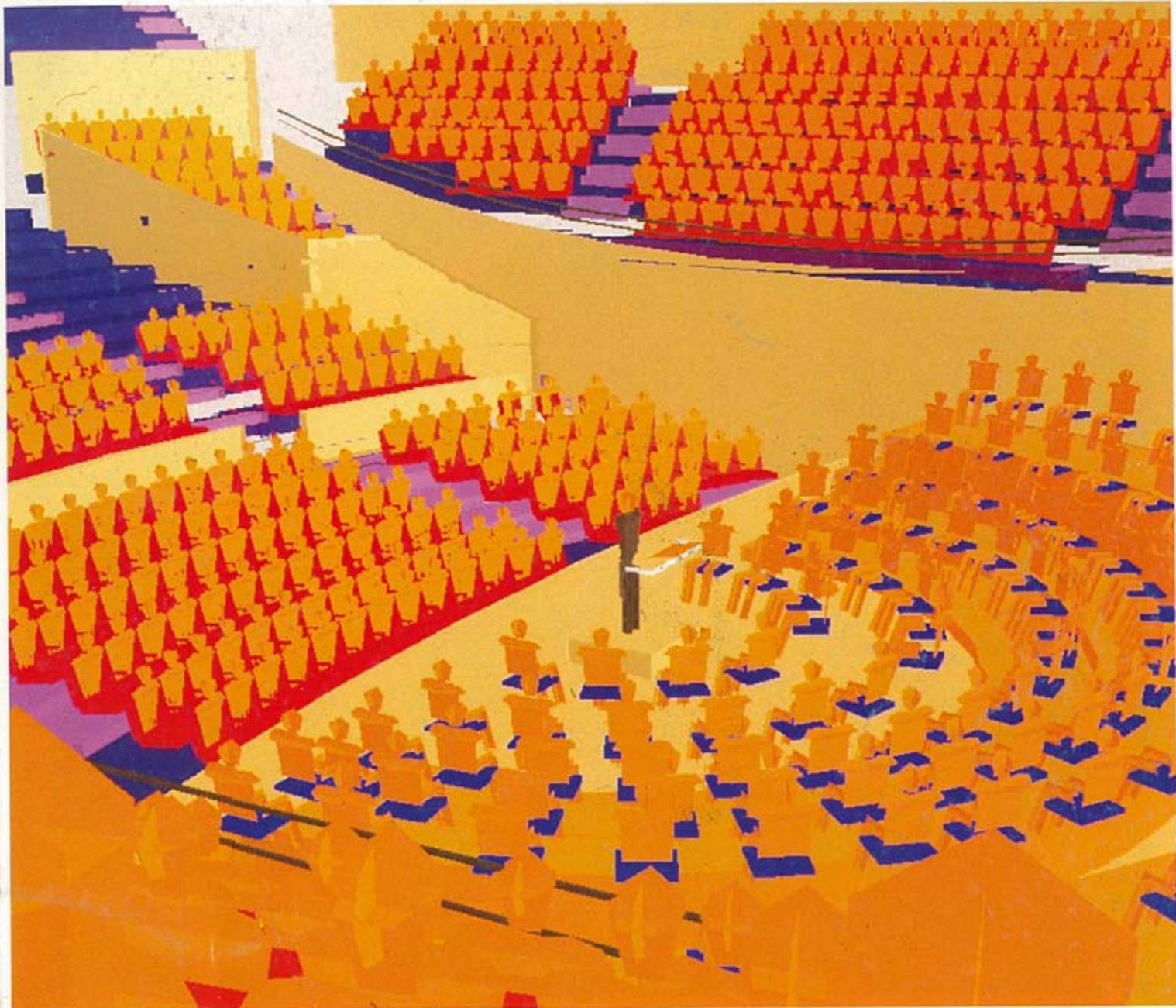


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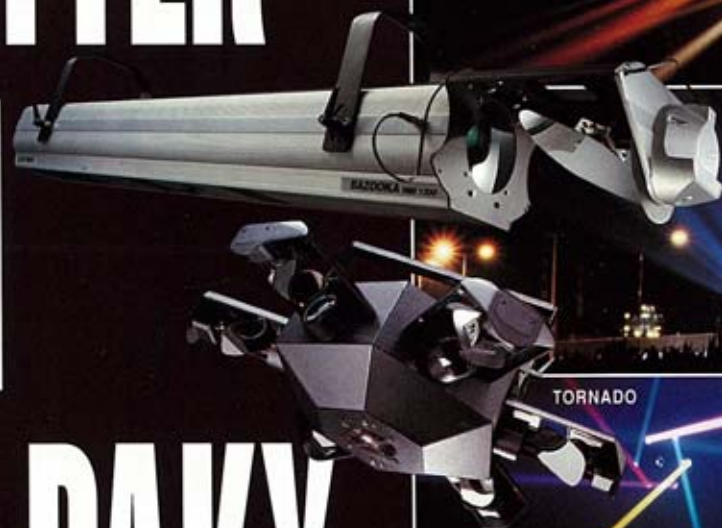
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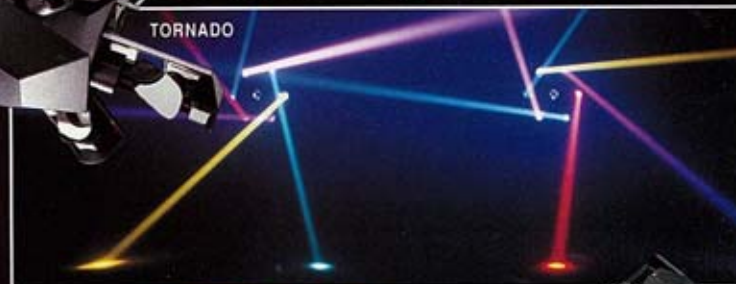
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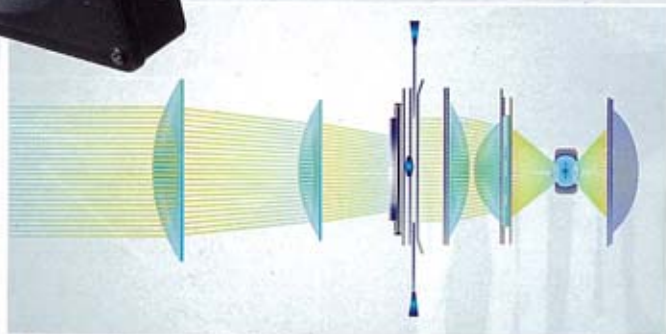
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LIGHTING+ SOUND *International*

NOVEMBER 1992

6 News In Lighting+ Sound International

Full round-up of all the sights and sounds from the industry

28 Book Review

Ian Lake reviews the latest batch of Autumn releases

30 Formula Sound

John Offord charts the rise and rise of a small company who put quality into club and discotheque sound control and who sends its range of professional audio products world-wide to venues of all kind

35 35 Years of Theatre Projects



L+SI Special Feature marking the achievements of 35 years of technical expertise and innovation in performance venues world-wide

55 The National Youth Theatre

Robert Halliday looks at the NYT's training structure

57 Kiss of the Spider Woman

John Offord researches the basic technical background and headlines a London-New York collaboration on the Showtrack automatic scenic control system

61 Around the World Spectacular

Imagination pull out all the stops at the Royal Albert Hall

63 Letters

64 On Tour

Catriona Forcer on the Red Hot Chili Peppers and Mary Webb on Torvill and Dean

67 Technical Book Service

Details of the latest books on offer as part of PLASA's Technical Book Service, plus order form

72 PLASA Members

75 Directory of Suppliers and Services

80 International Directory

82 Viewpoint

Robert Halliday asks 'why waste good technology.'

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

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Associations Get Together

