *Stand H2*
- **CCS Lightcontroller's** Colibri and Pagayo. *Stand C28*
- **Clockaudio's** mics, microphone stands and monitors. *Stand SQ8*
- **ColourLite Company's** Ultra Bounce and Ultra Blackout. *Stand P2*
- **Court Acoustic System's** surround sound and full-range systems, along with the new Sub Bass 600. *Stand J40*
- **Deco Leisure/Dare Pro Audio's** Micro speaker and the DRX 400 bass cabinet. *Stand H14*
- **DeSisti Lighting's** Goya and Renoir shadowlights. *Stand E14*
- **Disco Tech Pro Light's** Gobo FX 250 DMX and Master/Slave DMX system. *Stand J30*
- **ETC's** CE Source Four luminaire and Express consoles. *Stand H12*
- **Formula Sound's** Zoner ZM 243. *Stand K4*
- **Future Light Inc's** C-Clip Truss Protector. *Stand EP2*
- **Garwood Communications'** ADA8, antenna distribution system and System 3 in-ear systems. *Stand F36*
- **Glantre's** Spiralift. *Stand E26*
- **GAM's** X3 Flickermaster. *Stand EP20*
- **Hardware for Xenon's** Optimal Light Source. *Stand E38*
- **Harman Audio's** JBL Contractor Control Series. *Stand G30*
- **HHB Communications'** showing of the Panasonic SV3800 DAT Machine and Pioneer D9601 DAT recorder. *Stand SQ10*
- **HW International's** Shure T, Shure Lx and Shure UHF Series of wireless systems. *Stand F26*
- **Hz International's** PE200 & PE300 active powered speaker and new Mosfet amps. *Stand H52*
- **IES's** digital dimmers. *Stand F16*
- **Jamo's** U100T PA loudspeaker and the U110T speech projector. *Stand K24*
- **JYG's** Turntable Tops. *Stand K20*
- **JTECH's** Silent Pager. *Stand SQ65*
- **MDG Fog/Smoke Generator's** Atmosphere and Ice Fog. *Stand EP14*

- **Mec Truss's** roof top system. *Stand A18*
- **Neutrik's** Powercon Mains Connector. *Stand D27*
- **Nikkodo's** - 50 Disc Video CD Auto-changer and Graphic Player. *Stand B24*
- **Pagestar's** power amps. *Stand SQ61*
- **Peavey Electronic's** Mediamatrix Mini-frame, and PM-1000 mixer. *Stand D28*
- **Proel International's** FBT Lightforce range of speaker cabinets featuring ADAP. *Stand D33*
- **Rosco's** Calcolour Reformulated fluorescent paint. *Stand D12*
- **Ryger Electronic's** Defender 250 ELC intelligent lighting range. *Stand G32*
- **Selecon's** Acclaim 500W. *Stand F10*
- **John Hornby Skewes'** Scanner range of radio microphones. *Stand E56*
- **Sound Design's** acoustic absorbers. *Stand SQ56*
- **Stage Technologies'** Explorer High-Wire, and Big Foot. *Stand E12*
- **The Smoke Company's** Powerfog Hydrhaze. *Stand C36*
- **TL Audio's** Indigo 2051 Crimson 4012. *Stand SQ63*
- **TOA's** Sound and CCTV. *Stand SQ54*
- **Triple E's** Wheeled hook clamp and Unicyc - new look track. *Stand D14*
- **White Light's** Wave FX projectors. *Stand F4*
- **Whiteley Electronics'** System Link, Sigma amps and ISIS 8000. *Stand SQ57*

an improved version of the MX4 for two, three and four-way operation, it offers limiting, crossover and drive unit delay facilities. It also now only requires the use of a single dedicated plug-in card.

PLASA will also see the first UK showing of the Wavefront 8 Compact and WSX folded horn sub-woofer.

■ **Martin Audio - stand F50**

**Canon Audio** will be showing their complete range of products including the V-100/V-100W, V100 four-way cluster, V-100EX weather-resistant version and V-SB100 sub bass, as well as the V-200. They will also be demonstrating the new UCM-200 mounting accessory for clustering V-200s together.

■ **Canon Audio - stand J28**

**Soundcraft** will be launching the K2, the latest addition to the K range of live consoles. The K2 is an 8-bus console designed for touring or fixed installations and comes equipped with a sweepable 100Hz high-pass filter, a 4-band EQ with two swept mids and switchable Q, eight aux sends, LED input metering and a MIDI-controlled muting system.

■ **Soundcraft - stand F32**

**Turbosound** will be launching a neat Impact system concept, incorporating the new Impact 1A-1400 amplifier.

There are four Impact sound reinforcement packages - the Impact 8000P, 1200P, 1280P and 1280A - these different configurations allow the user to precisely tailor the power of the system to any application. With two passive and two active systems, there are options for a wide range of situations including live music, PA and

conferencing, background sound and audio-visual.

■ **Turbosound - stand D30**

**Sennheiser UK** will be exhibiting a range of microphones and radio microphone systems including the new 3000 Series RF system. Also on stand will be the new System 1081 and System 1083 switchable frequency, hand-held and belt-pack UHF radio systems.

A range of Anchor, Interkom, Televic, Canford Audio and Rycote products will also be on display.

■ **Sennheiser - stand F30**

**Celestion** will be exhibiting the new Road and KR series. The Road Series is a line of robust, moulded PA cabinets aimed at working musicians on the road and smaller venues.

