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International



CA AT EARLS COURT: STAGE SET FROM THE SOUND MIXING POSITION

- Tosca and The Royal Tournament
- Lighting in the round at Scarborough
- Show Reports from Singapore and BKSTS London
- Sheffield Arena and the World Student Games
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AUGUST 1991



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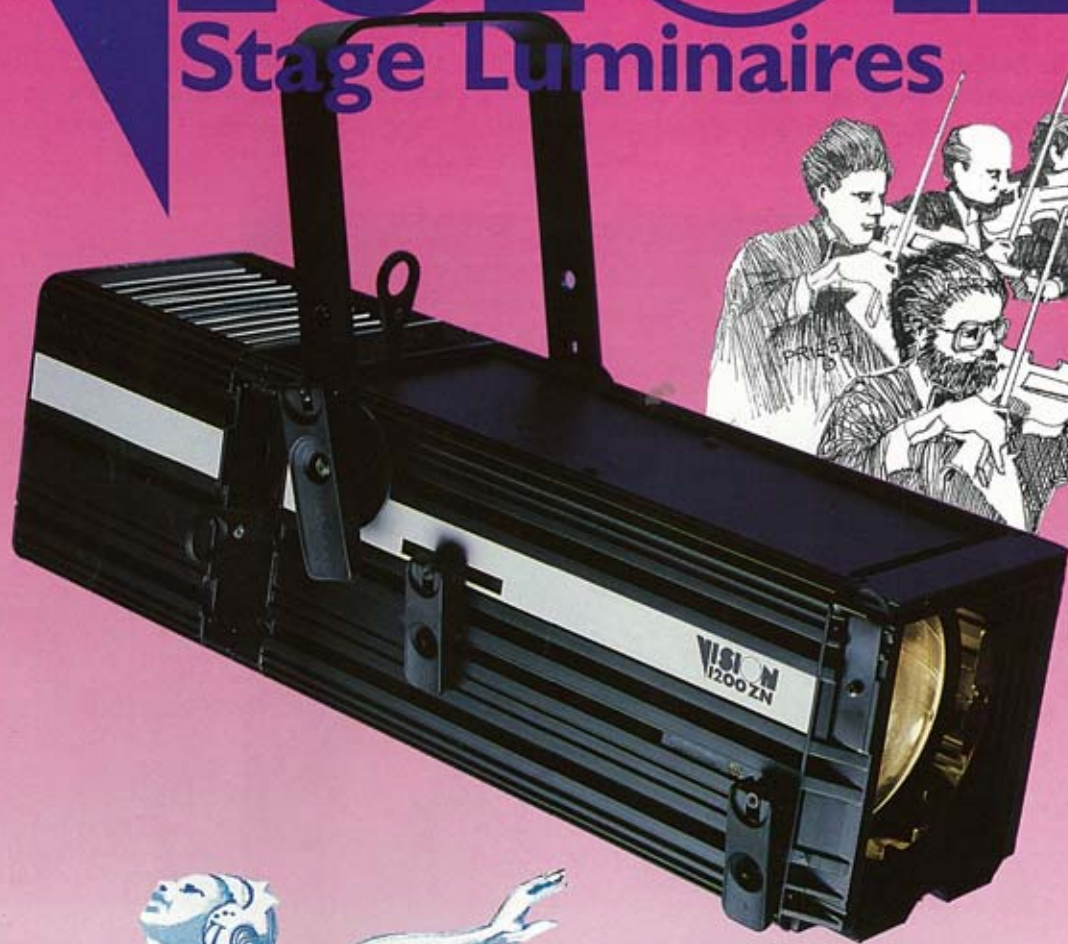
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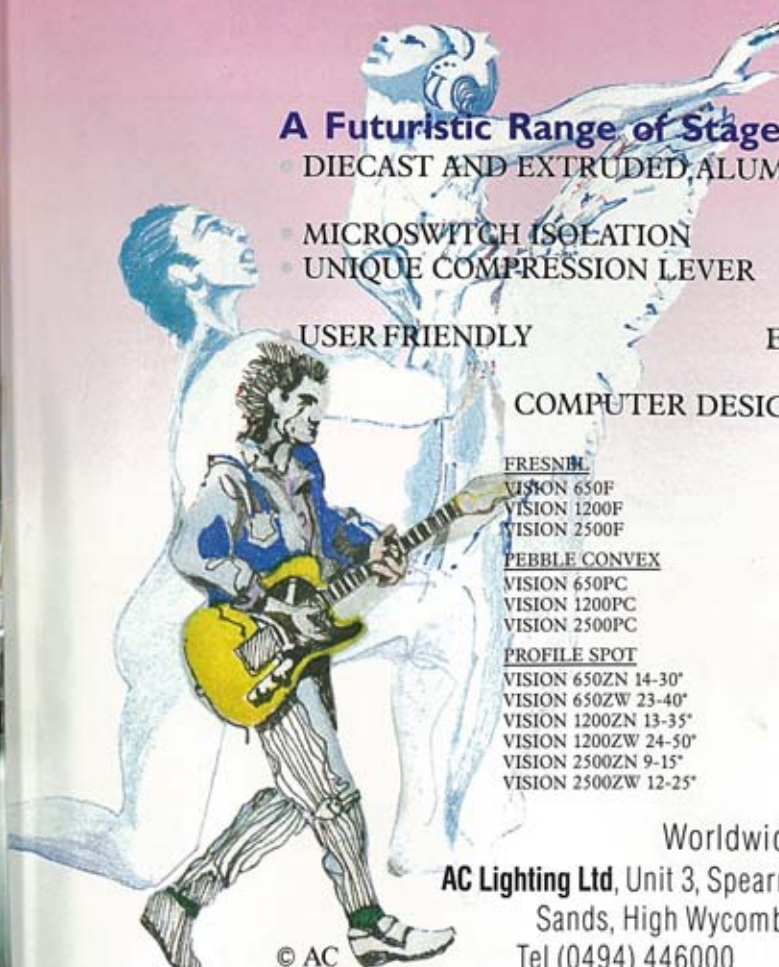
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LIGHTING+SOUND *International*

AUGUST 1991

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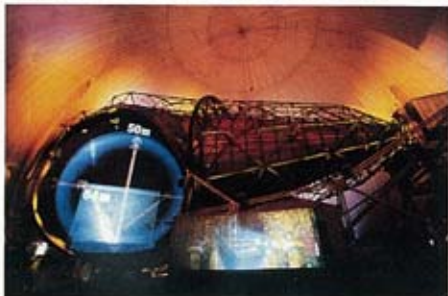
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LIGHTING+SOUND *International News*

Light & Sound Design sold for £7.6 Million

Christian Salveson plc, the Scottish-based distribution, manufacturing and specialist hire company, has acquired the business of Light & Sound Design Ltd of Birmingham and Light & Sound Design Inc of Los Angeles, California.

The consideration will consist of an initial purchase price of £7.591 million and will be payable in loan notes of £1.391 million and the balance in cash. A deferred consideration to a maximum £5.909 million could also become payable if certain future growth objectives are exceeded, stated Christian Salveson.

Light & Sound Design, a private business founded in 1976, is a world leader in the design, manufacturing and hire of sophisticated lighting systems to the entertainment and product promotion industry.

The existing management, including the five shareholders who built up the business, will remain with the company. Gordon Tourlamin, a main board director of Christian Salveson with special responsibility for the company's specialist hire activities will become chairman.

Dr C Master, chief executive of Christian Salveson, stated in a press release: "Our specialist hire activities comprising Aggreko and Salveson Oilfield Technology have grown strongly over the last six years. Aggreko already has a strong world-wide position in supplying power to the entertainment and special events market. This acquisition forms part of our strategy of selectively broadening both the product range and the sectors served on an international basis."

Kevin Hopcroft Steps Down

PLASA chairman since January 1990, Kevin Hopcroft of NJD Electronics has had to step down as chairman and resign from the executive committee of the Association on his doctor's orders. In an emotive letter given to members of the executive at its July meeting, he informed them that he must slow down and avoid as much stress as possible. A recent medical check had revealed a dangerously high cholesterol level.

"I decided that after the AGM for my own health I must resign from the PLASA chairmanship and committee," he stated. "Over the last three-and-a-half years I have given



Rock am Ring — Germany's biggest open air festival. L+SI's major September issue will feature this event.

everything I could to PLASA willingly because I believe in what PLASA is trying to do for our industry. I came to PLASA thinking that the committee only tried to look after itself, and soon discovered that I was wrong and that here was something that I could work hard for and make this cottage industry respected throughout the world. Little did I realise that just two years later I would be running it!"

His letter continued: "I regret this action deeply, but I feel that if I am only allowed to work a few hours per day then I should spend them at NJD. I have grown to like and respect all the people at Eastbourne and on the executive committee and because of this, I decided that it was not fair to cause you this upset just before the AGM."

Vice chairman of the Association, Tony Kingsley of Avitec Electronics, will take the chairman's seat until the committee votes for a new chairman later in the year.

A vote of thanks for Kevin's work as chairman and formerly as the Association's treasurer was proposed by committee member Paul Adams of PA Installations.

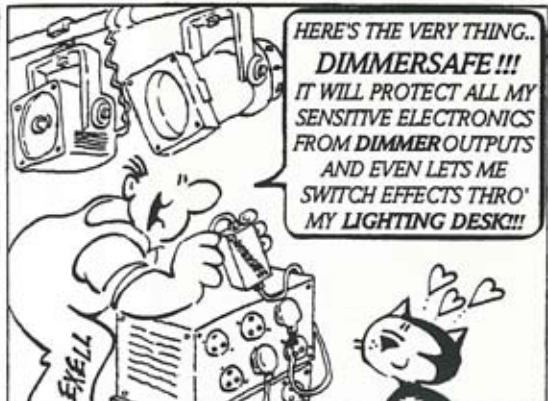
John Offord, PLASA's acting chief executive and editor of L+SI, stated that a large number of new activities and projects had been launched under Kevin Hopcroft's chairmanship



Kevin Hopcroft.

of PLASA and that he would personally miss his bouncing energy and cheerful presence. "Hopefully, when Kevin's health improves he will strongly consider standing for re-election to the executive committee," he said.

Action News



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Vari-Lite win an Emmy

The Academy of Television Arts and Sciences announced in Los Angeles last month that Vari-Lite, Inc of Dallas will receive a 1990-91 Primetime Emmy Award for Outstanding Achievement in Engineering Development.

The Emmy specifically recognises the Vari*Lite Series 200 Automated Lighting System and its key inventors: Jim Bornhorst, John Covington, Brooks Taylor and Tom Walsh. They, along with Vari-Lite chief executive Rusty Brutsche, will be formally acknowledged with Emmy statuettes at the Creative Arts Emmy Awards on August 24, 1991.

"The Emmy still came as a surprise to me," Rusty Brutsche told L+SI. "After ordering up a champagne celebration for the Dallas staff, I phoned back West Coast vice president, David Alley, just to be certain the news of the win wasn't a practical joke."

Brutsche credits the success of the company and the Emmy not only to engineering vice president Jim Bornhorst, senior analog engineer John Covington, systems/software engineer Brooks Taylor and senior digital engineer Tom Walsh, but also to all the members of the international Vari-Lite team, and the plethora of clients who use the systems.

"We have always maintained a synergistic relationship with our clients," continued Brutsche. "We bring to them the most leading edge technology available in order to enhance their productions. And they create the real magic from our service and equipment."

Seminars at PLASA Light and Sound Show 91

The PLASA office reports that bookings are coming in for its popular industry seminars, now in their third year. These are once again being



Pictured above is action from the recent Montreux Jazz Festival. For the technical details see this month's On Tour feature.

staged during the PLASA Light and Sound Show 91, 8-11 September, Olympia 2, London. Housed in the purpose-built seminar and conference area on the third level of Olympia 2, the seminars will cover a wide range of topics and issues presented by many leading industry names.

Delegate fees, which include free entry to the show, are £65 plus VAT for all five sessions; £35 plus VAT for one day and £20 plus VAT for one session. PLASA has also introduced special student rates for under 25s which start at £50 plus VAT for all sessions; £27.50 plus VAT for one day and £15 plus VAT for one session.

A booking form, including complete programme information and a full list of speakers

was included with your July issue of L+SI, but more are available from PLASA's head office. (Contact PLASA, 7 Highlight House, St Leonards Road, Eastbourne, BN21 3UH. Tel (0323) 410335).

The programme (Monday 9, Tuesday 10) includes 'Lasers in Entertainment', 'MIDI for control of Lighting and Effects', 'Virtual Reality De-Mystified', 'Audio-CAD - Tools or Toys', and 'Track Event'. Master Mixing Sessions will be held on the Sunday (8th) in conjunction with DJ magazine.

Eve Ritscher of Plus One Events, who handled the World Student Games in Sheffield (see feature pages 31-36), will be joining the panellists in Monday's seminar on lasers.

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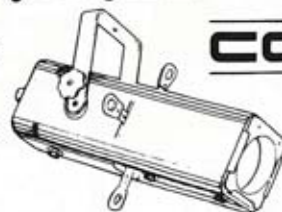


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PEOPLE



John Mason (left) receives the STLD award from Sir Paul Fox CBE.

Soundtracs have announced the appointment of **Tony Allen** as international sales manager. He joins Soundtracs from Studiomaster where he was responsible for export sales and marketing for a number of years. Sales and marketing director **John Carroll** told L+SI that he "was delighted to have someone of Tony's vast experience to help contribute to Soundtracs' planned expansion."

Renkus-Heinz have completed the reorganisation of their research and development department with the appointment of **Frank E Ostrander** as chief engineer. He will be responsible for overseeing all the company's research and development projects on both acoustic and electronic products.

Soundcraft Electronics have appointed **Alison Brett** to the position of sales and marketing director. Alison has been with the company for four years and will be supported in her new role by **Adrian Curtis** who has been promoted to head of sales, with special responsibility for Europe.

European Leisure plc recently announced that **Michael Ward** has resigned as chairman and chief executive. **Geoffrey Nichols** becomes chairman and a new chief executive will be appointed in due course.

Following his speech at the recent STLD summer meeting event, Sir Paul Fox CBE presented the Society's Award for Excellence of Lighting to **John Mason** for his work on the BBC TV production of the 'Chronicles of Narnia'.

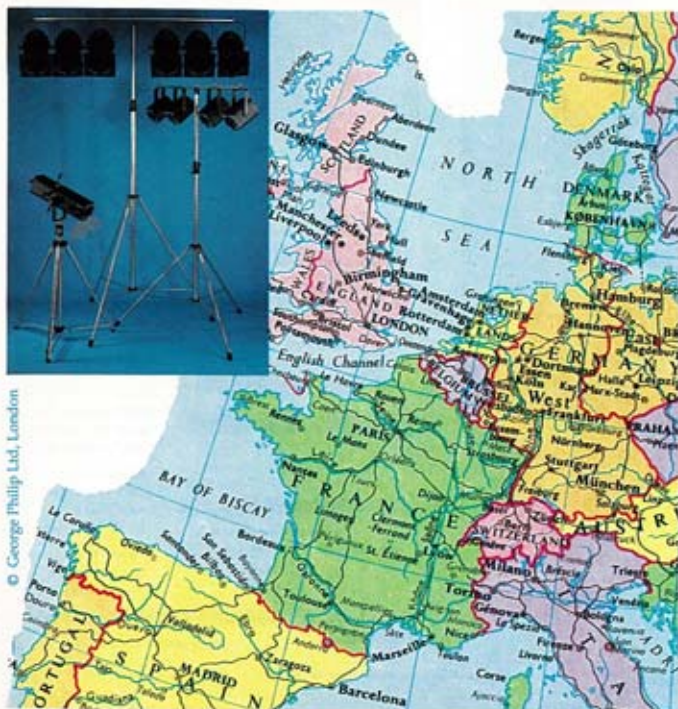
Rik Picton has joined Music Lab as general manager of the hire division. After five years with Julianas Rentals, Rik went on to help form and then manage London Sound Hire for a 10 year period until their recent takeover.



One of the largest sound system set-ups in the West End at the moment features a multitude of **Yamaha** equipment at the London Palladium for 'Joseph'. A 40 channel PM3000 is used for front-of-house sound, with another being used to sub-mix the orchestra. A DMR8 is used to automate the mix on the 18 float microphones, as well as providing MIDI/automated mixes on scene changes where the EQ is too elaborate to do manually. Designers Martin Levan Sound have also devised a method whereby the DMR8 automatically un-mutes the surround sound system on cue for the finale, when an additional 15 power amps kick in and the band plays along with taped material. Amplification is provided by 15 PC4002Ms, the newest in the range of Yamaha power amps, and there is a long list of other Yamaha equipment in the set-up including an 8-channel MV802 mixer for sub-mix of the orchestra keyboard players.

DON'T FORGET THE PLASA SHOW!
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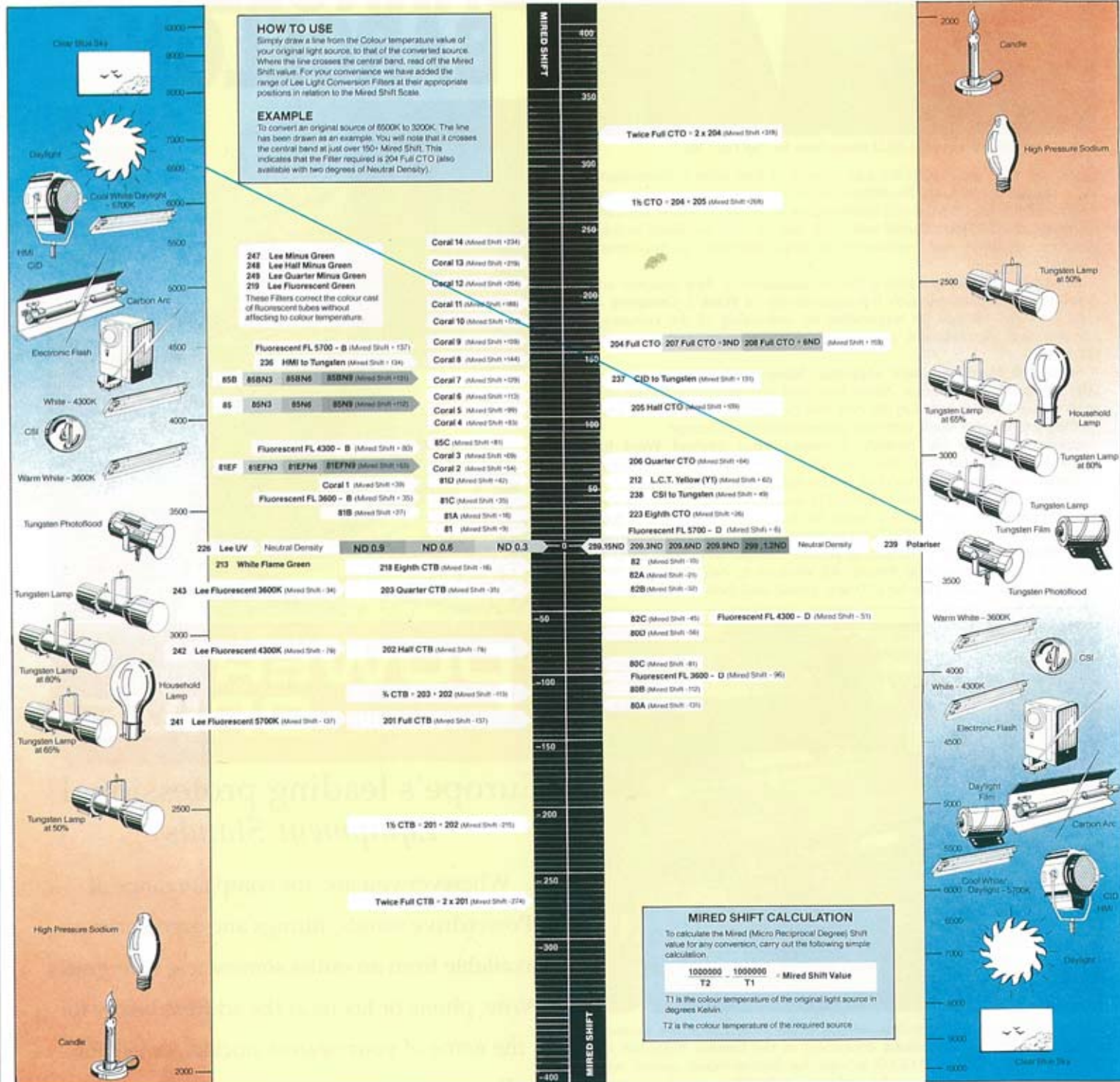
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Lighting News and More

After 16 years in Islington, **Britannia Row Productions and Sales (Pro-Britro)** have moved their entire operation to Osiers Road in Wandsworth. Managing director Brian Grant told L+SI that over the past three years they'd outgrown the space both in Islington and also at their Tottenham warehouse. "The new building will enable us to have everything under one roof and will obviously improve our efficiency," he said.