A PLASA inter-association working group initiative saw the first meeting of industry association leaders on October 12th. It was held at the Guildhall School of Music and Drama at the Barbican Centre in London, where 12 bodies were represented.

The meeting aimed to foster better understanding of each associations' activities and possibly promote causes more effectively through speaking as a combined force. Three basic areas of action were considered: discussion on training which AETTI would head, a Parliamentary pressure and industry lobby group led by the ABTT, and a trade group. The latter would be organised by PLASA and the idea for this group is to consider the promotion of communication and the flow of business contacts between memberships of the respective associations and to ensure that no opportunities are missed through non-communication.

Associations present in addition those mentioned above included APRS, SCIF, ABAC (Association of British Audio Consultants), ALD, STLD, STC (Society of Theatre Consultants), SBTD (Society of British Theatre Directors), SWET (Society of West End Theatre and LIF (Lighting Industries Federation). The meeting was chaired by John Offord, chief executive of PLASA.

Science and Technology MP Invited

Strand Lighting has invited Dr. L. G. Moonie, member of parliament for the Kirkcaldy constituency in Scotland and Labour Party spokesman on Science and Technology, to present The Certificate of Registration for the BSI Register of Firms of Assessed capability. Strand's Kirkcaldy factory was established in the constituency in 1968 and has now successfully demonstrated compliance with the BS5750 standard.

Strand Lighting's registration is in the 'Standard Industrial Classification' and is cited for the 'Design and Manufacture of TV Studio, Theatre and Architectural Lighting and Control Equipment.' The scope of the registration also extends to the company's West London location at Isleworth.