Also on display will be the CX Series of sound reinforcement enclosures and the SR Series of loudspeakers.

■ **Celestion - stand G34**

The latest example of dynamic technical design from **DHA** is to be launched at the show in the form of the Digital Beamlight.

The design of the Digital Beamlight forms a fully integrated, compact unit without the need for additional equipment. A colour scroller, spill rings and switch mode power supply with a built-in dimmer are all housed within the unit. It also has a universal power input so can be used with any voltage without a transformer.

DHA will also be exhibiting and demonstrating a range of their glass gobos on stand.

■ **DHA - stand J12**

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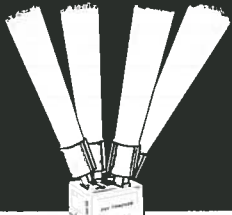
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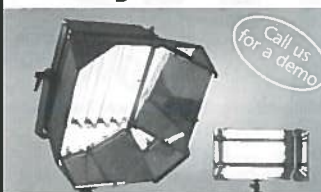
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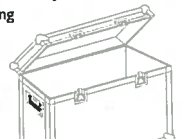
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## Steve Moles talks to Lighting designer, Roy Bennett

Le Roy Bennett is one of the best known lighting designers in rock and roll, and certainly one of the busiest. In that intangible realm of talent, where did his abundance come from? Born in Warwick, Rhode Island (a southerly outpost of the city of Providence) in the late spring of 1956, Bennett spent his first seven years in what is often thought to be one of the prettiest States on the East Coast. His father worked as an interior designer, whilst his mother was a teacher.

Although he had no idea what he wanted to become when he graduated from High School aged 18, the nurturing influence of his home and parents had already pervaded his life. Spending most of his childhood close to the ocean (the family briefly relocated to New Jersey for a four year interlude) has had a lasting effect, and he continues to draw inspiration from being close to it; but it was in the family that the telling influences arose.

His mother was a trained opera singer and both she and his father were active members of the local theatre. As a result, the house was filled with a wide range of classical music, and with an older and younger sister - Keni and Misi - a rising tide of rock and pop. Bennett's father was prone to experimenting with his design ideas on the family home, and was always decorating, an indulgence he passed on to his son, who in his teens slept between vivid lime-green walls and, on one occasion, coated his bedroom in Mylar.

At 18 he was still uncertain what to do. He had attended his first concert - Uriah Heep at the Providence Arena - when just 15, and although mightily impressed, this experience hadn't percolated through into ambition. He then spent a few summers working in a clothes store in town and felt a strong affinity to fashion, but this did not develop further, and so he chose to return to school, enrolling at the local private school where his mother taught.

An impassioned art teacher awakened a nascent urge in him and he discovered a talent for sculpture and a love of art in general, another incremental influence towards creativity that was about to ripen. Returning to the clothes store for the following Summer, he and colleagues from the shop attended a party where members of the band Face Dancer were

in attendance. Bennett formed a strong friendship with the bass player and before he knew it he was off to Washington DC for two years looking after the band's back line and running the lights for them. "I really wanted to be a singer," he candidly admits. "I was quickly cured of that notion, but handling the lighting was just as good - I felt like I was performing with the band."

Returning to Rhode Island with his new found lighting skills Bennett joined Pollico Lighting and went straight out on the road with Boston as third man on the crew. Boston's lighting designer Richard Ocean was a big influence and although the two men didn't

*"It was the best thing I could have done. It taught me the practicalities and how to take everything into consideration."*

initially see eye to eye, Bennett later admitted that Ocean did start the process that was to lead to his first proper design. "He would ask 'what would you do in this situation?' He made me think about how to create a scene to music, and he also showed me how to draw lighting plots."

The other half of the fertile Ocean-Rose Partnership, Lee Rose was crew chief on the tour and it was he who not long after thrust Bennett into the hot seat. Rose went to Zenith Lighting in LA to work on the Pat Travers Band tour and took his young protégé with him. While there, Bennett also worked with Phil Freeman, another LD he cites as an inspiration for a young aspiring designer.

It was also a time he readily acknowledges as important for another reason: "These guys had something I believed I could draw on. A reassurance. The years I spent as a tech' working for them was the best thing I could have done. It taught me the practicalities, how



Roy Bennett, caught on camera at a recent LDI Show, taking a sneak look at his stand lightshow design for Martin Professional.

to take everything into consideration, how not to be a pain in the ass." Zenith realised that Roy Bennett was destined to be a designer and when the opportunity came up, they put him there.

The act was Prince, the Dirty Minds tour to be precise, and the rest, as they say, is history. Well almost. It was not an easy transition, and although the opportunity was given it had to be fought for. Prince was well known to be an exacting task master who always

demanding nothing less than perfection.

Bennett had no doubts he could do the job: "It was easier then, no automated lighting," and picked up the music really quickly, but it was a battle of wits over presentation. Despite the inherent tension between them it was, in hindsight, a remarkably fortunate meeting for both men. As Prince's star ascended, so Bennett was able to expand and develop his talent. Experimentation with all manner of media - lighting, set, fabrics - brought real theatricality to this most idiosyncratic performer and marked out Bennett as a new and innovative talent in the lighting world.

Today Roy Bennett, his wife Julie, and their two year old son Dakota, are planning a return to the East coast after a 10 year hiatus which he spent working for Prince in Minneapolis. With long walks along the beach again in prospect, no doubt his creativity will be further enhanced. But he still harbours ambitions, not least of which is to be a record producer, so don't be surprised if this is added to his long list of achievements.

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