Joe Tawil of **The Great American Market** and Gordon Pearlman of **Entertainment Technology Inc** have just returned from a successful trip to Tokyo where the final arrangements were made on a joint venture between Entertainment Technology and RDS to manufacture ET's new Intelligent Power System dimmers for the Japanese and Asian markets.

Three major European groups are hoping to win the contract for the stage management of a major \$1.7 billion roadshow to promote Euro Disneyland. It will tour 17 cities in 17 weeks and will be designed by Euro Disney's in-house team. L+SI understands that a British bid has been made by the leading presentation company, **Imagination**.

London-based **M & M Lighting** has announced that it has been appointed by both Selecon of New Zealand and The Smoke Factory of Germany as their exclusive UK dealer. Selecon's 1200 range includes British optics and has a unique dual rotating shutter. Due from the company shortly is a range of low voltage lighting. The Smoke Factory's range of machines is manufactured for use in theatre, television, opera houses and other entertainment venues. Their 'Enterprise' unit gives high volume with very little noise and comes complete with both radio and cable remote as standard and can be operated from any 0-10 volt lighting desk. Pictured on this page is their R2D2 unit.

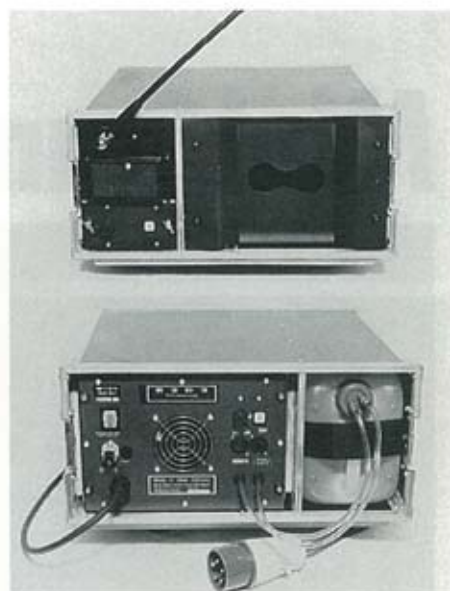
New PLASA members **Optex** are to receive an Outstanding Achievement in Engineering Development Plaque from the US Academy of Television Arts and Sciences for the development of their Optex/Litton Mini-Image Intensifier for ENG cameras. The unit made its name during the Gulf War and has brought about a new era in mobile night imaging. Optex will receive their Emmy plaque in Los Angeles on August 24.

Avolites look set for a successful future following the transfer of ownership of the company earlier in the year. Their range will be complemented by the new QM Diamond, a lighting control desk to be launched at the PLASA Show. Manufacture of the existing range continues, and managing director Richard Salzedo told L+SI that the launch of two major products this year in the QM Diamond and Light-Cad, the PC-based lighting design and file transfer software package, "clearly demonstrates our ongoing commitment to the professional entertainment lighting industry."

Sales director of Avolites Steve Warren explained that they have already contacted many of the major independent lighting directors around the world, and that along with their own research, the new products under development will fulfil the industry's requirements, in particular the top end rock and roll and theatre markets. "Avolites will continue its research to provide the customer with what he wants, not what the other manufacturers think he needs," he said.

A week-end for creative painters is being organised by **Rosco** at their paint frame in London in early October. Aimed primarily at scenic artists working in amateur and little theatres, the workshop will provide an opportunity for participants to learn some of the secrets of professional scenic artists and a set designer.

The Decorative Lighting Association recently announced a name change to **The Lighting Association** 'to better represent its members' expanding market.' The Association is based at Bishop's Castle in Shropshire.



The R2D2 Smoke Machine from the Smoke Factory, Hanover now available in the UK from M&M Lighting. A 9kW unit, the R2D2 is a high output machine with 3 output nozzles. The above picture shows front of machine with radio remote control.

New awards will be presented during the forthcoming **Vision & Audio 91** show (Earls Court 2 September 15-18). 12 awards will be handed out on the occasion of the gala dinner due to be held at the Royal Garden Hotel on September 17. They have been devised to recognise the best use of AV media and the most successful applications in Britain today.

More disappointing news on the recession front: a creditors' meeting for **Starlight Design (Light & Sound) Ltd** will take place on August 1.

A joint venture has been announced whereby **Laserpoint Communications Ltd** and Mitsubishi Electric UK Ltd will pool resources to demonstrate the combined capabilities of the Pixelite viewdwall electronics and the VS41-M projection cube. Both companies stressed that although their systems complement each other well, alternative brands of projection cubes and electronics can be used with each others' products.

As a prestigious ending to its first year of operations, **The Definitive Laser Company** supplied a laser show for the recent G7 Heads of State Summit meeting at Buckingham Palace. The event took place in the main quadrangle where four laser systems (two Argon, two multi-coloured) projected animated sequences relevant to each dignitaries' country.

Vortex Lighting of Crook in County Durham are set to repeat their successful day return trip to the PLASA Light & Sound Show. A luxury coach, complete with video, hot and drinks, etc. will collect passengers from Newcastle, Durham and Darlington and return the same night after the show. The day planned is Sunday September 8 and the trip will cost just £15 (excluding admission). To book your place call Graeme of Vortex on 0388-762614.

Alan Smith has informed L+SI that he has completed arrangements for a buy-out of **M. L. Executives Ltd** from Tasco Communications Ltd so that Tasco can concentrate on its core lighting business. M.L. will continue to be run by Dutch Michaels and operate from the Tasco complex in Woolwich.

Cerebrum Lighting have just supplied a £10,000 Lite Structures Astralite rig to the BBC. The programme - which cannot be named - will be a regular weekly show and the new rig will make its debut appearance on Thursday evening, September 12. Although based on standard Astralite sizes, the BBC were supplied a heavy duty version. The system will be rigged and de-rigged each week and the BBC took this into account when ordering the product. "The system met both the technical demands and the BBC's budget," said Graham.

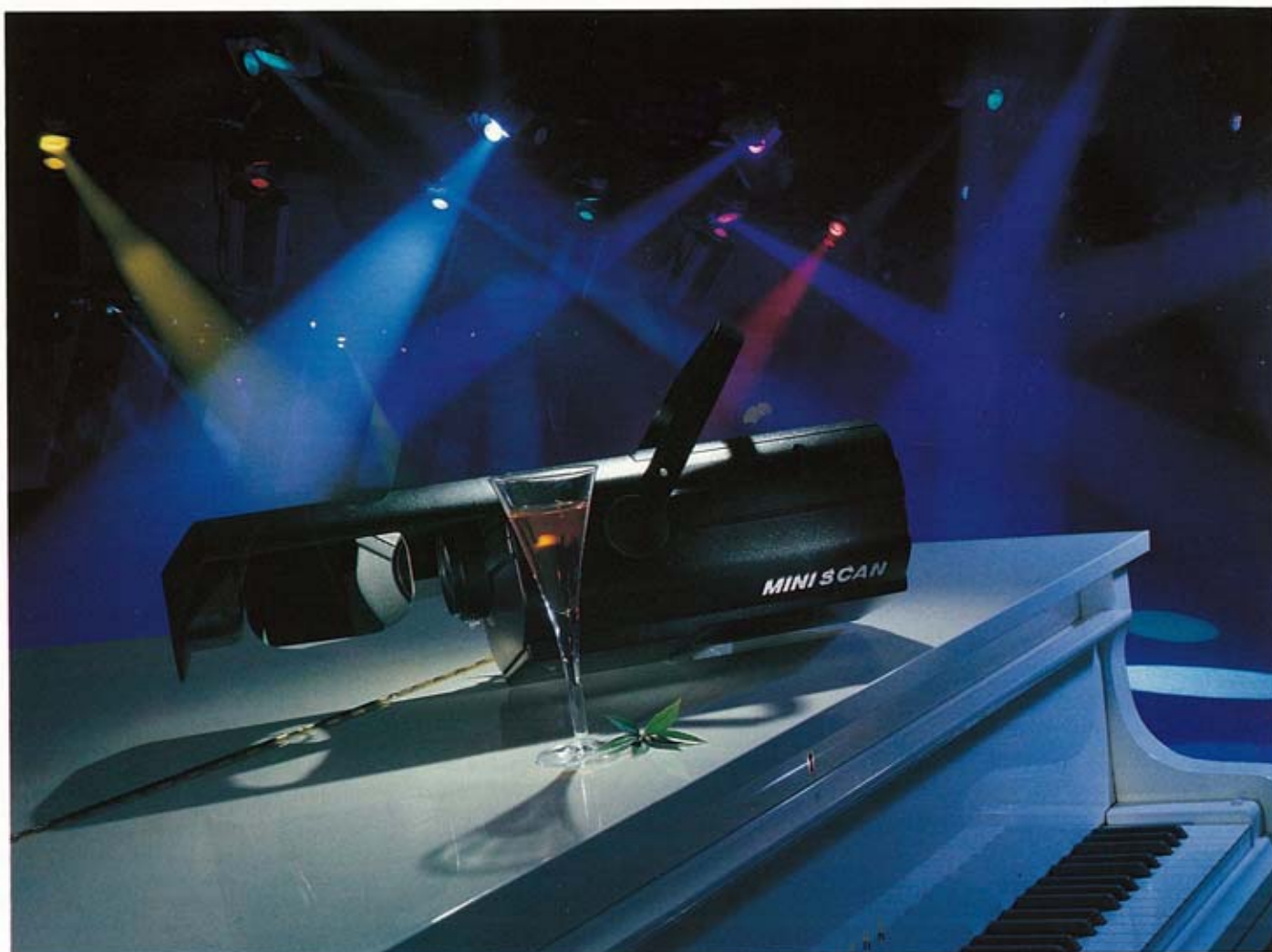
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SOUND BUSINESS

An all expenses paid trip to Japan awaits the winner of the next TOA/S&CS Golden Ear Awards. Judged by a panel of industry figures, the awards are open to anyone working in the sound and communications market and there are three categories. For an entry form for this year's awards, which must be returned by October 31st, contact Kevin Hilton on 071-323 3380.

Marquee Audio has been appointed as dealer of Soundcraft's Europa live sound console. It complements the company's line-up of JBL speakers, HH and C-Audio amplifiers, Yamaha and BSS signal processing, and a host of other equipment for a wide range of applications and budgets.

Meanwhile, **Soundcraft** themselves have just announced the first recipients of a Europa. Ordered by Norwegian theatre sound specialists LydDesign, a 40-input console will find its home at The China Theatre in Stockholm, Sweden. The Europa made its debut at the recent APRS show in London.

Further news from Soundcraft reaching L+S is that PA hire company JHE Audio have just taken delivery of their first Delta monitor console.

Tannoy-Audix has won three major contracts to install its Vector public address system into prestigious Saudi-Arabian venues: the Ministry of Interior, Eastern Province Airport and the Justice Palace. The company's Scottish office simultaneously announced that a Vector system is to be installed at the NEC semi-conductor factory in Livingston.

Studer Revox AG, part of the Swiss Motor-Columbus Group, has launched **Revox UK Limited** to spearhead the sales and marketing of Revox professional and domestic products in the UK. They will be based at Thatcham in Berkshire.

Soundtracs have announced that their pro-



Soundcraft Europa Sound-Reinforcement Console.

ducts will be distributed in Germany through BeyerDynamic GmbH. This followed initial discussions at the Frankfurt Music Fair in March. An agreement was reached in May whereby existing dealers would continue to handle the full range of Soundtracs products in addition to a limited number of newly appointed Megas dealers.

Israel, Switzerland and Japan are all destined to benefit from **Autograph Sound Recording's** specialist approach to theatre sound design. Forthcoming products of Sweeney Todd in Jaffa, Cats in Zurich and Miss Saigon in Tokyo will each feature sound systems designed and specified by Autograph. With the majority of the world's major musicals originating from the UK, the company is playing a key role in their (and the equipment's) export-earning capacity.

Through its UK subsidiary, **AKG** has purchased a 30 per cent stake in AMEK Technology Group plc, the holding company which owns AMEK Systems & Controls Ltd and Total Audio Concepts Ltd. The deal was completed in London on June 28.

Now in its third year, **PASTY 91** - The

Professional Audio Sailing Trophy - takes place at Port Solent from 27-29 September. It promises to be bigger and better than ever this year, with a great week-end's sailing - full instruction provided - and the satisfying outcome of helping to raise £10,000 for charity. There are two different types of boat and events. Telephone Paul Hinkley on 081-743 4680 or Brian Whitaker on 081-953 0091 for the full details.

Lucy in the Park

100,000 fans braved the weather to watch Luciano Pavarotti perform on the Fisher-Park designed pink gazebo stage in Hyde Park this week.

The stage and equipment weighed 200 tons and needed 24 juggernauts to deliver it.

Three 8 x 10m Starvision screens were complemented by a massive sound rig, with the speakers hung from cranes and a complex relay system, to deliver the golden voice throughout the 50 acre site. The sound design was by Richard Lienard of Sound Hire.

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JBL Launches at the IMF

The International Music Fair which took place at Olympia 2 in July saw the launch of several new products from the stand of JBL's UK distributor Harman Audio.

Of principal interest was a range of three speaker systems designed to meet the needs of touring musicians who require a small to medium-sized PA, or general back-line system, and want the kind of quality and dynamic range expected of larger units. These speakers in the Sound Power range have been named 'M' Series.

The M360 is a full-range system has a 15" high power, high efficiency cone driver, an 8"



The M350 two-way full range system.

high efficiency mid-range transducer and a newly developed horn-loaded tweeter. The same cone driver is used in the M350, but in this two-way cabinet, the highs are handled by a 1" titanium diaphragm compression driver mounted on a bi-radial horn.

The baby of the range is the M330, a full-range unit with a 12" cone driver and the same bi-radial configuration as the 350. All three systems have a passive crossover network within the enclosure.

With these new products, Harman unveiled a digital sound processor offering over 50 effects, and up to six simultaneously, a complementary digital realtime MIDI foot controller called X-15 Ultrafoot, and a stereo digital effects system for guitarists which provides 70 effects, 20 simultaneously, a programmable tube pre-amp, and a programmable solid state preamp. The SGX Nightbass provides similar facilities to bass players. All are from Applied Research technology.

The Great Wall of Seville

In the week that Electrosonic, specialists in control equipment for light, sound and image announced an order for the world's largest videowall, they also revealed a forward order book valued in excess of £8 million. Obviously, this will be good news for the directors and shareholders of the company, which has recently moved to a new purpose-built 5,500 square metre building near Dartford. It is also good news for the industry as a whole in these recessive times.

The videowall order, which is to go to the Telecommunications Pavilion at The Seville Expo 92, is for a 936 (yes, nine hundred and thirty six!), 26 x 36 monitor wall, which will measure 17 by 11 metres.

The Telecommunications Pavilion is to be built by POET SA, an association shared by the Telecommunications Operations of Europe

(including Telefonica of Spain and British Telecom). The giant video display will be built in its entirety by Electrosonic, with all monitors and image processing equipment being made by their Electrocue subsidiary in Maidstone, and engineering and final assembly taking place at their Hawley Mill Headquarters. Despite the new building, extra space has been taken nearby to accommodate the project. Electrosonic Iberica will be assisting at the installation and show programming stage.

Commenting on these developments, Electrosonic's sales director, David Kerr, told L+SI: "For over 27 years Electrosonic's success has always been the result of a willingness to adapt to changes in market requirements. These recent developments are very exciting, and a positive acknowledgement of Electrosonic's unrivalled systems engineering capability; and is further proof of our ability to respond quickly to the changing needs of our fast-moving market areas. It also firmly establishes Electrosonic in a dominant position in the international videowall market."

Electrosonic recently joined forces with Celco and their first new product since the partnership – a compact lighting board called the Navigator – is to be launched at PLASA and will be profiled in L+SI next month.

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SINGAPORE: SOUND & LIGHT ASIA 91



Mike Gerrish of Citronic (right) with Laurence Chan of Laser Theatre Lighting of Hong Kong.



Avitec's Paul Dodd is just in profile (left) as he gets the light show into operation on the FAL stand.

Held at the World Trade Centre in Singapore from 10-12th of July, this show was a highly effective 'add-on' to the already established Pro-Audio Asia event, previously held in Hong Kong. It was a very successful combined event, with a reported total of over 5,500 visitors from 37 different countries.

Arthur Spurdle, marketing director for the organisers, Business and Industrial Trade Fairs

Ltd of Hong Kong, told L+S: "We were very pleased with the response to the show. It's good to have favourable comments from exhibitors, and the overseas visitor attendance was most encouraging. It proved that our efforts to establish a truly regional event had paid off."

The only complaint we heard about was that of noise levels. Evidently, the sound accompanying the traditional light shows running

on the APIAD/ICE-supported Italian group of stands in particular was something the organisers hadn't bargained for when they planned the layouts - this is not a dig at the Italian companies themselves, who were justifiably promoting their goods in their usual way. Certainly it's a problem that will have to be dealt with when the show takes place next year, again in Singapore, but in a new custom-



A full range of product from Selecon of New Zealand.



The Eurolight stand with Graham Bowen in background (left).



The Celestion line-up.



Martin Audio were showing their new LE700 wedge monitors.



Expotus from the UK were showing Turbosound loudspeakers and Allen & Heath mixers.



An impressive sequence for Laserpoint on the stand of Entertronic of Singapore.

ETR

SWISS

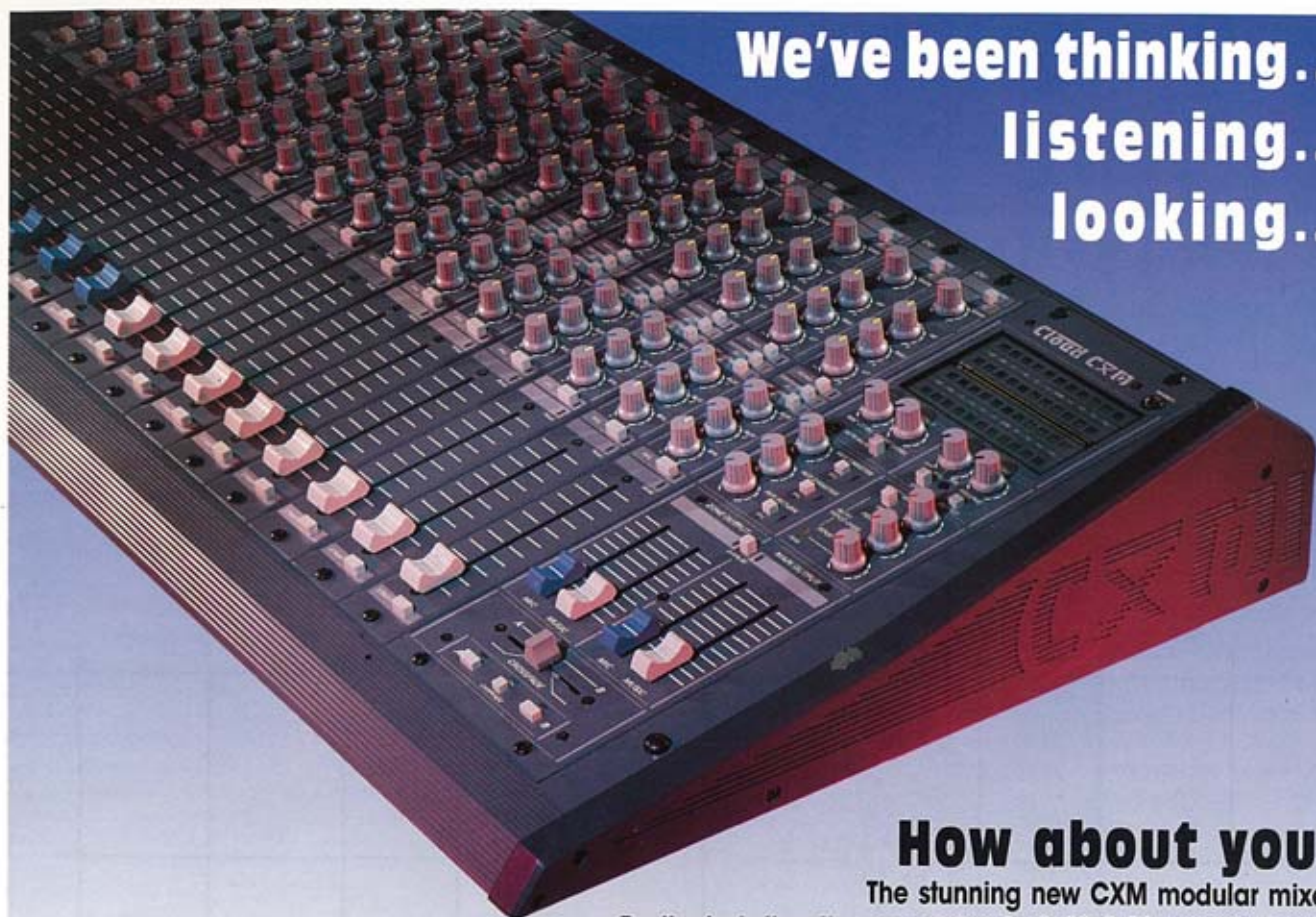
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designed building.