ABTT Appointment

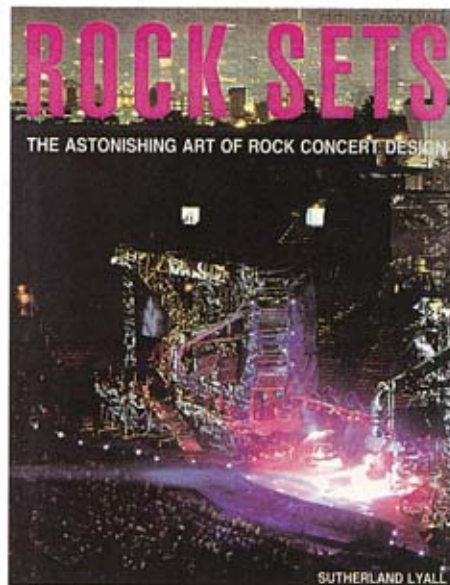
Geoffrey Joyce has been appointed as development manager for the Association of British Theatre Technicians (ABTT). "The appointment is short-term," explained Joyce, "but my intention is to point the Association in a direction which will take it forward for the next five years."

Early plans announced include discussion on Portable Appliance Testing, the setting up of an accident report 'Bureau & Safety Awareness', and the publication of Codes of Practice on Flying and Sound. He plans a tour of the regions to make contact with members, and the first meeting will be held at the Octagon Theatre in Bolton on November 12th.

ABTT chairman John Faulkner told L+SI: "Geoff Joyce is one of the most experienced and able technicians of his generation. We expect, with his assistance, to build on the existing reputation of ABTT, to develop services for the industry and for members, to meet the growing demands of new regulations and to influence legislation which affects technical aspects of the Industry."



Geoff Joyce combines a professional training in electrical engineering with a long experience of technical and managerial work in theatres and organisations ranging from the Leicester Phoenix, through the Manchester University Drama Department and the Royal Exchange Theatre, where he was the first chief electrician, to the overall technical management of Raymond Slater's Manchester Theatres group. He has also been a member of the Arts Council Drama Panel. He is now a freelance specialising in lighting design and production, management and will be working with ABTT up to the 1993 Trade Show next April.



Seminal Work on Rock Sets

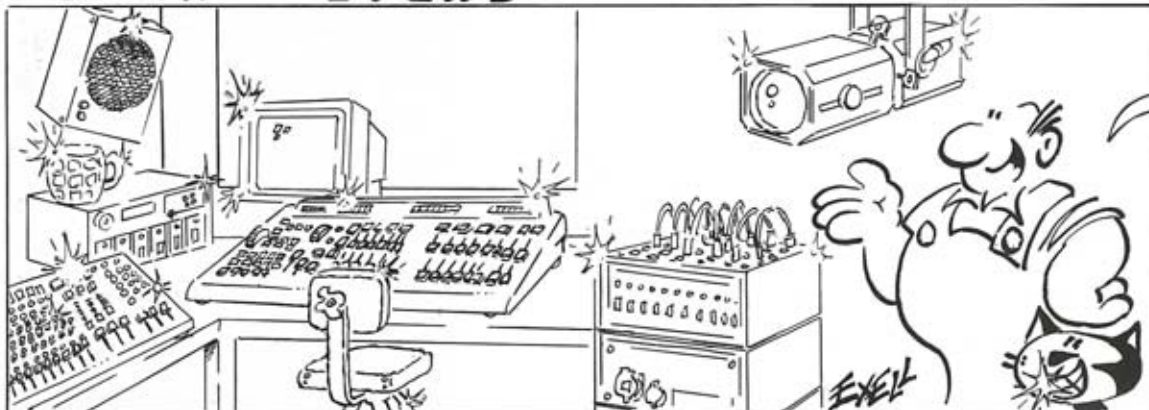
Rock Sets, sub-titled 'The Astonishing Art of Rock Concert Design - the Works of Fisher Park' a publication that is bound to become a point of historical reference although the work portrayed only spans the past 15 years. It surveys the creations of architect Mark Fisher and engineer Jonathan Park who are acknowledged masters of the difficult scale and complexity of big stadium shows. The book is by Sutherland Lyall and published by Thames and Hudson and includes technical plans and no less than 145 colour illustrations. It is reviewed this month on page 29.

Light & Sound Show 93

PLASA's organisers for their annual Light & Sound Show, Philbeach Events Ltd, have announced that over 60 per cent of all available stand space has already been contracted for the 1993 event which takes place at Earls Court 2 in London from 12-15 September.

For details of remaining sites potential exhibitors are advised to contact Caroline Clark on 071-370 8215 as soon as possible. Publicity and stand information will also be available from show manager James Brooks-Ward on the PLASA stand at LDI at Dallas, 20-22 November.