A large contingent of British companies took part and it seems to have raised the level of morale. Mike Gerrish of Citronic told L+SI how refreshing it was to be doing business in a country that wasn't suffering from a recession. "Taking sales for cash on the stand was a fantastic morale booster and excellent therapy for 'recession depression'. I wish I'd brought the entire sales team," he said.

Citronic has also gained a number of very good contacts to provide distribution in areas currently uncovered. The quality of visitor was also mentioned by Dick Carrier of Le Maitre. "A lighting show was well overdue in Asia," he said, "and the quality of people attending was excellent. We dragged in people from the Pro Audio side and vice versa. The support received from the DTI was excellent, and I had to spend two weeks in Asia just following up. This show is certainly one to add to the regular circuit."

Graham Bowen of the Eurolight Group was critical of noise levels, but highly commended the work of the DTI and British High Commissioner, and was more than happy with the number of wholesalers and distributors who attended. Their best enquiries were for Lytemode and Eurolight control systems.

It wasn't a show for new product launches, although a few were around; it was more a case of taking product to the people, forging new contacts, and letting them see the goods they'd been reading about over the past year or so, in many cases actually in demonstration.

A programme of six seminars were run during the event with Peter Blackmore, Patricia Mackay, Larry Elliott, Robert Thurmond and Frederick J Ampel doing the talking.

**MORE PICTURES FROM
SINGAPORE ON PAGE 40**



Cerebrum's Rod Bartholomeusz with Laserpoint's Sussi Christiansen.



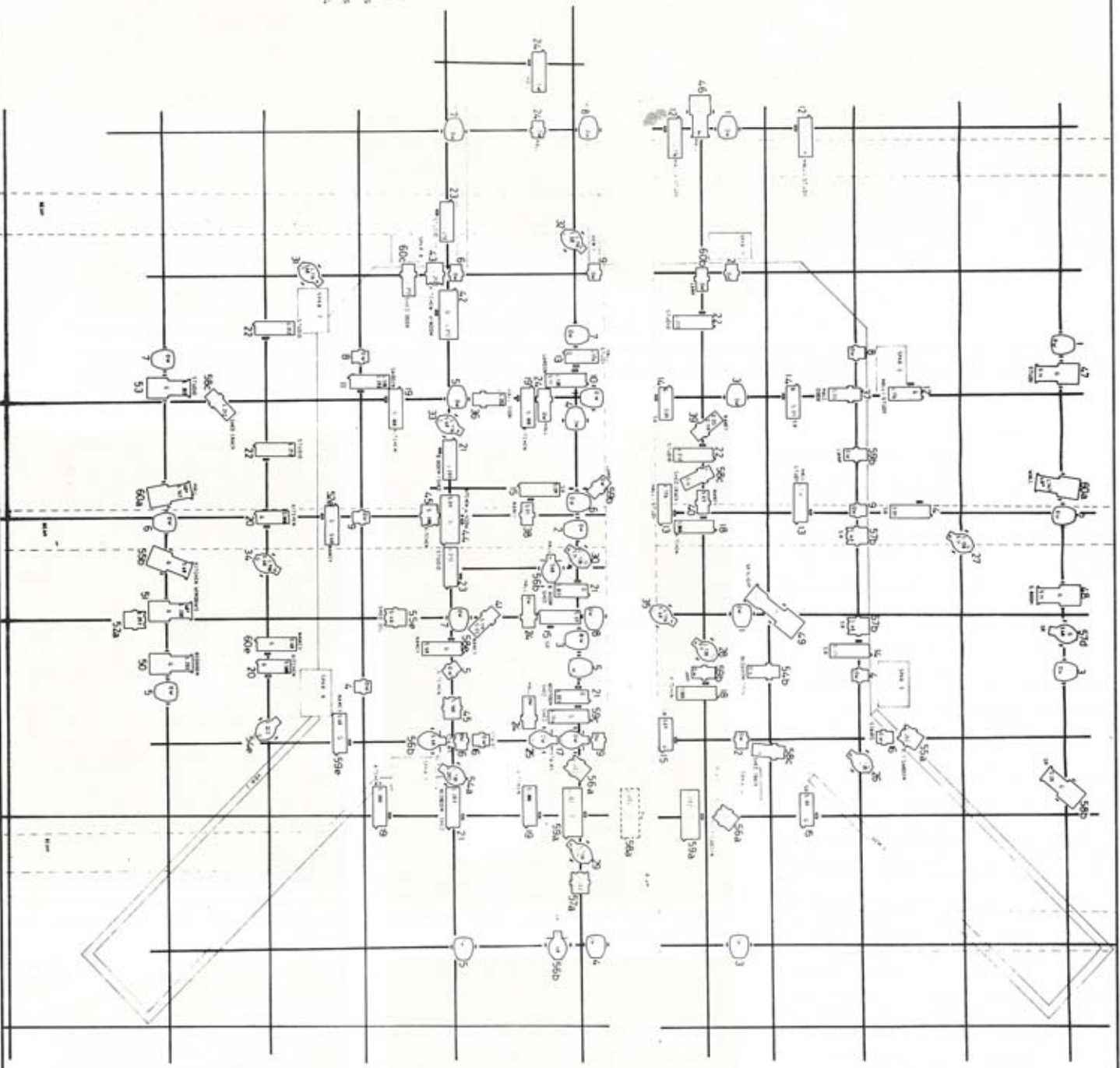
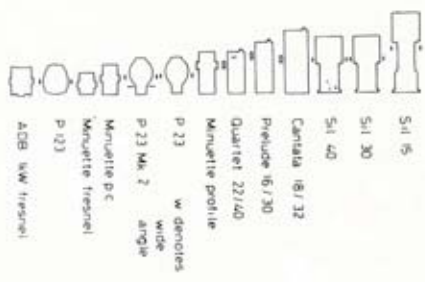
Italian big guns: Pasquale Quadri and Pio Nahum of Clay Paky (left and right) with Coemar's Bruno Dedoro.



The stand of Australian lighting control manufacturers Jands.



More from Italy: Teatro's red brigade.



STEPHEN JOSEPH THEATRE in the round
 THE VILLAGE FETE by PETER TINNSWOOD
 Director Alan Ayckbourn
 Designer Juliet Nichols
 Lighting Jackie Stames
 June 1991
 Rig plan scale 1/24

LIGHTING IN THE ROUND

Jackie Staines describes the lighting for 'The Village Fete' at the Stephen Joseph Theatre in the Round, Scarborough

When people who are unaccustomed to theatre-in-the-round make their first visit to the Stephen Joseph Theatre in Scarborough, their immediate reaction is almost always a comment on the size of the venue. Once they have seen a play here, audience members are often awe-struck at the intimacy of the theatre, having been close enough to the action to reach out and touch the actors. Stephen Joseph himself stated that the optimum size of stage for theatre-in-the-round is 18' x 24'. The stage here is fairly close to that at 20' x 22', and with a ceiling height of around 15' the auditorium can seem very small to tall people on the back row!

The 'method' of lighting an acting area of this nature and dimension is well-documented in the pages of Bentham and Pilbrow: translating the 45 degree rule into the 45, 135, 225 and 315 degree rule, a minimum of four lanterns per area is required. The 'general' rig which follows that pattern here is a nine-area grid which uses 36 lanterns. However, it is sometimes necessary to fill in the voms¹ and corners of the stage by using up to ten more lanterns (Fig 1).

Achieving this has used up half the lantern stock, most of the dimmers, and resulted in very little: so to light a show requiring many specials and circuits, the basic rules have to be shaved, cheated and broken. The general rig is a good guide on how to light this space, but it is by no means a rigid and immovable ruling and can be adapted quite considerably to suit the requirements of each show. However, when playing in weekly repertoire with a mid-week all-night turn round, it's comforting to know that at least the general rig is in more or less the right place!

In the case of 'The Village Fete', I didn't need



Jackie Staines with Alan Ayckbourn.

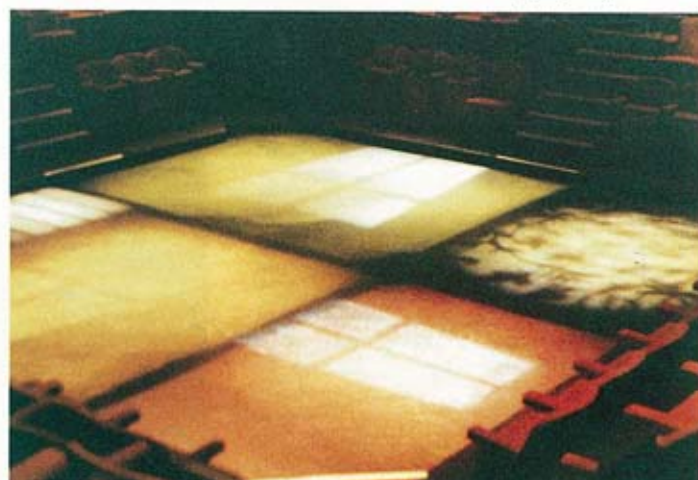
the extra ten lanterns to fill the corners, and I paired the general rig down to nine circuits (18 is more usual). This left me with 51 circuits for the 106 specials on the plan.

I've yet to decide whether it's a lighting designer's dream or nightmare to be given the freedom of working without a set, but given the challenge of 'creating a set with light' I don't think that the idea is unique to theatre-in-the-round. Indeed, look at the work of Svoboda,

Pilbrow and Ornbo, where set, light and projection work in harmony with each other. However, creating the set with light on the floor probably is. My brief for 'The Village Fete' consisted of three rough-sketched house groundplans and the instruction 'I want to do this all with gobos - the show will rely on the light'. It was a classic example of not only being allowed, but being positively encouraged, to break the normal rules of stage lighting. But with



'Upstairs'.



'Downstairs'.



'French Windows', from Scene 1.



Five Patt. 23's.

careful examination of the plan, it can be seen that the rules have not really been broken, more expanded upon. The general rig is still there: the actors are still lit from four sides. It is just a question of balancing the 'generals' against the 'specials'. If there were more circuits available, and less essential pairing, the balance would have been somewhat more finely tuned.

The approach to the idea of groundplans of light was very straightforward: create rectangular blocks of light to represent each of the rooms, and then bash windows and doors in on the top of these shapes as required.

Definition of the 'walls' of the rooms was of paramount importance to the design concept, so the rig consists of profiles coming steeply from all four sides of each room area, without actually being vertical, thus preventing actor's heads passing in and out of beams of light.

Dealing with, or at least being aware of, problems caused by flare, is a learned thing in theatre-in-the-round. A simple example is to use a single profile rigged somewhere towards the back of the auditorium shuttered off to a square, or use a window gobo sharply focused. Leave the lamp at the same intensity, say 70%, and walk all the way around the auditorium both front and back. It can be quite a surprise to see a sharp window one moment and an indiscernible blob of light the next. It is a clear demonstration of the importance of wandering around the auditorium during plotting and technical rehearsals — and also a bit of a problem when you are the board operator as well! This demonstration accounts for the formula of steep angles from four sides to create the rooms even though lighting the actor was not a concern at this point. It kept flare to a minimum and gave clarity to the shutters and gobos.

At this point I started to run into difficulties with beam angles. The average profile from a 13' grid close to vertical tends not to produce a terribly large pool of light on the floor, particularly after it's been shuttered off to a square. It became apparent that several of the 'walls' would require two lanterns rather than one and that I would have to hire equipment to add to the 45 profiles (16 without shutters) in the Stephen Joseph stock. I wished to specify wide angle profiles from the hire company, hoping to use them at less than their widest setting to avoid visible curvature of the shutters as much as possible — my early shutterless Pattern 23s could then be employed to do less specific gobo washes over the whole stage area. When converted to wide angle, five of them will successfully cover the stage in five individual areas. As there were two such gobo washes on opposite diagonals and in different colours it was the perfect job for the 23s, but it permanently tied up another ten dimmers. This, in turn, made necessary the pairing of as many of the 'wall lights' as possible. So, despite the modern lantern salesman's pitch of: "With a 650W lamp (our) sub kiloWatt lanterns are as bright as (our) competitors' 1ks." I had to specify T.18s throughout the sub-k hire stock.

More equipment was still needed for specific specials. Moving away from the four lantern rule, I used solo spots for soliloquies, for example, and in the case of the garden shed scenes, three profiles were required just to suggest cracks of light filtering through the woodwork of the shed. Several windows needed to be duplicated to differentiate between night, day and twilight scenes, and eventually the design utilised 45 hired profiles.

Unfortunately, having opened two lunchtime shows in the preceding week which had gone wildly over budget (I managed to blow £1,200 on the hire of 48 ways of +10v demultiplex to allow my Gemini to drive the studio Pulsar racks, plus six profiles, six PCs, six fresnels and four UV tubes for 16 weeks), by the time I had seen rehearsals, drawn the plan and negotiated the LX budget, there were only 48 hours between ordering the hire rig and actually needing it. It

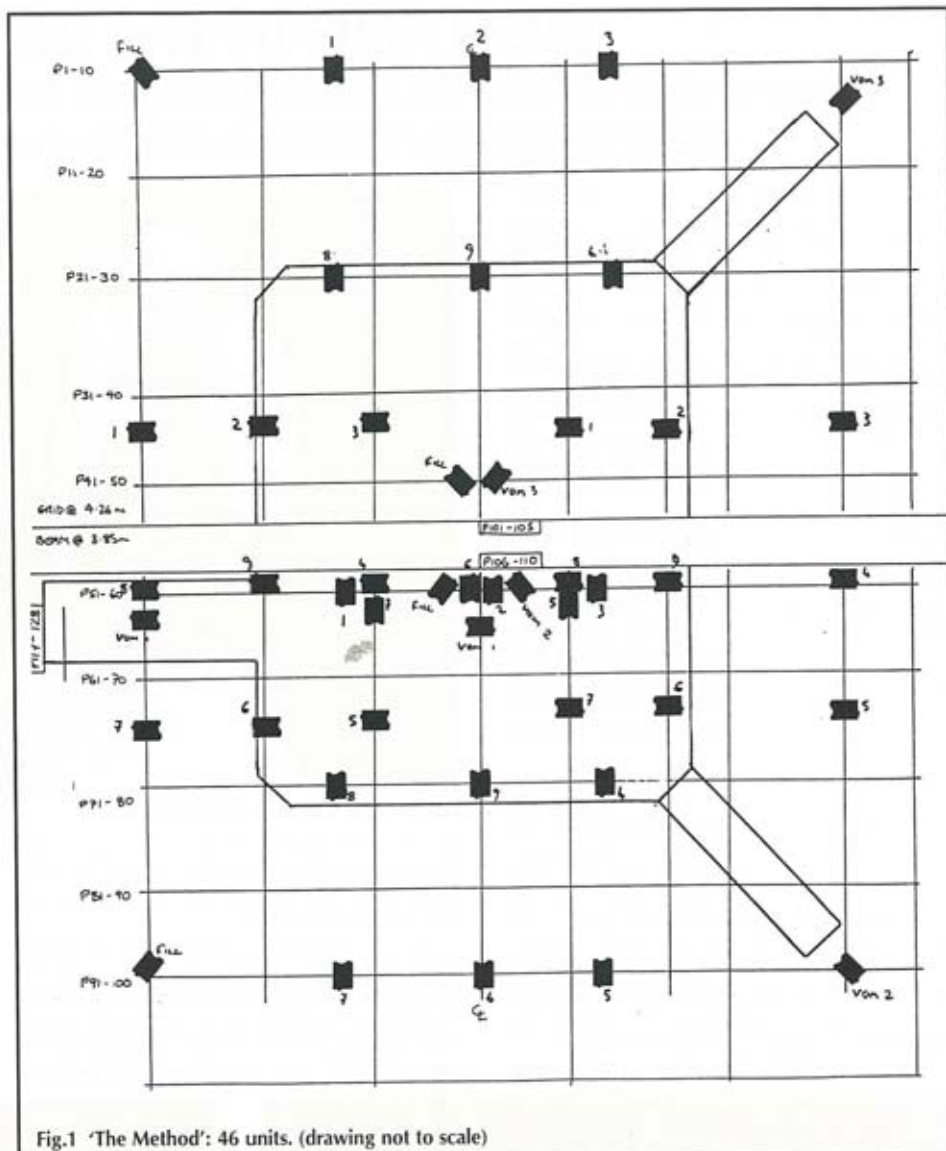


Fig.1 'The Method': 46 units. (drawing not to scale)



A scene from *The Village Fete*: Crispin Letts as Winston Hayballs and Elizabeth Rider as Nancy in the sitting room.

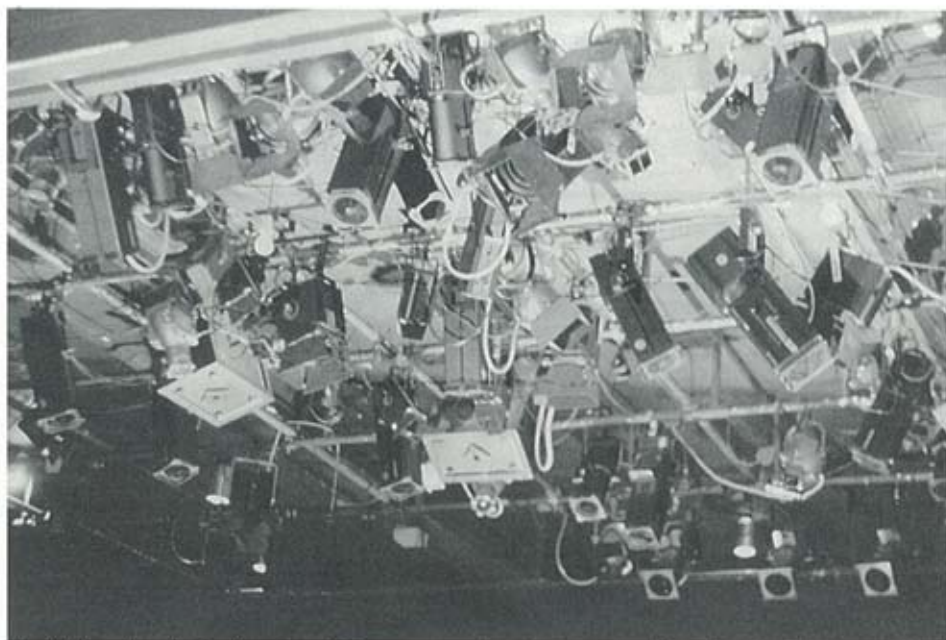
turned out that none of the hire companies within our price range could supply me with 45 wide-angle profiles at such short notice. However, Futurist Light & Sound included 10 brand new Quartets from their sales stock in the hire. The complete 'Village Fete' rig ended up as:

1 x Sil 15, 7 x Sil 30, 3 x Sil 40, 5 x Cantata 18/32, 30 x Prelude 16/30, 10 x Quartet 22/40, 12 x Minuette zoom profile, 18 x Pattern 23 (12 converted to wide angle), 6 x Minuette PC, 16 x Minuette fresnel, 24 x Pattern 123, 10 x ADB 1kW fresnel.

This came down to 142 lanterns into 122 patches into 60 x 2.5kW dimmers controlled by a Strand Gemini 2+, 14 hours of rigging and focusing (it's slow with ladder access only), 10 hours of plotting 156 LX and 107 sound cues. Colour filters used were Lee or Supergel as marked on the plan, although gobo reference numbers have not been used because, with the exception of the French windows in scene one, and the upstairs skylight, they were all home made.

The technical rehearsal went remarkably smoothly considering the number of cues and the tightness of the schedule. Rigging started at 2pm Sunday and the technical at 7pm Monday. Unfortunately, however, on Tuesday night, the floor was varnished.

Drawing a parallel between a mirror and a black floor coated with gloss varnish, is not an unfair comparison. Having already discussed the problem of flare from the floor, you can imagine my feelings when on Wednesday morning, still aching from the 14 hours of ladder work, I saw the varnish, and found that every single lighting state became simply a blur on the floor. I think it's a rare occasion when a director apologises to the cast for the affect that the floor is having on the lighting! Suffice to say that both production and design staff spent most of the day investigating matt varnishes, and half the night with a large tin of Translac Professional Matt.



The lighting rig at the Stephen Joseph Theatre: approximately a quarter of the grid is shown here.

Despite that, 'The Village Fete' has been a fascinating project allowing me to make some bold statements with light. It was also an interesting focusing exercise. It has been very rewarding to hear people commenting so favourably on the lighting design for the show, although at first I was slightly perturbed by this, having been brought up to believe that if lighting was really good, it wouldn't be noticeable. However, if the lighting actually enhances the play rather than detracts from it, perhaps being noticeable isn't such a bad thing.

This sentiment was summed up in Robin Thornber's Guardian review: 'Alan Ayckbourn's production has a suitably fine, light touch. Juliet Nichol's basic set of grey blocks, precision-lit by

Jackie Staines, puts all the emphasis where it belongs, on the carefully spun web of words.'

THE VILLAGE FETE by Peter Tinniswood

Directed by Alan Ayckbourn

Designed by Juliet Nichols

Lighting Design by Jackie Staines

Musical Direction by John Pattison

Production Photographs by Adrian Gatie

In repertoire with Alan Ayckbourn's *Wildest Dreams* until 6th July at the Stephen Joseph Theatre in the Round, Scarborough.

¹ abbreviation of vomitorium, a term used in theatre-in-the-round for the actor's entrance area.

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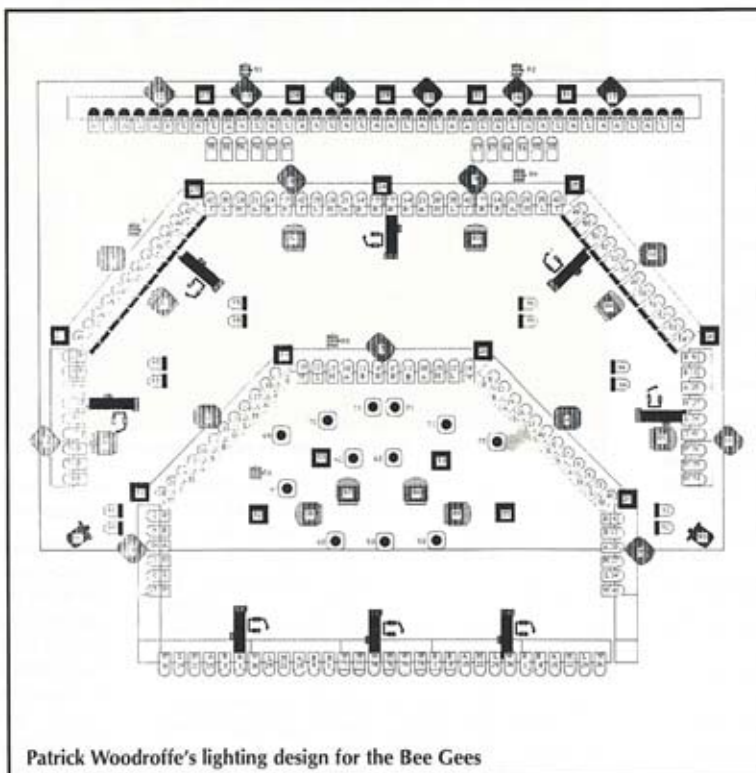
ON TOUR

Catriona Forcer

What better way to start a holiday in Spain than to indulge in a little night fever with The Bee Gees. A tour of Barcelona's ring road, a fine feast by the waterfront (particularly for the mosquitoes), and an illegal driving display were provided by Dave Hill and his Vari*Lite tech Telson James. A very entertaining time was had by all — oh, and the concert was pretty good too! Quite a change for Patrick Woodroffe to design for such a middle-of-the-road act after the monster shows of The Rolling Stones and AC/DC.

Also included this month are a few shots of INXS performing at the 'Summer XS' concert held at Wembley Stadium. The title 'Summer XS' might be apt for the excess part, but certainly there is a case of 'trade description' for the other. The concert was a sell-out, with Jellyfish, Roachford, Jesus Jones, Deborah Harry and Hothouse Flowers on the bill. The rig used was an expanded version of that designed by Roy Bennett for the recent INXS 'X' tour which finished shortly afterwards. The tour was expected to run quite a bit longer but the band were keen to get back in the studio, and as a result the crew were left a bit in the lurch.

John Featherstone took over the control of the show from Roy Bennett shortly after Christmas and he described the tour as having been 'smooth'. For the 'Summer XS' show John had three situations going on at the same time which were almost mutually exclusive in their needs. Obviously the system had to be bigger because it was a larger show and, along with this, he had to take into account that the show was being videoed as well as filmed. Both mediums needed different methods of lighting in order to be successful, and John also had to bear in mind the 72,000 strong audience at Wembley. He increased the followspots from ten to 18 and added 72 8-lites with DWE bulbs for the audience lighting. Also added were two scrimms over the PA wings with a cityscape painted on them. The idea was for a combination of artwork from Roy, and ideas from John in terms of colour, to make it



Patrick Woodroffe's lighting design for the Bee Gees

	VL MK4 (18)
	VL MK2 (17)
	VariLite repeater
	5K FRESNEL (10)
	PAR 64, No 2 (154)
	PAR 64, No 1 (24)
	PAR 64, No 2 (24) + Colour changer
	Par 64 aircraft light
	PAR 64, No 1 (12) s/nose + c/changer
	Omni (12)
	FX PROJECTOR (2)
	FOLLOW SPOT (8)

effective system, but it had to be kept simple and relatively cheap to take on the road. Consequently the rig isn't hung from numerous points and is easy to fly. The most prominent features of its horseshoe-shape are the aluminium fascias — although at the studio stage it hadn't been decided to have slots cut out of them and lights behind. Once the job was secured, two weeks were spent in 4:1 with a near full mock-up of the system, although the moving lights couldn't be reproduced, and neither could the fluorescent tubes or the StrobeFlowers.

The show was run through the Vari*Lite Artisan and programmed by Dave Hill (he describes himself as being employed 99% full time by Patrick). "The advantage of the studio isn't just the programming of the lights," explained Dave. "It's working out how things fit and how things work. A perfect example of this are the fascias at the front of the truss which were originally 4ft deep. When we put up the scale version in the studio, we discovered that the followspots couldn't get over the top of them. If we had not discovered that until full scale rehearsals, it would have

match. The scrimms were ringed by several Vari*Lites. However, the pictures and the equipment list tell the story, and they're on the facing page.

Bee Gees

Palau d'Esportes,
Sant Jordi, Barcelona

Lighting Designer:

Patrick Woodroffe

Lighting Director:

Dave Hill

The Bee Gees are back with a new album 'High Civilisation', and it veers away from their disco reputation towards a more rock-orientated sound, quite off beat and different. In looking for a set and lighting scheme to complement their new album, the band turned to Patrick Woodroffe for ideas. As is usual these days, Patrick used his 4:1 studio to demonstrate his initial ideas which were basically only the rough layout of the trussing. It was important to design an



The Bee Gees on stage at the NEC Birmingham, one of the stops on their 'Highly Civilised' tour.



been a major expense to have them all re-made at 3½ feet and so we had them dropped six inches. We also had the advantage of bringing the crew down to look at the system, which is always much easier than showing someone a piece of paper with your ideas on it."

As a result of using the 4:1 studio, the full scale technical rehearsals at Elstree went very smoothly, with the entire system up and running in one day. This left Dave two clear days for programming before everything was shipped to Keil for production rehearsals with the band.

"Obviously the band add a huge new element which can often change your ideas," stated Dave. "You listen to the songs on tape for two weeks but when you add the human element a song can feel completely different."

He decided to add a front truss to the horseshoe-shaped trusses so that all eight followspots are contained on the lighting system. Lights, supplied by Samuelsons, include 200 Parcans, 42 ACLs, eight 400W HTI followspots, six 5k fresnels on trusses and 18 Vari*Lite 4s. Also in the design are six 2k Strobeblowers which were added for just one effect in the song 'High Civilisation'. They are only run for the very beginning of the number and Dave admitted that they had them in the design before they knew what they were going to use them for. He believes that they are a fantastic effect and his ambition is to do a show using 200 of them! Together with the crew, he has been particularly pleased with the Rainbow scrollers on the tour.

"They've been very good and no trouble at all," enthused Dave.

Summer XS



Equipment List

200 × Par 64s; 18 × 5Ks; 20 × LSD Cyc units; 12 × 8-lights; 12 × Terrastros; 3 × 2.5K HMI heads; 3 × LSD moving Xenons (Quote JF: "Like Vari*Lite on steroids"); 2 × 72-way Avo racks; 1 × Celco Gold; 1 × Celco series 2 30-way; 14 × 2K Xenon Supertrouper; 4 × Lycian short throws; 38 × 8' truss sections; 10 × 4' truss sections; 41 × VL2bs spot luminaires; 16 × VL4s wash luminaires

Audience Lighting

72 × 8-lights; 1 × 72-way Avo rack; 1 × 36-way Avo rack; 1 × Celco series 2 60-way; 26 × VL2bs spot luminaires; 50 × VL4s wash luminaires



The following page is devoted to lists of equipment and personnel who have recently been, or who are currently, on tour. If your equipment is out on the road at present, why not send us the details for inclusion in forthcoming issues of L+SI.

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EAW On The Road

Midland Musical Services, the Leicester-based PA Hire Company have recently taken on board a complete EAW system (eight KF850 and eight SB850). Within a week of delivery the system set off on tour with the Theatre of Hate (Spear of Destiny).

Mark Nicholson, MMS's owner has also integrated the LMC Universal EAW patch panel into his drive racks, to further simplify the sub-hire of the system within the VA users network. The system's growing popularity has necessitated the setting up of the European arm of the VA Users Network, which has been designed to assist all EAW users and ensure compatibility between systems.

Yes get it together

After exchanging enough paperwork between them to keep two teams of lawyers busy for most of last year, Yes are touring again, but this time armed to the teeth with Celestion SR systems. Keyboard whiz, Rick Wakeman is using a pair of SR1 500W enclosures, plus a pair of the 1000W SR2 units. Backed up by a Celestion SRC1 controller, Wakeman is able to monitor a staggering 36 keyboards with his set-up. Yes drummer, Bill Bruford, who utilises a pair of the SR1s has also added two of the Celestion SR2 sub-bass bins to his onstage monitoring system.

Vanco teams up with Robert Palmer

Vanco Lighting Services of New York and Florida have announced the start of the North American leg of the Robert Palmer 1991 World Tour.

Vanco is supplying all stage lighting, colour changers and rigging for the tour, which includes an impressive line-up of Wybron Scrollers and Colorams. Vari-Lite Inc of Dallas are supplying all the automated lighting, with the entire system controlled by the Vari-Lite Artisan console.

The tour was prepared in Vanco's Orlando facility and sent to Lake Tahoe for the start. It will continue through the US and Canada and conclude in Vienna, Va. at Wolftrap on September 3rd of this year.

Sporting Bose

Bose provided the largest outdoor sound system ever used in Ireland for the biggest single sporting event held there recently. A huge stage erected for the event carried a Bose loudspeaker system. 20,000W of power were provided courtesy of 16 302 Acoustimass Bass bins and 26 802 loudspeakers, with a further 10,000W used as monitors and a secondary distribution sound system mounted on street poles using 802 and 402 loudspeakers in a 100 volt line application. Bose 1800 amplifiers powered the equipment.



Montreux Jazzes It Up

The Montreux Jazz Festival notched up its 25th anniversary this year. Taking place from the 2nd to the 21st July, the headlining acts included Quincy Jones, B B King, Sting, Moody Blues, James Brown, and Elvis Costello.

Pictured above, from left to right, are Bruce Ramus, Vari-Lite operator, Patrick Woodroffe, lighting designer, Power Light's Felix Riva, Steve Nolan, the desk operator and Sony's S. Sakai.

Lighting Equipment

- 12 X Vari-Lite 2B
- 12 X Vari-Lite 4
- 8 X DeSisti 5kW fresnels with colour scrollers
- 6 X Thomas 8-Lite blinders with colour scrollers
- 98 X Thomas Par 64 1kW
- 36 X Thomas Par 64 250W
- 10 X Thomas Par 64 1kW floorlamps with colour scrollers

- 12 X Thomas Par 64 1kW in truss with colour scrollers
- 4 X Thomas 6 cell cyc
- 4 X Phoebus Ultra Arc HTI 400 followspots
- 6 X Berkey 800W Video beams
- 2 X Vari-Lite Artisan control board
- 1 X Celco Major 60
- 1 X Celco Major 30
- 1 X Avolites Q Patch c/w decoders
- 1 X LSC soft link
- 1 X Avolites 72-way dimming system
- 1 X Avolites 48-way dimming system
- 2 X Celco 6-way 25A TV dimmers
- 1 X Avolites 12-way, 10A relay module
- 14 X Clear-Com intercom remote station
- 1 X Clear-Com 2-channel mainstation
- 2 X Rosco 1500 smoke machine
- Thomas truss
- Verlinda chain hoists
- Power Light 10 way motor controllers

Studio Straits

Patrick Woodroffe's 4:1 Studio has recently been used by Limelight Videos to make a rather unusual promotion video for the current Dire Straits single 'Calling Elvis'. Gerry Anderson of Thunderbirds fame was called in to make models of the band to recreate a concert situation to scale. Strictly speaking the models are to 1:3 scale not 1:4 scale because to go any smaller would present difficulties with the motorised mouths and eyes! The idea is also to be used for a commercial to promote compact discs for Dire Straits' tour sponsors, Philips.

Shots of live footage of the band in performance were mixed with those of the puppets. Steve Nolan was responsible for the lighting rig, having received a plot from Chas Herrington, Dire Straits' lighting designer. In the studio situation Steve managed to duplicate the shape of the lighting system with three triangles at the back of the set. Restrictions were imposed on an exact replica to accommodate the puppet strings which had to come through the roof. The

problem of simulating Vari-Lites at the Studio was overcome by using Clay Paky Golden Scans with the irises right down. When Steve set up for the live band he obviously built the full scale version of the studio system, and he had the advantage of having already programmed his disc at 4:1.

A nice touch to the video is the presence of Lady Penelope as a groupie bopping at the side of the stage and Brains operating one of the truss followspots!

Director — Steve Barron
Producer — Adam Whittaker
Lighting cameraman — Adrian Wild
Lighting board — Steve Nolan

Entec score with Clannad

Entec Sound & Light has just completed the successful Clannad UK tour. The Entec rig featured a 26kW JBL Concert Series system with Marc Langley, Entec's sound engineer, at the Yamaha PM3000 front-of-house mixer. The tour also featured new floor monitors from Accord.



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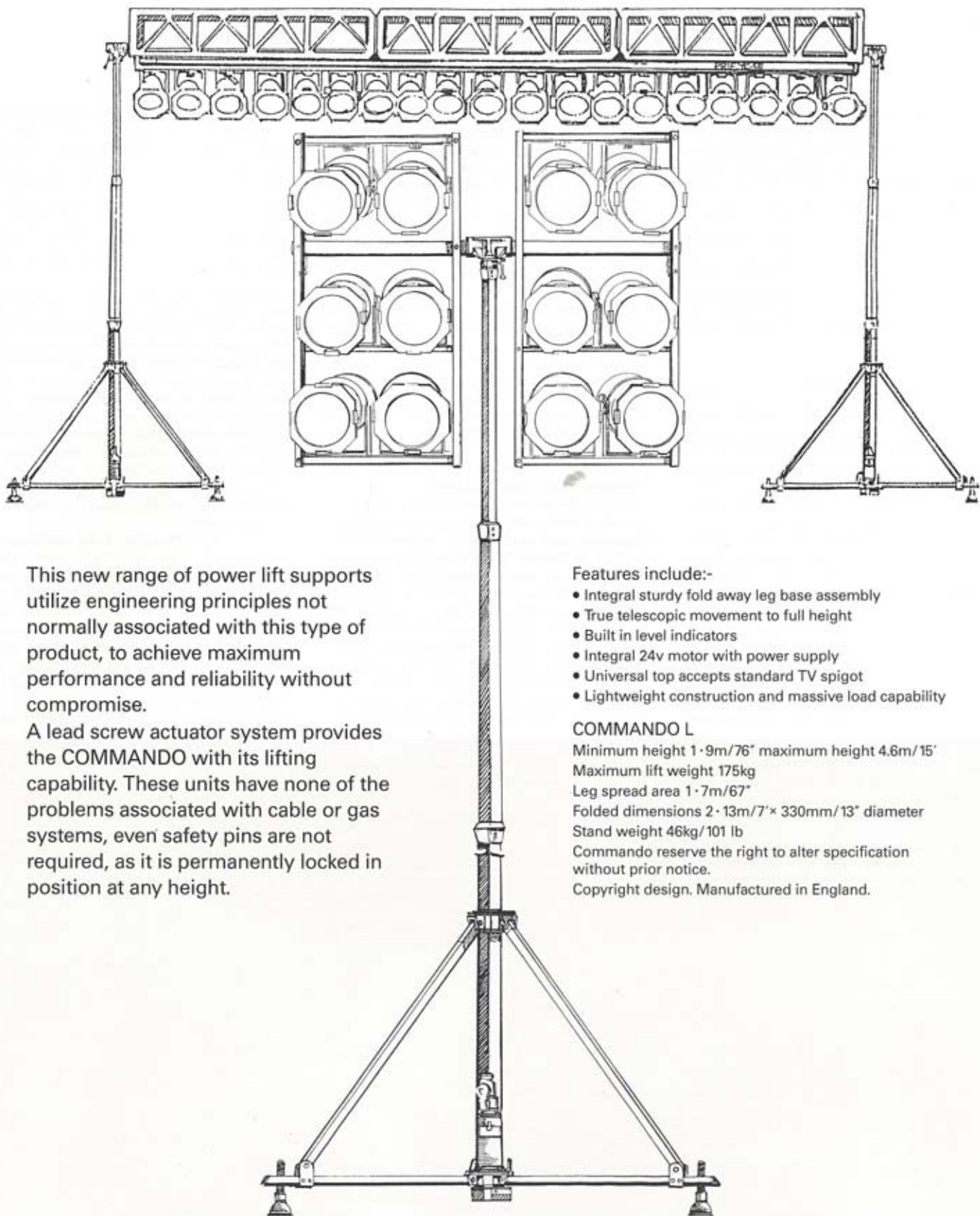
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TELECOMS GET IN ON THE ACT

Tony Gottelier reports

All over Europe Telecom companies have been active in the AV market in recent weeks. L+SI chronicles the Belgian RTT semi-permanent show at Lessive and the satellite mixed-media exhibition in Brittany. In the September issue Tim Fothergill, a leading laser operator and technician, will explain Dutch Telecoms' involvement in a major Vangelis outdoor spectacular in Rotterdam. Both Fothergill and Mark Schuermans, technical director of AV-Enger who were responsible for the Lessive project, will be sitting in a laser discussion panel during the Light and Sound Show in London from September 8-11th.

The story from Lessive, Belgium

In recent years, for six months each year, RTT (Belgium's Telephone and Telecommunications Service) have taken to opening their ground-station communications centre at Lessive to the public. They mount various displays at the heart of which is an audio-visual exhibition, with a view to making the technology more comprehensible and accessible to the public.

This year AV-Enger, the Belgium-based audio-visual engineering company, headed by Mark Schuermans, were given the task of designing and implementing this audio-visual exhibition.

The theme for this year's exhibition is (not too surprisingly) communications, with four separate rooms each housing a show related to the common theme, covering the groundstation at Lessive, satellite technology, the history and development of telecommunications and a centrepiece looking at the state-of-the-art and

pointing to the future.

Mark Schuermans describes the project: "We decided to explain the various aspects of telecommunications in a way that would involve the audience as well as educating them. As the subject matter could be considered somewhat daunting, we decided to retain one element familiar to all — the telephone." This appears as an icon in each presentation, although in various guises.

The brief called for a 'hi-tech' approach which meant that many visual effects and a complex programmable control system had to be protected from the public, while local operator access had to be limited to language selection and show reset. For this reason AV-Enger opted for LiveWire's computer-based NOW show control system which was housed in a glass-panelled booth in the lobby.

The shows and how they were achieved control-wise are described by LiveWire's chief development engineer, Will Parker.

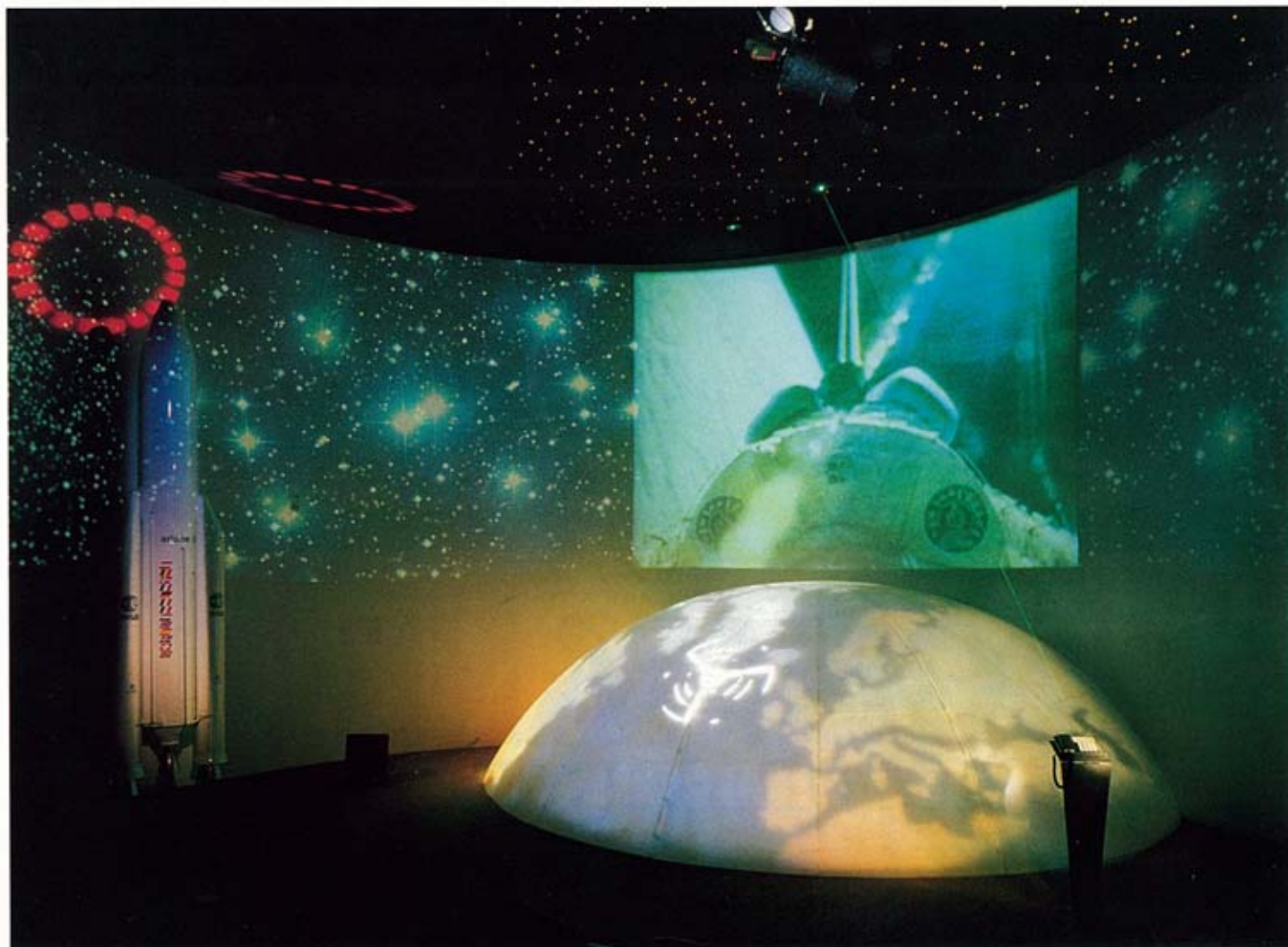
Above the groundstation control room is a viewing gallery giving a panoramic view of the equipment used to control the communications function at Lessive. Here there is a four part video show on four monitors and concealed speakers, with controlled breaks for questions and answers, which describes, in detail, the various aspects of the equipment below and how it functions. (In common with all the shows the commentary is available in four languages.)

In the main exhibition area, a purpose-built tunnel takes you to the 'Satellite' room where an array of monitors, with a central Electrosonic

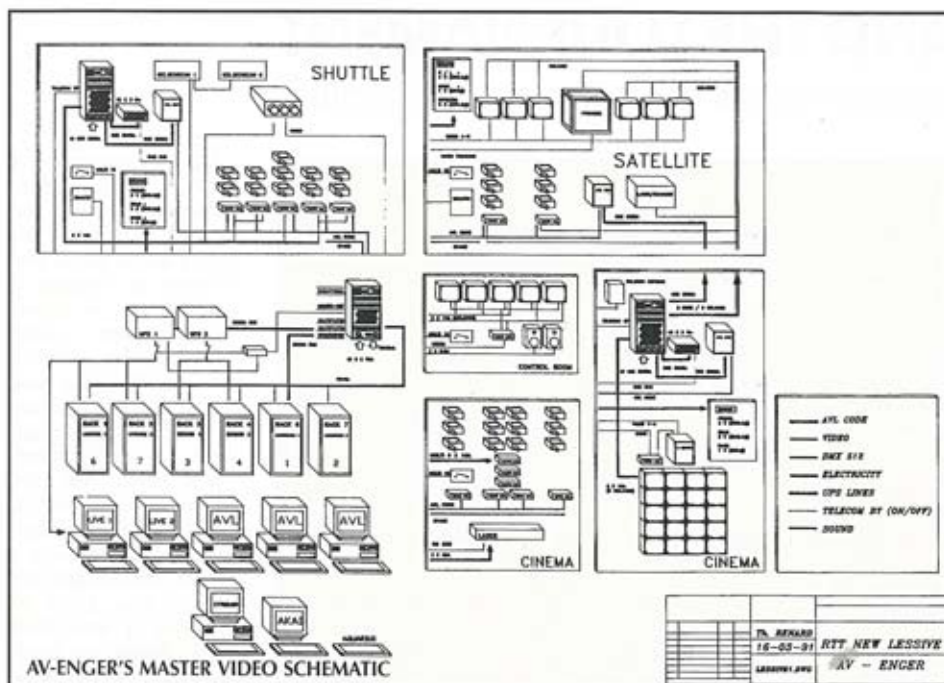
large projection monitor, are styled to look like a communications satellite. Here slide projectors, underseat and overhead lighting, a Laserpoint fibre optic laser feed with mini scanner (all concealed inside an ordinary telephone!), a smoke machine, video and audio from laser discs and synchronised MIDI-based sound effects literally launch you on a journey from Telstar through the development of satellite communications.

Across the way is the 'Shuttle' room, where a video projector/slide projector, moving lights, generic lights, another fibre optic laser feed, a light curtain and more MIDI-based sound effects are all used in a show which explains the origins and development of communications. Good use is made of hand-crafted coloured gobos that project an earth map and varying cloud cover onto a floor-sited hemisphere. The laser is projected from a telephone, high up into the ceiling onto a 'satellite' and back down to various locations on the 'earth', to demonstrate the part that satellite plays in international telephone calls.

Finally, the high point of the exhibition is in the cinema. Here, slide projectors, generic lights, the Laserpoint Spectra Physics source laser (remember the fibre optic feeds?), a 20 monitor videowall and very effective sound effects are used to show the current state of telecommunications, (including some not so obvious uses), and the future. This show kicks off with a laser generated graphical image of a 'hand' bringing an outsize handset into view and then proceeding to dial on a telephone key



Hand-crafted coloured gobos project an earth map and varying cloud cover onto a floor-sited hemisphere. The laser is projected from a telephone to the satellite (top of picture) and back down to various locations on the earth.



pad displayed on the videowall.

"There is one more exhibit. In a prominent position in the entrance area stands the purpose-built nerve centre with all of the exhibition control equipment on display. (NOW controller, Laserpoint videowall and laser controller, three AVL Genesis slide projector controllers, video matrix switcher, MIDI samplers and effects units, sound mixing desk, amplifiers, power distribution blocks with timers etc . . .) It's amazing how many people stop for a while and stare through the plate glass to see it all working. In fact, some of the less attentive ones believe that this is the ground station control room!

The LiveWire NOW Universal Controller is in charge of all top-level control at the exhibition.

This is a dual system complete with full back-up to take over in the event of failure, and has one extra feature dreamed up by AV-Enger. As a new feature, and befitting a communication exhibition, there is a modem link, allowing remote monitoring and control over the system from their offices in Mechelen.

So, if anything starts misbehaving they can, hopefully, diagnose and correct the situation without having to jump into the car and race to site. (At least one can see what's really happening and not have to rely upon someone else's appraisal.)

So what exactly does the LiveWire controller do at Lessive?

When a timed power supply kicks life into everything in the morning, the Controller automatically commences the start-up phase of the exhibition. It initialises everything and performs status checks, if these are satisfactory, it links into 'showtime'.

Then it listens primarily to wall-mounted buttons in each exhibition area, which are used by the guides to start a show and select which language is to be heard. For each show it generates its own independent timings to synchronise everything, and accepts feedback from most of the equipment in order to attempt recovery of failures wherever possible.

On the output side it cues laser disc players, video matrix switcher, videowall, slide projector and laser controllers, the laser exciter and cooling system, smoke machines, moving lights, DMX512 dimmers, various static lights, a variety of MIDI-based equipment, laser shutters, house lights, the giant moving telephone and even the power - enabling it to instigate and oversee the automatic power-down at the end of the day.

For LiveWire this was the first time they had helped to put together a project in a totally

automatic environment without the use of SMPTE.

Although it was planned to use SMPTE outputs to control the slide projector controllers, the company ended up developing an IBM keyboard interface to give an even greater level of control. By eliminating the need for SMPTE information from the laser discs, by generating their own independent timing sources (since they also controlled the laser discs - synchronisation was easy!) it was possible to mix and match video and audio at any speed, without the need to tie up laser disc players just to give timing sources!

I asked Will Parker to be a little more forthright about the kind of difficulties I know he must have encountered with such protocol problems. "Finding alternatives to direct feedback can be a nightmare. I think it's time that certain manufacturers of A-V equipment realised that it's all well and good allowing external control over their products, but that it's not possible to use this to its best advantage, and show their equipment at its best, without sensible two-way communications."

AV-Enger were responsible for the total concept, design and implementation of the project, including all show software, slide generation and composition of the music used. They are also the distributors of the LiveWire Universal Controller in Benelux countries.

Pleumeur Bodou, France

Communicating with the first telecommunications satellite Telstar, launched in 1961, was never easy. It was geostationary, so to track it, a moving antenna was necessary.

The French, with their natural flair for the flamboyant, but usually effective, technical solution (eg The Metro and the TGV, need I say more), developed a huge antenna, weighing 340 tons looking remarkably like a giant ear trumpet on wheels. They installed it in a 60 metre diameter radome at the, then tiny, commune of Pleumeur Bodou in Brittany.

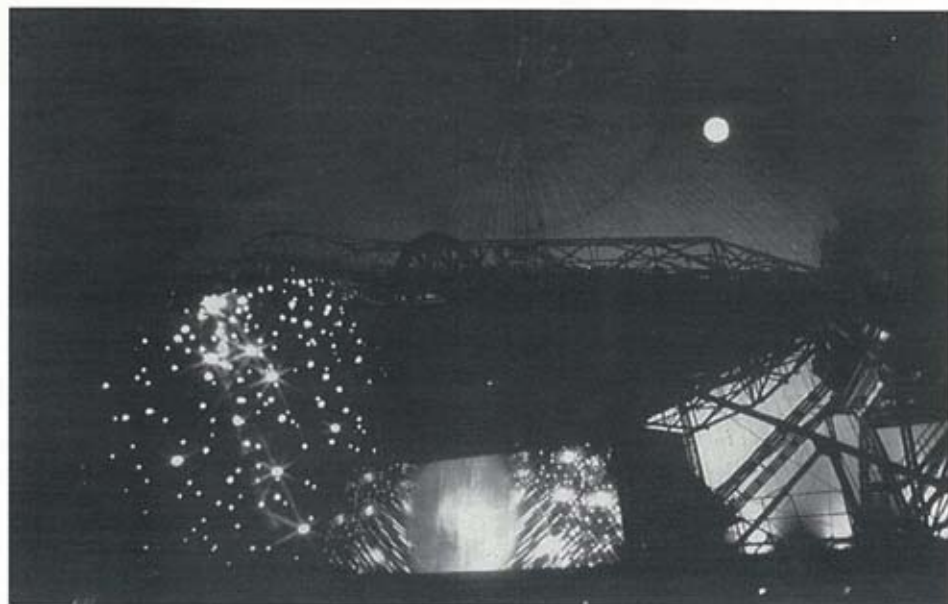
Today, it is the focal point of French history in telecommunications. For not only is it the location for a mixed media show during the tourist season, sponsored by the Ministry of Telecommunications, but also the site for a new Telecoms museum which was officially opened on July 11th.

The show, A-V engineered by Electrosonic Multi-Images of Paris, is presented on two 'screens', describing the history of communications and France's role therein. One screen, served by two Hardware for Xenon 1000W xenon slide projectors, which cover the whole surface, and two video projectors part of it, represents the 20 metre diameter mouth of the giant horn. 12 Kodak Carousels and another video projector feed the other, a conventional 20 metre wide rectangle.

48 channels of lighting are used to dramatise the dome and the antenna and two Hardware for Xenon 4500W xenon source projectors project imagery across the entire 'sky'. An eight channel sound system, with programmable amplifiers, is fed from three laser videodisc players which also provide timecode. The entire show is run by an Electrosonic BSC multi-media computer programme. Through standard interfaces this manages the lighting, the audio levels, the video discs, the image projection and even the movement of the giant antenna itself. The latter probably achieving some sort of record for the weight of a single object to be controlled at a multi-media show!

The museum is a modern heritage experience following the history of telecommunications from semaphore to Ariane. Electrosonic Multi-Images installed a control system providing A-V, video and lighting control in several zones in the museum. Infra-red detectors are used to trigger digital sound stores, which Electrosonic call 'tapeless audio units', in several areas for both commentary, music and effects.

All in all it seems that telecoms are the order of the day when it comes to A-V shows these days, and with the advertising and promotional budgets of the multi-national marketers so notoriously thin this year, thank God for that.



The giant 'ear trumpet' at Pleumeur Bodou with a little help from Electrosonic.

TOSCA AND THE TOURNAMENT

Tony Gottelier provides the technical details

The fashion for accessible opera on a mega-scale moved up a gear last month with the Harvey Goldsmith/Mark McCormack production of *Tosca* at Earls Court exhibition centre involving the largest lighting rig to be seen in London this year. What wouldn't have been known to the music fans was that the same lighting crew would be operating the system for the Royal Tournament a few days later.

The fact that the largest lighting rig to be seen in London this year wasn't designed for rock-n-roll, but for an opera, may be symptomatic of the times but doesn't alter the fact that this was exciting stuff in the rock mould. Not that there was an absence of rock stars at the event itself, there were plenty in the audience which shows, in another way, that things are crossing over.

A further illustration at the opposite end of the opera scale came with a visit to Glyndebourne in the same week. This is opera at its least accessible, certainly until the new extension in 1993, yet the set for the first production of their current season of Mozart was designed by David Fielding, who has also designed for the *Pet Shop Boys*.

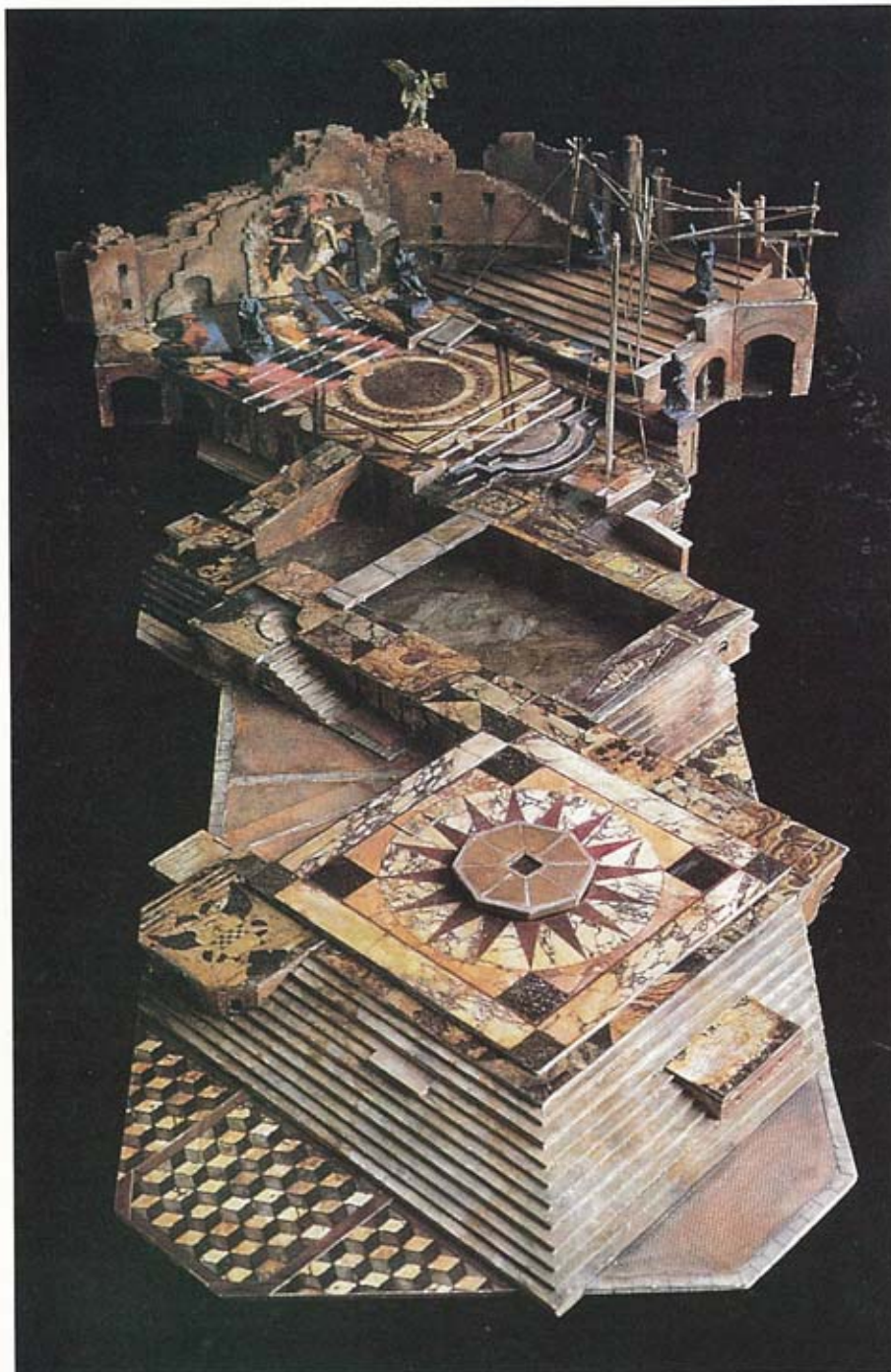
At Earls Court, however, the excitement wasn't just confined to the audience, Theatre Projects and Unusual Rigging and their respective crews certainly had their work cut out to fulfil the brief in the short time available, and then to de-mount it all and start again for the Royal Tournament the following week using the same control system.

The massive production of *Tosca*, involving a cast of over 280, a 60 piece orchestra, a 55m long by 24m wide central amphitheatre-style stage and Earls Court's notorious acoustics were also a major challenge to Autograph Sound Recording, whose designer Terry Saunders planned the sound system.

The Lighting

But we shall start with lighting designer Alan Burrett who started his career with the ENO, left to work abroad, came back as head of lighting and sound and subsequently moved on to become assistant to David Hersey collaborating on lighting *Carmen* at Earls Court, *Metropolis* and *Miss Saigon*.

First, it should be made clear that, on *Tosca*, Alan was working with director Francesca Zambello and set designer Neil-Peter Jampolis



Jampolis' brilliant set for Earls Court's *Tosca* created quite a few problems for lighting designer Alan Burrett.

who had collaborated often before and who had strong ideas as to what they required. As the result Alan wasn't entirely free to do his own thing, so if you feel, as I do, that a few opportunities were missed for a performance of this scale, then this was deliberate policy from the viewpoint of a director coming from the American soft focus school of lighting opera. Indeed, I understand that it was a major battle even to get the Vari-Lites agreed as these were seen solely as effects and 'noisy' ones at that.

Initial challenges included the large number of lights required even to create a simple wash on such a vast set, a trim height of 12m, an audience on three sides, with the two longest sides not in view from the desk and with sightlines varying from 15m to 100m. "It is not very practical to view each cue from all sides, there simply isn't the time in such a huge building," Burrett says, "so you learn to light not just from perspective, but with a global view."

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the day, as laid down by the duo of director and designer, and while this certainly worked well with the set, giving it the warmth of an old varnished painting, which helped to convey the period setting, I felt there were times when the audience missed out somewhat because things were not emphasised enough. For example, while clever use of the 12 follow spots (9 Xenon Troupers, 3 HMI 1200s) allowed Alan Burrett to minimise the ambient light on the huge stages, and be selective, in many of the crowd scenes involving a cast of 'thousands' of extras, it was extremely difficult to follow the action. "All of the follow spots were frosted and checked down to lose the circus effect which can so easily take over, and perhaps it was overdone a bit," explained Burrett. "You need to cover each artiste with at least three follows from different angles and change spots as the performers move in and out of the operators sight. As you saw, unusually for an opera, the

Burrett designed a lighting truss which followed the outline and enclosed the set. "This adds a lot to arena productions by creating a boundary to an otherwise limitless view," explained Alan. "With a show this size you have to get the plan ready many months in advance, so you are committed before you see any rehearsals, which is especially risky when you are working with a director and designer for the first time. Once it's up there, if they don't like it, there's not much you can do. As focusing was limited to night work, 4am is not a time to experiment, or have doubts with men hanging off a truss 12m above the stage. Drawing 1000 lanterns is one thing, focusing them quite another!" (Over 1000 assorted Parcans were used, some with Colour Mags, 190 assorted Silhouettes, 37 Cadenzas, 61 Starlettes, 60 floods ADB AC 101 and ET 1500.)

Another pressing problem to overcome was the designer's unusual concept of placing the orchestra in a well in the middle of the set. This was cleverly and most effectively resolved with the use of small flicker candles (Lighting Technology), which greatly added to the church-feel in the first Act and also contributed to the renaissance atmosphere of the Farnese Palace in Act Two by providing a muted glow throughout.

Despite the vast array of hardware, muted was pretty much the order of

action on stage was pretty frenetic." In fact, the designer had even suggested that a combination of Hamburg and 3 in 1 oil was tried in the softening process.

Another tool which Alan Burrett knew would be essential from prior experience with the big-scale Aussie reproduction of Carmen was Vari-Lites, significantly two VL4s for every VL2B. (A total of 98 were used.) "I was very glad of them as they allowed me to change or add specials and washes without doubling up on lamps," Burrett enthused. "But I agree, we could probably have done more with them, and the public is probably expecting some excesses from such productions on this scale. Perhaps, if it goes to Australia!"

The main lighting board was a Kliegl Performer IV, which offers some hope for those who believe that the future lies in PC-based systems. The control surface of the Performer offers little to the imagination, nor to the ego of the operator, yet is obviously a powerful little performer (sic). Dimmers were mostly Avolites with Arri Connexion soft patch and the Artisan operator was Nick Moran.

Alan Burrett, who was ably assisted by Ross Corbet to deal with the nuts and bolts of it, was quick to praise Theatre Projects who, not only provided all the equipment, but also the crew. So I talked to TP's Project Manager on the job, Ian Bagshaw, to get some of the logistics into perspective.

"How about 2500 amps three phase in six different positions for starters?" Ian proposed to grab my attention. "Our intimate knowledge of Earls Court from ten Royal Tournaments, Aida and Carmen proved invaluable. We have built up a good working relationship with the electrical department and all those supplies were ready when we needed them."

After four weeks pre-planning, on Saturday morning a 40 feet trailer delivered ten tonnes of dimmers, control and mains, most of which had to be hoisted 35m into the lighting gallery which took a day using two de-mag hoists. At the same time an Unusual Rigging crew, headed by Alan Jacobi and Steve Porter, were assembling the 40 lighting and cable pick-up points. On Sunday at 08.00, five more 40 feet trailers delivered the rig; by 20.00 the 40 tonnes, 500m of Telegage truss with 90 motors (and enough steel and spansets to fly a jumbo jet) light and sound rig was flown out; by 18.00 the following day the whole rig was at trim height and flashed out.

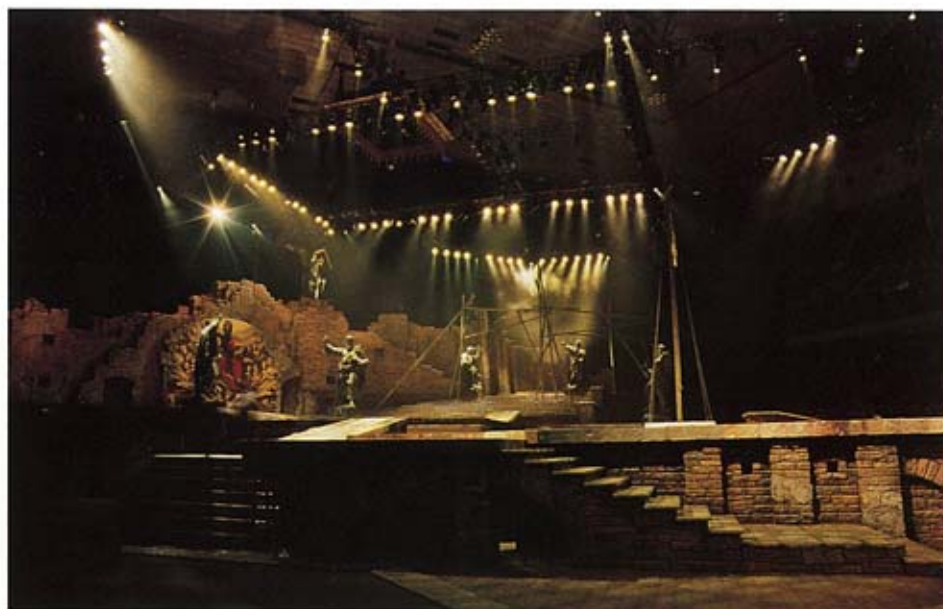
A day for hooking in the dimmers and controls, checking, followed by two days focusing and it was into rehearsals. "The load-out will commence at 20.30 on the 29th and 30 hours later the truss will be re-flown with 1500 lanterns to become the Royal Tournament 1991," Bagshaw told me optimistically. "And ten later I shall be lying on the beach with a cold beer!"

But we get ahead of ourselves, so first to the sound for Tosca and then back to Mr Bagshaw to see if his predictions are borne out.

Sound

Autograph Sound's Terry Saunders too had some pretty horrific problems to cope with. Principally the aforementioned and notorious acoustic of the venue. "If it were an aircraft hangar, possibly complete with the aircraft, it couldn't be worse," said Saunders. Add to the 15 second reverb time, the time delay problems of a long rectangular promontory of a set, the ambient noise associated with an audience of 12,000 people, to say nothing of the numerous animal extras, and you have the stuff nightmares are made of if you are a sound person. And yet this was opera!

Undaunted, Terry loaded the dimensions of the building, the details of the set and the seating plan into Autograph's CAD system, to calculate speaker angles and locations and to determine suitable delay times between speaker clusters. The aim was to deliver high quality



Scenes from Tosca, lighting with a global view from Alan Burrett.

sound reinforcement, with the dynamic to be intelligible throughout the auditorium.

The resultant design called for 116 speakers, of which 42 were Meyer UM1s flown in seven clusters over the stage with some MSL3s for the orchestra and side infill and delay cluster, working from 24 different delay settings. Heavy cloth drapes were hung in the roof and behind the seats to act as baffles to reduce echos and together these moves got the reverb time to a manageable level (60 Amcron Microtech and Crest amps — 42kW of power).

A total of 97 mics were employed, 55 close-positioned for the 60-piece orchestra and 16 radio microphones split between the cast and the chorus. The desk was a 100 input Cadac E-type, claimed to be one of the largest ever assembled, making full use of the computerised routing facilities. The voice and the orchestra were kept entirely separate and it was this aspect which drew the most comment from the serious music critics who seemed not to like the balance between the two.

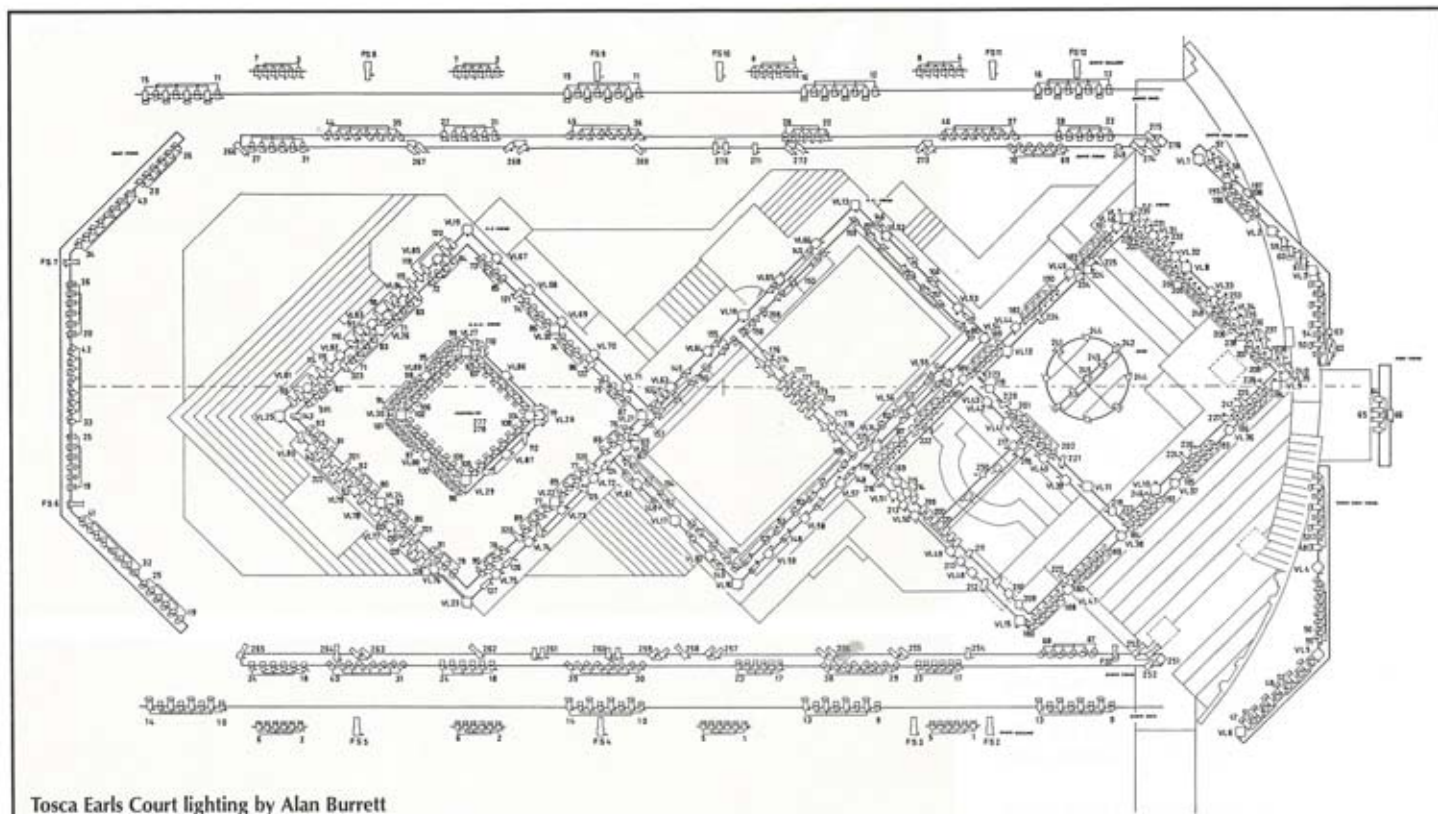
Another problem was to ensure that the audible and visible images coincided, providing a clear and believable sound field. Sitting at the side in the upper circle I noticed this was not entirely successful and was obviously exceedingly difficult to achieve with a set projecting 55 metres into the auditorium. As Terry Saunders explained: "Tosca was mixed entirely live, with the engineer having to track the performers moves in real time, as pre-programming was out of the question." Perhaps on another occasion

it would be worth considering installing the desk to the side of the set, rather than in the traditional position FOH, which at this production faced the narrow end of the performance area, creating great difficulties of visibility for the operator. (Or some kind of interconnect with the follow spots?)

This aside, Tosca was a brilliant achievement and a technical feat for all concerned. Such productions present a set of entirely new challenges, to say nothing of the massive logistics, and consequently, there is a steep learning curve to overcome. It is clear that the technicals will get better and better, and, as anything which makes the arts more approachable, has to be good for all and for our industry in particular — more power to their elbow. We look forward to the next one which, if you exclude Pavarotti in the Park, will be Aida again at the NEC in Birmingham.

One person who expects to be involved in that one is TP's Ian Bagshaw, but before even giving that a thought, there was the Tournament to think about.

As has already been mentioned this involved an extremely fast get-out both to avoid expensive penalties for the Tosca production company, but also because the logistics of the Royal Tournament are truly horrendous also. For London's annual military pageant is a military operation in its own right, with all the participating service personnel camping on the site, with their own catering and the horses



Tosca Earls Court lighting by Alan Burrett

billeted in the new No2 car park. To say nothing of the 150 tonnes of stoneless soil imported and re-exported from a farm in Kent each year. It may seem anachronistic in these times but this show apparently gets more popular every year, especially with corporate parties, and despite the controversy of cut-backs seems set into the annual London social fabric.

It certainly requires an ability to stay cool under fire for those involved in the production, a skill which Ian Bagshaw would seem to have in abundance. For Theatre Projects, who have been lighting the Show for ten years, it's still the biggest job they do. "It is well known, I think, that it involves the longest single span of straight truss, assembled annually in Europe, of 92m down the Arena," Ian Bagshaw mentioned casually. "30 hours after the last performance of Tosca the rig was back at TP and Unusual Rigging had everything else down, including the cables left to one side so that they didn't need to leave site, while they re-hung the PA."

The new rig involved 660kW of lighting on the main truss, three 36m cross lighting trusses on the main feature at the end of the hall with a further 700kW of lights and 120kW of side lights in the gallery onto the soil. Of the total of 1600kW, three quarters were Parcans and it was necessary to check and re-use many from the

Tosca rig to make up the quantity. This was done overnight at TP.

"The plan was to keep all the dimmers on site, although we had to add two 72-way dimmer racks, maintain most of the same power circuits, only changing the mains patch and using the memories in the Arri Connexions to re-patch the show control," Bagshaw trotted out in his matter-of-fact way. "We spent a day pulling out all the right cable lengths from the cables set aside, re-marking and re-tripping before loading them onto pallets to forklift back into the arena."

By the Tuesday at 20.00 everything was hung and flown out to trim height which, for The Royal Tournament, means 27m right into the roof! (I am so glad I didn't embark on a career as a rigger.)

So that was pretty much it for Bagshaw who, perhaps surprisingly even for one so phlegmatic, is already looking forward to the next one. "I am hoping TP will get Aida, because this involves 36 of the Mark III Telescans which will be brought in from France for the occasion." Like a kid with a new toy, Ian relishes the challenge.

A glutton for punishment — just the man Theatre Projects need to project manage these mega events, for which there seems to be an insatiable public appetite.

	Vari*Lite	29
	Vari*Lite 4	59
	1kW Par 64	534
	1kW Sil 30/40	170
	2kW Sil 15	9
	2kW Fresnel	13
	Xenon Trouper	9
	1200W HMI Follow Spot	3
	2.5kW HMI Fresnel and Auto Shutter	1
	1kW Plano Convex	36
	Colour Scrollers	54
	24V 500W Beamlight	6
	1000W Floods	12
	1kW Fresnel	48
	Par 36 Pin Spot	34
	2kW Plano Convex	1
	Ray Lights	6
	Animation Discs	2
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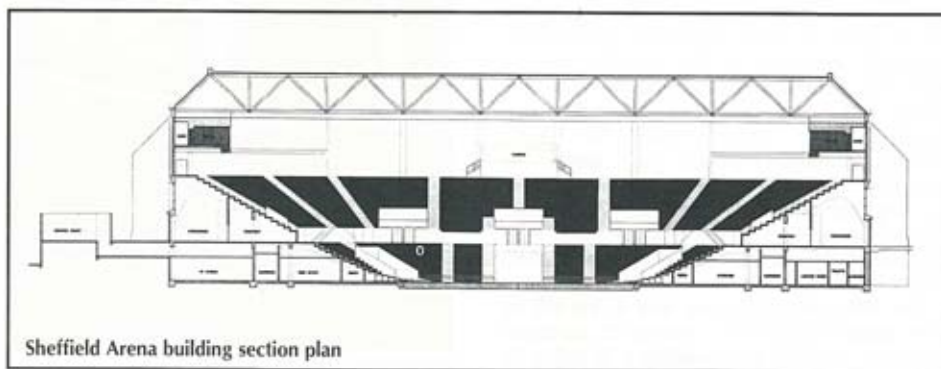
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The Royal Tournament, a major London event for Theatre Projects.

SHEFFIELD STEALS THE SHOW

Tony Gottelier visits Sheffield's new Arena, a major new rock venue and Don Valley Stadium during the preparation for the opening ceremony of the World Student Games



This feature focuses on the new Arena and Don Valley Stadium and finds the City's investment worthwhile. Tony Gottelier looks at the core sound installation at the Arena and talks to suppliers, installers, designers and acousticians. For the event itself he meets the lighting designer and those involved with various aspects of the temporary sound systems.

In the week when it was revealed that the running of the World Student Games would cost £5M less to run than originally anticipated, I went to Sheffield prepared to be sceptical over the £150M investment in infrastructure which preceded the event. I was fully prepared to join others who have criticised the city for what appeared to them to be a profligate waste of money.

Bearing in mind that this is the biggest outdoor event of its kind ever staged in the UK, bigger even than the Commonwealth games and only exceeded by the Olympics in scale, you can imagine that the facilities need to be expansive. Hence a brand new 12,000 seat indoor arena, a 30,000 capacity open-air stadium and an Olympic-sized swimming pool, the latter housed in a suitably polished stainless steel clad hi-tech building near the city centre, and the £150M spend.

Mention of steel, of course, brings us to the nub of the argument, for it is the acres of waste ground created by the shrinkage of the local steel and cutlery manufacturing base which have created both the space and the need for massive investment in new building. Sheffield City Council, still bursting with civic pride, is even now talking about an airport!

The point, it seems to me, is that you need something like the Games as a focus to generate the right atmosphere to provide the investment in the first place. Obviously if you write all this off against the one event it will seem like total lunacy to bankers and community charge payers alike (anarchistic elements of the latter were already daubing red-painted slogans on the venues during my visit). Nevertheless, consider what you are left with afterwards and the picture takes on a rosier hue and seems to sit within the best traditions of those dying American cities that have pulled themselves out of freefall by just this kind of innovative thinking.

Consider, if you were a multi-national company relocating in the UK, wouldn't you be attracted by the facilities such a city provides for your employees? So the benefits may be 'below-the-line' to the good people of Sheffield, but I am convinced that the long term results will be spectacular and prove to be enlightened. The opening ceremony will have given the residents something to be really proud of, the name of Sheffield will shine out and born-again Sheffield may never look back. Maybe even, a steal at the price!

The Sheffield Arena

The most spectacular legacy of this huge investment as far as our industry is concerned is the Sheffield Arena on which £34M of the money was spent — a first class 12,000 seat amphitheatre which must fulfil a major requirement for headline mega-bands. As is well known, most venues in the UK are too small to support the high cost of such artistes, let alone provide all the other necessary facilities, other than exhibition halls which are soulless and generally appalling acoustically.

The fact that the Paul Simon tour opened the venue is significant in this context, and followed by Rod Stewart, and with Sting, Chris Rea and five sold-out nights of Dire Straits to come, gives a sample indication of Rock management's view of the facility.

Probably wisely it was to the US that Sheffield looked for its consultants for this project, presumably on the basis that the Americans have cornered the market in halls of this size and, anyway, many of the acts are likely to emanate from the US. So Kansas-based HOK Sports Facilities worked with local architects Lister Drew Haines Barrow to plan the structure and its performance amenities; Craig Jensen of Joiner-Rose from Texas designed the acoustics and wrote the PA specification subsequently fulfilled by Hi-Profile Technical Services, who were advised by Peter Barnett of acoustic consultants AMS and worked under the umbrella of Hall Stage who had won the technical supply contract; and the finished product is managed by SMG International who specialise in the operation of such venues in the

US where, among others, they run the LA Memorial Coliseum, the Louisiana Superdome, the Spectrum in Philadelphia and Pittsburgh's Three Rivers Stadium. (The fact that the latter is the home of the Pittsburgh Steelers, ho ho, may not have been entirely lost on the good burghers of Sheffield either. Following the disaster at Hillsborough, they must be hoping that Sheffield Wednesday will eventually aspire to greater things and, at the least, eventually share the occupancy of the new and adjacent all-seater Don Valley Stadium.) SMG also manage the Stadio Delle Alpi in Turin.

Sound

I spoke to Craig Jensen, a British passport-holding South African living in the States, about his experience providing sound in stadia and, in particular, about this specification and how it came about. He told me: "The Joiner-Rose Group has specified sound systems and acoustical consulting services for more than 20 major sporting venues around the world. Our remit for Sheffield Arena made us responsible for the acoustical design of the hall and the performance specifications of the sound system. As far as sound was concerned, primary goals included provision of powerful and intelligible full-range sound to all seats in the arena. Subsequently, we approved the use of Community RS220 speakers and these have performed and satisfied the brief very well indeed." Attention to detail by this consultant, for example, resulted in a 'no fan noise' edict for the amplifiers and mandatory security covers for all control panels.

Careful planning of the acoustics was another essential ingredient with 100mm thick Ecomax wall panels used to almost completely cover the East and West walls with a 100mm air gap behind. The entire roof is clad on the interior with perforated metal with 50mm of acoustical backing, even the seats are upholstered which, although primarily for comfort, reduces undesirable reflections in low capacity configurations.

Naturally, I was curious to know how a little known sound installation company, such as Southport located Hi-Profile, managed to win the tendering process for this prestigious contract, against substantial opposition from the likes of Philips and Shuttlesound. Phil



Community's RS220 suspended 25m in the air — any fuzziness is entirely due to camera-shake!

Braithwaite, Profile's technical director, explains: "We took a substantial risk investment in the technical design prior to the tender by using AMS to carry out detailed calculations against the Joiner-Rose brief. This enabled us to provide a quote on the basis of a very efficient system and, at the end of the day, I am sure that it was the resultant keenness of the price which won us the contract. Peter Barnett of AMS was brilliant throughout."

So what precisely was it that Peter brought to the design which was such a powerful contract-winning ingredient? "I simply translated the Joiner-Rose specification into a Community-based system and then provided the calculations to verify that it would meet their performance criteria," Barnett told me.

Braithwaite also worked closely throughout with Steve Smith of The Sound Department in London, well known in theatre circles for their specialised audio systems and now also importers of Community. A total of 51 of these boxes were used, split between the RS220, a compact three horn-loaded enclosure, selected for its high sensitivity and matched directivity as much as for its projection and transient capabilities (power: 200W pink noise, 0.5kW programme; frequency response: 100Hz-18kHz; sensitivity: 105dB @1W/1M; Max SPL: 131dB; dispersion: 65x40v degs). For bass reinforcement, eight Community VBS 212 cabinets were included. All these are controlled by three dedicated RS220 processors which provide crossover to the sub-bass and 'intelligent' system protection.

This distributed system, flown on James Thomas cradles across the roof space, is configured into several zones each of which can be muted to shape the coverage to the specific usage of the arena at any time. For example, different formats are provided for specific seating arrangements such as end-stage use, central arena performance and conference setups. There is also a permanent facility for conversion to an ice rink below the floor, so the mounting of these speakers, and the control racks situated on a catwalk 25m above the ground to reduce speaker cable runs, was not allowed while the ice pad is being laid beneath the building. Each speaker, weighing between 30 and 40 kilos, had to be winched into place and the equipment racks were assembled on the catwalk. Not a job for the

vertiginous, as I can testify from my own intrepid attempts to photograph the gear in situ.

These three racks house both the specially modified amps and control electronics for the main arena PA, together with the 100 Volt line amplification for the FOH and backstage system supplied by HR Electronics.

The Soundmaster amps for the main PA, mostly M-Jay VF 800s and some 1200s, were especially modified by the manufacturers to meet the Joiner-Rose specification mentioned above, and a total of 15kW worth of these are employed. The American-made IRP (International Research Products Inc.) System 41 modular signal processors were selected, working alongside the Community 220 system controllers and a Klark Teknik DN 405 parametric EQ, all racked together with EMO mains distribution units.

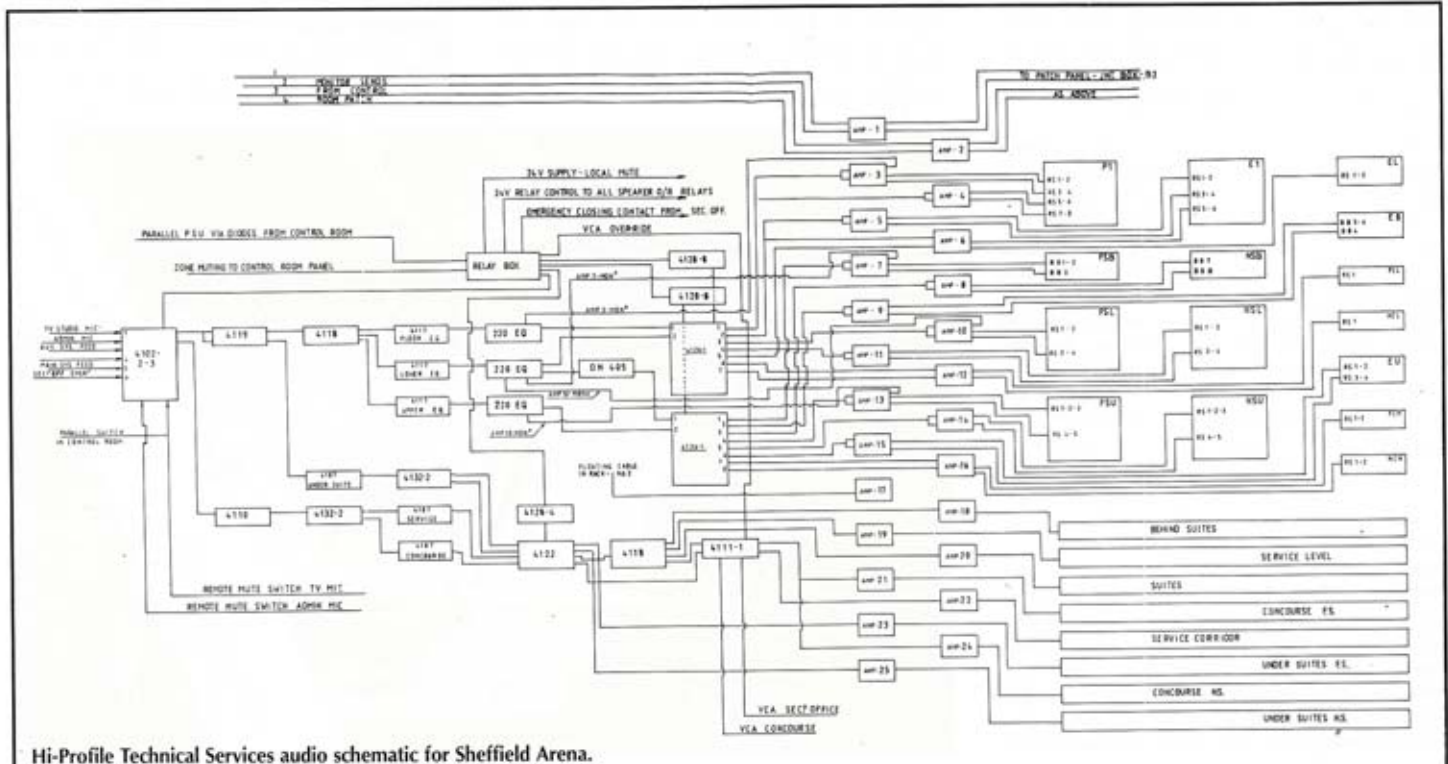
The IRP system 41, being sold in the UK by The Sound Department, seems of particular interest to installers as it provides a 19 inch x 6u chassis with security lid into which the various elements can be built up and run from a single power source. Racked modules, from the large selection offered, used in this system at Sheffield are: input mixer; dual limiter; 6-way distribution amps; 9 and 29-band transversal EQs; signal delays; 8x8, 4x4 and remote matrix mixers and various remote controls. All these are housed in just two main frames. The house mixing desk located in a high level control booth alongside the lighting control board and a video station, is the Soundcraft Delta 200 (16:4:2). There are infill speakers along the long upper galleries, to boost transmission to those in the high tiers. As with the 100V-line peripheral PA, these are the JBL 8140H, a coaxial 200mm transducer, described as high power (40W cont.) and hi-fi (sensitivity: 97dB SPL,1W/1M; frequency response: 100Hz-10kHz), which comes with the option of a custom wound 100V transformer. They are boxed in Atlas enclosures and in total 161 are employed throughout the building. Local VCA controls are from Millbank Electronics (MTVC 100R). Additionally, 4 Martin Audio CXW monitors, are used for portable ground level purposes, though the installer indicated some disappointment with these.

I wondered how much the long cable run from the roof might have contributed to any performance impairment and, although I understand that the requirement for these speakers may have been an afterthought, possibly a



The control end of the system.

smaller local rack might have been a worthwhile consideration. Nevertheless, performance of the system as a whole seemed excellent and the distributed concept certainly provided good clear transmission even in an empty hall, while calculated focusing of the Community RS220s, to Peter Barnett's design, ensured even coverage with no hint of patchiness. In fact, the Joiner-Rose intelligibility criteria was for 10%ALcons, AMS predicted 8%, they actually measured below 5%. In addition, in phonetically-balanced word tests, 97% articulation was achieved. It is probably as well that AMS and Hi-Profile went for this distributed approach because, as it has turned out the acoustics, especially in the roof where the damping panels may not have been correctly installed, do not seem to favour forward projection from the stage. Of course, it is in the nature of distributed projection that the enclosures face away from the roof thus avoiding this problem. Music sources are Tascam compact disc (CD401) and cassette (122 Mk II) which are patched to the system via an 8 x 26 jack field and through a TC 1140 parametric EQ, and two Symetrix 501 compressor/limiters which input all external sources such as stage boxes and radio mics in the control room. The emergency system, also installed by Hi-Profile, is an EPROM-based digital store from Whiteley which over-rides the entire system via an IRP 41 module



IN PERFECT HARMONY

This line from 'I Want to Teach the World to Sing' reflects exactly the motivation for the World Student Games as the co-ordination required between the thousands of children, athletes and technicians taking part in the opening ceremony. What did it mean in terms of light and sound?

Lighting the Ceremony

And so up the road to the Don Valley Stadium, linked to the Arena by a footbridge, to find out what lighting designer Durham Marengi, late of The (Berlin) Wall fame, had up his sleeve for the opening ceremony of the World Student Games in front of a capacity crowd of 30,000. The Stadium, an omelette of yellow-painted pipes, poles and steel wire ropes topped with a froth of peaked and stretched white canvas (are we turning into a nation of Bedouin?) reminiscent of the Mound stand, Imagination's roof or Le Mans station platforms. A giant oeufs a la neige of a building. One was immediately confronted by the usual security, although possibly tighter in view of the threat from poll tax protesters. Realising that such uniforms wouldn't be likely to know one Durham Marengi, even if he could get his brain around the pronunciation, I dutifully asked for Plus 1 Event Services whose Eve Ritscher was producing the jamboree. "We can't speak to them on our wavelength guy, but ask anybody with long hair in the stadium. They all work for Plus 1." As it turned out this was a highly misleading suggestion, but goes a long way towards showing the outside perception of anybody who works in anything remotely connected with entertainment. A more apt description would have been 'anybody wearing shorts', for this was the hottest day of the year by far and the entire crew had resorted to their traditional summer uniform. Marengi himself is a very clean-cut individual, in the agent Cooper mould, not a long hair in sight, and modest but very meticulous about his work. A man who really cares about light and he's clever too, some of the ideas he was bringing to the event

were highly inventive and challenging to say the least. "The problem is to provide a major spectacle on a city council budget, never an easy task," confided Marengi. Originally the plan was to make use of the stadium flood pylons to form a backbone support for some steel fabricated lighting towers, but when it came to it scaffold had to suffice. Furthermore, savings on instruments were necessary, like a reduction by at least half of the number of Parcans called for. Time for a bit of pragmatism from our intrepid designer. Fortunately, help was at hand in the shape of the generous specification of the stadium floods, for Durham discovered from the house electrician that only half of them would be used on the night. "Ah ha," quoth he, "I'll colour-up the rest, and this will give me the background wash I need and also provide a good solution to the problem of dealing with dusk," - for the ceremony was due to start at 20.00. So half the two 'batteries of sodiums facing away from the grandstand at the corners of the ground were gelled red, in the interest of the TV cameras, and half the two facing gelled amber. The four scaffold towers below, each supported two Supertrouper on a platform at 20m and two TP 4k Xenon Sky-Arts at 10m, with 48 Parcans (650W AL) on two vertical bars between. Marengi is particularly partial to the Sky-Art following experimenting with it for The Wall, and sees it as a giant lighting tool for integration in outdoor performance and not just as a searchlight. The 4kW Xenon Arc can deliver up to 325 million candlepower at a colour temperature of 6000k. "The controllability from the programmable dedicated multiplex desk, both of pan, tilt and



'Unusual' rigging the 80m lighting truss.

the possibility of adding Colour Mags, make it an awesome projector," enthused Durham, "and the radial diaphragm mechanical dimmer can also be used as a gobo by varying the focus. I first used them on The Wall, with both enthusiastic and financial support from Fisher Park. Sky-Arts were used to simulate the approach and crash of the Messerschmidt, somewhat tricky to achieve in reality, and also to highlight the flying pig." So, at Sheffield eight were to be used for the show, with four 4-head Trackers for sky sweeps. Further conventional Parcans were saved by the use of a small number of Cinepar 2500s, a lantern based on the Philips 2.5k MSR single-ended lamp



The flame, the Vari*Lite Chevron, the fireworks, the Sky Arts - the lot!
Photo: Plus 1 Events/Sheffield Town Hall.

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Durham Marengi folds back the Colour Mag to reveal a personal favourite – the Cinepar 2500.

designed for film and TV use, also fitted with Colour Mags. These were mounted on the main horizontal truss, which spanned 80m across the front edge of the grandstand, and included 36 cyc floods and 36 VL2B Vari*Lites." The Cinepars are so pokey they can be used in place of any number of Cans," Marengi commented. Four Colorarcs were installed at the back of the grandstand. Another light touch was demonstrated by the 20 VL4 and 12 VL2B Vari*Lites arranged in a chevron pattern on the grass slope leading up to the 'Olympic' flame. Behind were set the four Sky-Trackers scheduled to blast their humongous beams scanning into the atmosphere from their 16, 2k Xenon sources

on cue from the torch. The statistics from production electrician Ross Corbett, who was also a senior crew member for the Tosca production (see pages 28-30 of this issue), are as follows. Cable: 3500m - mains, 3300m - control, 1500m - 32A C-form/C-form IPL, 1000m each, multicore and TRS with distributed power of 2060 amps.

Marengi was very keen to ensure that the whole crew shared the credits and, in particular, Sean Nugent who would be programming and operating the Artisan board. "Anybody who has any knowledge at all of the complexities of programming a show with moving lights will know that the lighting designer cannot take any

credit for that aspect of the work whatsoever," said Marengi, "I always run my own board, in this case two Celco 60-ways, but the Vari*Lites are entirely down to Sean. Simply specifying them doesn't make a design." On top of all this, Le Maitre organised a pyrotechnical finale. Small wonder that the 30,000 citizens of Sheffield who attended the opening were totally gob-smacked and so were the press who gave the show star billing the following morning. Indeed, is it any surprise with all that distraction that Helen Sharman, astronaut and bearer of the flame for the last few hundred metres, tripped and fell, snuffing out the torch, en route to the summit. (Only kidding Durham.) Anyway, as I was told by one cynic: "it certainly brought her down to earth with a bump!"

The Sound

Dimension Audio is a relative newcomer to the presentation and major production scene, having been formed only a few months ago by Graham Andrews also MD of Creative Technology, and ex-TP backroom people Derrick Zieba, Andrew Lillywhite, Clinton Cast and Taryn Garwood with the backing of Avesco PLC. Yet already they are making their presence felt, with the 'Light the Darkness' concert in Geneva (L+SI, June), Lloyd-Webber's new production of Joseph and the Amazing Technicolor Dreamcoat (L+SI, July) and now this! Clinton Cast, Dimension's project manager, discussed the particular difficulties involved in sounding such a large area in the open. "Of course the biggest, and most obvious problem is that you can't suspend a central cluster in the middle of an open stadium," Clinton told me impishly. "In fact there is no ideal location, so we have had to use the base of the lighting towers. Unfortunately, for the majority of the audience this means that the stacks are behind them which will cause problems with delay and echo." As the performance envelope is not

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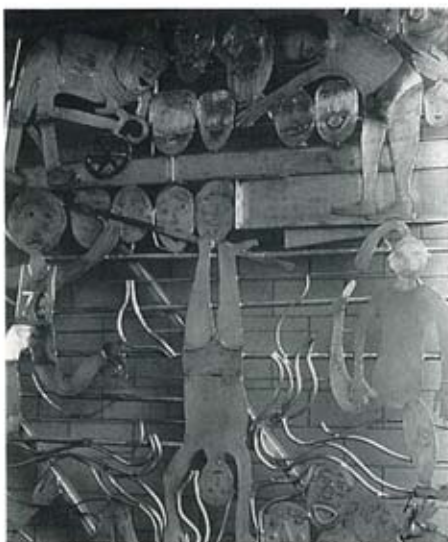
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Symbolic of the spirit of the games, the stainless steel gates to the stadium.

concentric either, the speakers would be focused sharply downwards to restrict the transmission from one side of the stadium to the other. The main speaker system covering the performance area consisted of 20 Turbosound TMS3 and six 124 sub-bass units. The main covered grandstand had its own sound zone provided by a combination of 12 Community RS220 speakers, they are getting around aren't they, and eight ElectroVoice S200s. Amplification was supplied largely by C-Audio, with QSC and Yamaha whose Q2031 EQs and DDL3 Delays were also used. The desk was a Soundcraft 8000, 40-channel supported by a 'Venue' 16-channel mixer. Statistics: 500m - twin 8-core, 100m - twin 16-core, 3000m - mic. cable.

Sounding Out the Event

The World Student Games ran for over two weeks, in 19 different venues, most with inadequate PA, or no permanent PA at all. How did local sound rental company Roadstar, charged with the responsibility, resolve these problems?

The first we knew about Roadstar's involvement was a telephone call to L+SI's office from Mike Gerrish of Citronic to say that he had just sold 30 SM350 mixers to a hire company in Sheffield and felt that this was worthy of a mention in these grim times. Actually, I suppose it's a sign of these same times that such an order



A stack of Games PA control systems ready to go on the road.

should be considered particularly newsworthy at all, but what is interesting is that it shows another vital aspect of mounting such an enterprise as the World Student Games. For Roadstar had secured the contract to provide temporary PA systems to the 19 other venues to be used for the Games, that is those other than the two major establishments we have already covered. Events as diverse as basketball, gymnastics, water polo, hockey and tennis were involved, requiring 23 separate installations. Roadstar was formed ten years ago by Robin Stillings, who had previously made the mistake of acquiring a slice of a band in exchange for a new PA and when the band split up before he had paid for the gear, what else could he do?

Nowadays, with the help of Peter Swaine who is the general manager and Rod Short who is responsible for the technical aspects of installations, they rent out big systems for touring bands such as Sinead O'Connor, New Kids on the Block and The Eurythmics. They also did the stage monitoring for the Mandela concert at Wembley. Their 'Mirror' speaker system, so called because they claim that it will faithfully reflect the original sound without colourisation, is largely based on JBL components in their own-designed enclosures. They are working on smaller systems for permanent installation. It was decided, in the case of the WSG, that a standard control rack was required in each



The evidence - remnants from Road Radio's WSG effort.

venue to simplify the problem of officials moving from venue to venue. These were based on the Citronic mixer/pre-amp, a Teac V270C cassette for background music, a Shure SM58 microphone with AKG table mic-stand and push button talk switch. In this way a single button-press was all that was required to gain access to the system which, it was hoped, would deal with the problem of transitory officials using it. Most of the speakers used were Roadstar 'Mirror' system active enclosures, either 1X15" or 2X15"s, for which the amplifiers were Amcron, while 100-volt line speakers, which were also designed in-house because "we did not like any of the ones we were offered," were University PA430 horns powered by Citronic. Together with 2000m of 2.5 and 500m of 1.5 mains, 1500m of mic. cable and 500M 2.5, 4-core signal cable, assorted crossovers and a couple of Samson radio mics, and a cast of 'thousands' to install and support the systems, that was about it.

Dealing with so many different operators was never going to be an easy task, despite all Roadstar's efforts at simplification. So it was no surprise, when I called Peter Swaine later to enquire how it was all going, to be told tongue-in-cheek, "I never knew before, that so many things could apparently go wrong with a single button! But we're coping."

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FILM AND TELEVISION PRODUCTION '91

Ian Lake goes to Olympia 2 for BKSTS

Amidst all the gloom, doom and despondency surrounding the British film industry (and indeed the broadcast industry currently seems to be doing its level best to keep it company), Film & Television Production '91 was a very buoyant exhibition. The event was organised on behalf of the BKSTS (the British Kinematograph Sound and Television Society) by Philbeach Events, those well-known purveyors of international exhibitions at everybody's favourite venue, Olympia 2, running from 9-12th July, and following the now familiar format of an exhibition in conjunction with a conference.

Unlike the PLASA Light and Sound Show, this exhibition occupies only one floor of the venue, the rest being occupied at first by Health & Fitness, (much to the amusement of those 'lucky' souls involved with the load-in) and latterly by the Music Fair. Incidentally, for those who dislike the noise factor at the Light and Sound Show, believe me when I say that rationally structured music, albeit at 120dB is infinitely preferable to the cacophony produced whilst dozens of pianos are being simultaneously tuned - the cat's revenge?

The attendance for this year's event was 3,150 visitors over the three days; a reported increase of some 10% over the last show, with a similar increase in the number of delegates to 419 for the conference. Although over 50% of these delegates were from overseas, only 10% of visitors to the show were from abroad. Most of the people I talked to reported that business was brisk and made reference to the fact that it was quality, not quantity of visitors that would make the show a worthwhile fixture in future diaries.

Of the 75 exhibitors at BKSTS, only eight were PLASA members and it's to those eight that most of this show review will be dedicated. However, several of the industry heavyweights were in attendance, including Philips Lighting, who although not members, certainly had enough PLASA-type equipment on their stand to almost be considered as such. Their main thrust for this Show was the MSR source and its almost universal acceptance amongst the world's major

lighting manufacturers. Product on the stand came from such luminaires (pardon the pun!) as Arri, Coemar, DeSisti, Sachtler, Strand and Teatro as well as Philips themselves who were showing their new Arena floodlight. This has been designed for the illumination of medium to large stadia where colour television recording of events is required and is based around an MHD 1800W source, this being a long life (approx 400 hrs) HMI-type lamp. These units are available in angles between 3 and 15 degrees and have already been used to illuminate St. Paul's dome and orb. The stand was ably staffed by Bob Ure and Martin (hot-air) Christidis (a reference to his ballooning exploits rather than his sales pitch).

The other major lamps manufacturer in attendance was the new GE Thorn combine, proudly announcing to the world the amalgamation of these two leading companies. Essentially, both GE and Thorn lay claim to the tradition of Edison and Swan, who independently demonstrated their new invention of the electric incandescent lamp in 1879. In 1991, the two companies met up again to serve users into the 21st century. The stand was staffed by the two Clives (Salmon and Connor) from Thorn, assisted by staff from GE in Daventry including Elizabeth van der Feltz.

DeSisti reported a good show, having taken several orders as well as providing a forum to announce their future involvement with Lowell and Dedo-Light. The new products on display included the Tiziano 200W MSR battery-powered hand-lamp, and a prototype Rembrandt 4kW MSR fresnel spotlight, fresh from its passage from Italy as hand-baggage, which must attest somewhat to its light weight. This lamp was largely un-painted to show the extensive use of stainless steel in the construction of their luminaires and is reported to be significantly lighter than a conventional 4k. Staffing the stand were Bill Smillie, Andy Temple and the two double-barrels of Martin Oakes-Monger and John Reay-Young.

Arri were there in force although the camera part of the operation seemed fairly well

disguised as a Rank Taylor-Hobson stand. However, all the interesting bits were on the main stand, including the whole of the existing 'compact' range of MSR fresnels from 575W through to 4kW. All of these units are housed in the equivalent 'junior' lamp houses, making them significantly smaller and lighter than their conventional HMI counterparts and they are all available as conventional (wire-wound) or flicker-free systems. I have also been asked by Arri to remind you gentle reader, that they are looking for a suitable home for one of their new Mirage control systems at the Light and Sound Show. You will need to be a genuine arts organisation in need of a new lighting control board to enter, and the draw will take place at the show at 1pm on the 11th of September on the Arri stand. Please bear in mind that the winner MUST be there to collect the prize or it will be re-drawn.

Obviously, Mirage was fairly prominently displayed on the stand at this show, as indeed were two new portable lighting kits. The first was a 12V fluorescent 'car' kit from an American company Kino-Flo. These sources seem to develop the Videssence approach, by offering tubes capable of generating nominal 3200k or 5600k to balance tungsten or daylight. The fixtures are supported on a heavy gauge replaceable aluminium wire, which can be bent into the appropriate position with ease. The other kit is known as the 'David' lighting kit and comes from an 'undisclosed' German manufacturer. These lamps bear an uncanny resemblance to another German manufacturer's product (who will remain nameless else I be accused of being bitchy) and are basically available as a multi-head kit with both mains and battery powered lampheads. The Arri stand was staffed by Richard Maskell, Adrian Hicks and a perturbed-looking Nick Shapley, who we now gather has married his butler. Congratulations to Nick and Joanne.

Strand had taken their usual large plot, complete with small 'hostility' booth (excuse the Woganism) in the centre. Displayed on the stand were the new Sirio Bambino range up to 2.5kW



Strand's Tony Dille explains where the light comes out.



DeSisti's Bill Smillie (left) and Andy Temple (right) with Mark Holmes of Holmes Photographic.



Martin Christidis presented Philips Lighting.



Edward Orr of Optex: "If you tickle it under here, it lights up."



Arri's Nick Shapley and Adrian Hicks.

with a 4kW on the Philips stand. Essentially these are smaller Sirio HMI fresnel spotlights designed to take advantage of the MSR source. Additionally, the re-worked standard Sirios were also displayed, capable of taking both a conventional HMI source as well as the MSR lamp (but not simultaneously!) In a supporting role were the new compact Electronic Ballast range, available in powers from 575W through to 6kW. These units are switchable between flicker-free and standard (24 fps) operation and seem significantly smaller and lighter than anything the company has produced previously. The 2.5kW 'Super Quasar' first seen at IBC/Photokina last year, was present once again. Based on a 2.5kW MSR lamp, not a Cine-Par source, this open-faced lamp allows a degree of focusing, but beam shaping is still achieved with drop-in lenses as for the standard Quasar. Finally, BKSTS was the first UK showing of the split stirrup Iris top-lights. Principally for use on high cycloramas, this luminaire allows better blending of light across the cyc.

The stand, as would be expected from such a large organisation, was staffed by a whole multitude of people, but the core included Tony Dille, Tom Freemantle, Richard Bunting, and on Friday, a man occasionally seen on these shores, one Andrea Molinari, with apologies to anyone I might have forgotten.

OpTex, who are relatively new members of PLASA, were showing a wide range of products as might be expected of a company who fulfil a 'ships chandler's' role for the film and television industries. Along with the vast range of lenses and lens conversions, were such favourites as Steadi-Cam in its various guises, Splash-Bags to prevent your camera getting wet when you put it in the water, the new portable micro-wave link which allowed monitoring of what the Steadi-Cam was up to, Toshiba miniature cameras (as used by your favourite Formula 1 team) and a whole host more. As far as lighting was concerned, the new range of Sachtler fresnels,

known as 'Directors' were on show. These lamps are available at present in 300/650/1000W sizes for tungsten, and 125/270/575W for HMI/MSR, with 2kW (tungsten) and 1.2 and 2.5kW (MSR) available soon. The new Netronic 575 HMI/MSR ballast was also on show taking Sachtler's flicker-free capability to 575W, with 1200W promised soon. Other new products included the OpTex 'Swartzpack', a portable 6 way, 10A/channel, dimmer pack and the answer to location soft-lighting needs, the Rifa-Lite. This collapsible soft-light works on an umbrella mechanism principle, can be erected in 30 seconds by one person, produces soft-light of an extraordinary quality, and is available in a range of sizes. The stand was staffed by Robin Thwaites, Edward Orr, Mike Perry, Geoff Chappell and yours truly when I wasn't researching this article!

The irrepressible Ralph Young of Lee Filters was much in evidence at this show, winding people up with his usual gay abandon. On the stand we were treated to an extended high temperature (HT) polycarbonate range of filters with the introduction of 15 new colours, taking the total to 40. Based on tough 60 micron material, these filters are designed to resist fading, buckling and physical breakdown under the most rigorous of conditions. Additional support is to be given to lighting designers/directors by way of a new range of swatch books. Lee's research has shown that different professional groups make differing demands on swatch books, so a new series of these handy devices has been introduced, each presenting information in a particular format. Currently available are: the Chromatic Edition, the Numeric Edition, the Cinematographer's Edition, the Master Edition, and the Pocket Edition. Hopefully everybody will now be able to find the information in a format that suits them.

As a bit of healthy competition for Lee, Rosco were in attendance, developing their 'Jungle Book' theme by way of a highly-coloured backdrop to the stand. Three new colours in the

Supergel range were launched including a Light Tough Silk. Also on show were Rosco's range of video paints which include the only officially approved Ultimatte paint on the market. Other colours include chroma blue and television blacks and whites. Incidentally, they can also supply cyclorama cloths in all the standard colours, or indeed with their paint frame in essentially any colour you want. If you went on to the stand then you would have walked on Roscofloor Tiles. This is a very versa-tile floor covering for either temporary or permanent fixing. The stand was staffed by Jane Frye, Robert Achlimbari and Joanne Butler.

A newcomer to the BKSTS show was Marquee Audio, who reported a useful show, largely 'engineering-led' - given the technical competence of the visitors to their stand. On show were the Adams-Smith machines including audio editing, tape synchronisers and time code processing machines. Additionally, a bit of a splash was given to the EMO range of studio accessories including mic splitters and combiners, mains power sequencers and distribution, and graphic equalisation. Finally, the new Soundcraft Delta AVE desk was available, an audio follow video editing mixer which generated a certain amount of interest. The stand was staffed by John Didlock of Marquee, David Godsmark of Adams-Smith and Mike Reay of EMO, with assistance from others including Spencer Brooks.

Film & Television Production '91 might have been presented against a background of gloom as originally stated, indeed one of the press handouts was subtitled 'UK Film Industry In State of Collapse'. This was not substantiated by the attendance and interest in the show which was very encouraging and hopefully indicates a ray of optimism for this beleaguered industry. However, the increased emphasis on television production cannot be ignored: is the future of this once great British business now almost entirely in the hands of the major broadcasters? Only time will tell.

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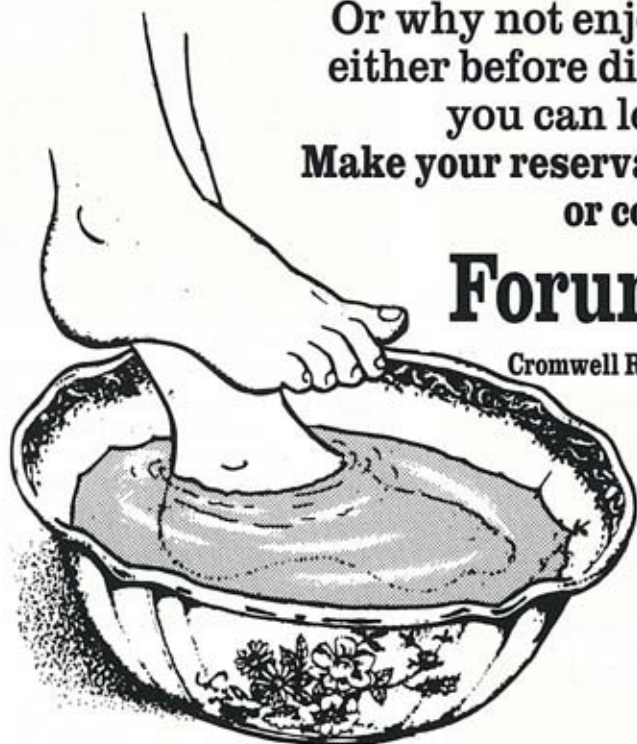
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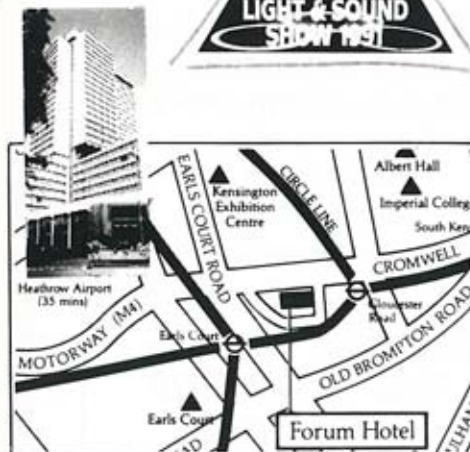
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MORE FACES AT LIGHT+SOUND ASIA '91 (see pages 16 & 17)



Freddy Lloyd (centre) with Sirius controls on the Zero 88 stand.



A PLASA trio of Tony Kingsley (Avitec), Kevin Hopcroft (NJD) and Colin Whittaker (Celco).



PLASA Chairman Kevin Hopcroft (right) with Ken Walker of SCIF and (below) with Florian von Hofen of VPLT, the German trade association and fellow member of EFET.



Matthew Tonks (left) and Derek Gilbert (third from left) of Glantre Engineering with Paul and Pam Chappell from Australia. Paul ran the successful show at Melbourne reported in our July issue and is a former Glantre employee.



Avitec's Paul Dodd (centre) with their new Lite Mover and Ardan Pedell (left) and Mike Thomsett (right) of Leisure Works.



Tony Leedham of Inova UK, Harry Koch of SLE, Mark Brown and John Jeffcoat of Laser Grafix and Ian Stott of Inova Singapore.



Dick Carrier of Le Maitre (left) with Graham Norman on the stand of Light Processor.

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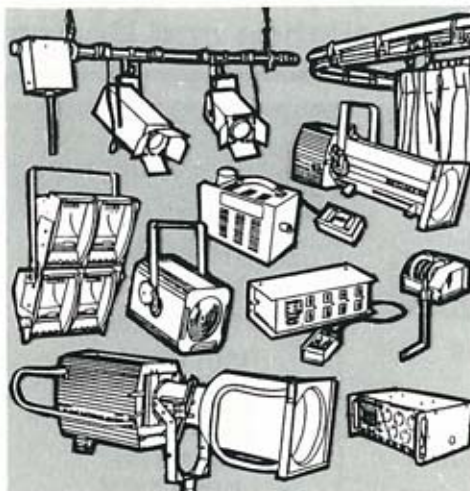
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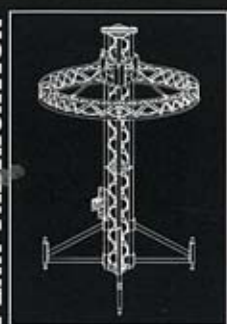
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The Forum of Private Business on the relationship between the banks and small businesses

PLASA acting chief executive John Offord recently met with Gerry Dowds, national field manager of the Forum of Private Business, a vociferous lobby group for small firms. It is hoped that links will be established between the two groups, to ensure a secure future for the industry. To get things moving L+SI offered FPB this Viewpoint platform to discuss one of its most topical campaigns – banks and small businesses.

You only had to open a national newspaper during June and July to realise that relations between banks and small businesses had sunk to an all-time low.

The Chancellor's solution – eight weeks in the making – was to 'put it to the banks' to consider introducing their own codes of conduct, based on a few of his own loosely-worded suggestions. The impact was further dented when he gave assurances from the bank chairmen that these were already existing bank policy anyway!

It is not surprising, therefore, that the 18,000 member Forum of Private Business, whose intensive research on the small business/bank relationship spans five years, places little faith in the Chancellor's intervention.

FPB research proves that the Chancellor's enquiry, sparked as it was by complaints, media hostility and anecdotal evidence, went off on the wrong tangent, and missed the fundamental problems that plague the relationship.

These have been identified in several FPB/Nottingham University reports as:

- Unexplained bank charges deducted at source
- Insufficient information when loans declined
- Interest over base margins inappropriate to risk
- Excessive levels of security
- The cost and availability of finance

But instead of pursuing this academically-validated research, the Chancellor embarked on a wild goose chase, on the pretext of catching the banks robbing their customers of base rate reductions by stepping up their own lending rates.

FPB research has proved that such behaviour was a small (but admittedly painful) part of the problem, with 90% of lending linked to base rate, whilst bank-imposed lending constraints – the reduction/removal or refusal of overdraft facilities – were the real killers. The bank's unfair bargaining power has traditionally allowed them to be judge, jury and executioner in such matters. But the FPB, led by its unique member-voting system, believes it has a way to redress the balance and boost small business confidence without damaging bank profitability. It has

proposed a package of solutions including:

- Invoicing for charges
- Reduced interest rates for the financially responsible
- Reduced collateral for the financially responsible
- Regular discussion with bank to ensure its most cost-effective use for both parties

These improvements would be underpinned by a written contract, setting out clearly the framework for future relations. FPB has discussed this in detail with the banks, the Bank of England, the Treasury and other Government departments. Midland Bank has already taken up the concept in principle with its Midland Small Business Charter, and FPB continues to hold constructive talks with the other leading banks. It has also called for the creation of an effective Small Business Ombudsman to restore confidence in the relationship.

The FPB has no faith in Codes of Practice, citing the case of 'Prompt Payment Please' the Government's voluntary code, which, since its introduction in 1986, has seen late payment of debt escalate from an average of 75 days to 81.

The need for better banking relations is demonstrated by the FPB's quarterly oral survey which reveals 42% of businesses reporting a

tougher attitude from their banks. One in five had experienced reduction/removal of overdraft or had had a request for extra borrowing denied. With 27% of businesses growing in spite of recession, the need for small firms to have their banks working with them, and not against them, is overwhelming. At present, the banks hold all the aces including the threat of withdrawing support at any time. This can make small businesses very fearful, afraid to seek a better deal, and unwilling to expand because the stakes are perceived as too high.

The Chancellor's code of conduct cannot remove this unfair bargaining power, but a written contract would even up the odds. It would operate on the same principle as points on a driving licence except that, as well as 'penalty points' for infringements there would be 'bonus points' for exemplary behaviour. A responsible owner would be able to use a good track record as a lever for improved terms or as a recommendation when changing banks. The scheme would require fewer bankers rather than more, and could be fitted easily into existing computer systems. Everyone needs their bank at some stage in order to grow. A flawed banking relationship holds back growth which is what the economy needs right now to get the country out of recession.

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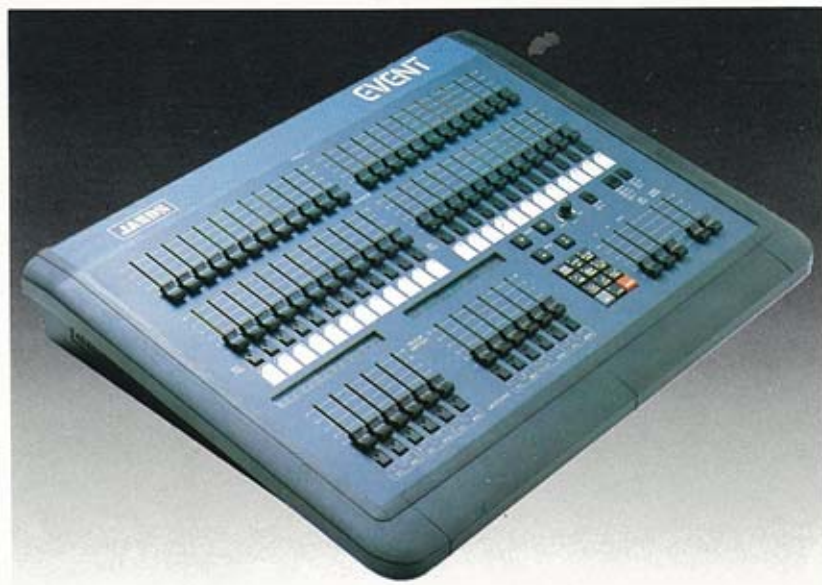
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