Cartoon Action News



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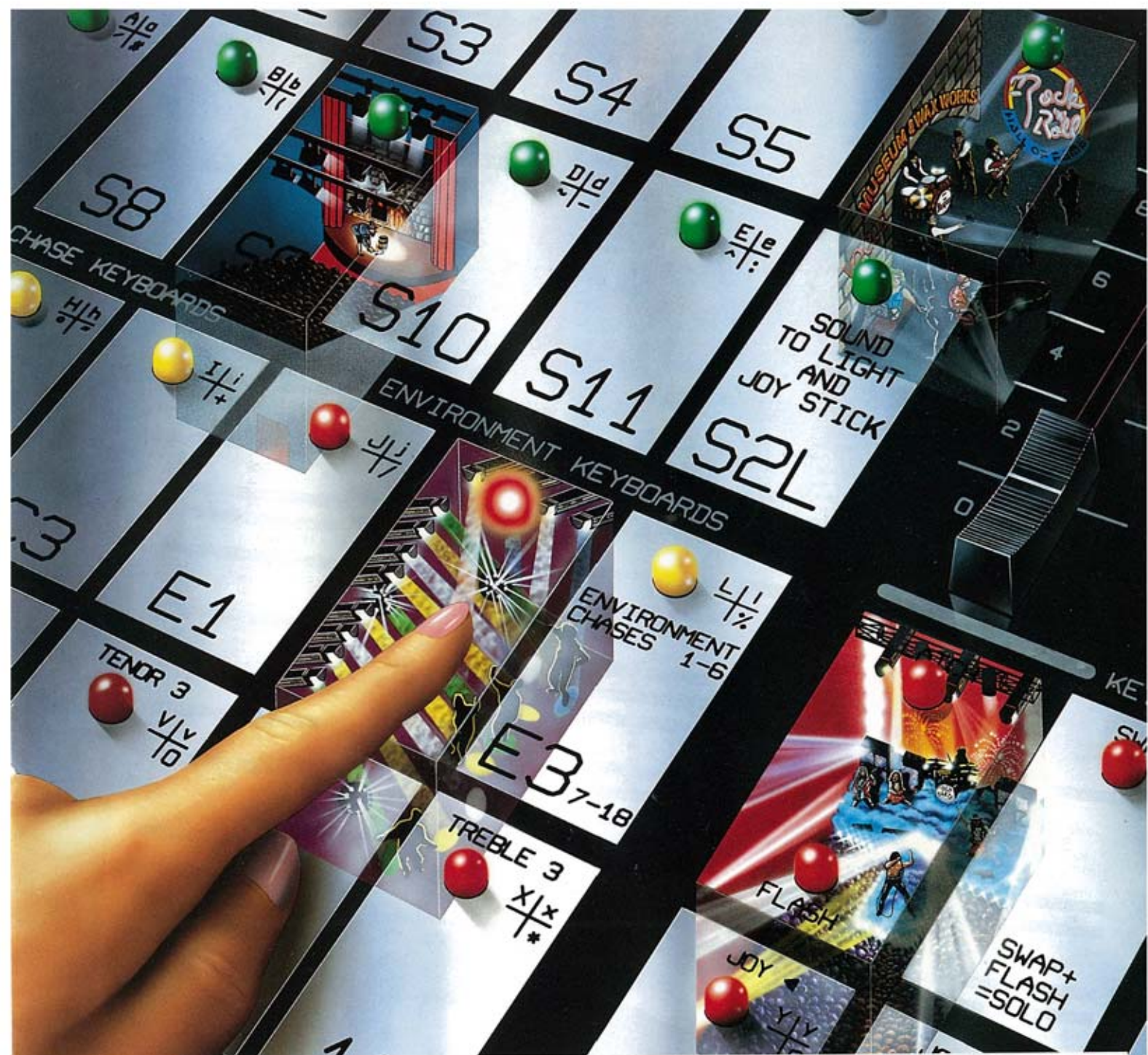
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LEE FILTERS		No.	Product description	Clo	Sim	Com
176		602	Bastard Amber			
151		603	Warm Rose	212		162 159 - 153
154		604	No Color Straw		103	
159		605	Pale Gold	206		
		608	Warm Straw	HT010	147	237 - 248
		609	Straw		134	
		610	Light Flame		147	
		611	Rose Amber		105	158
		612	Golden Amber	134	147	
		613	Light Amber			
		614	Flame	105	158	
		615	Deep Straw	HT019		
		618	Orange	113		
		619	Fire	106		
		620	Deep Salmon		153	
		621	Light Red		192	
		624	Pink	247		193 x 2
		625	Pale Rose Pink			170 - 136
		627	Rose Pink			
		632	Salmon	HT052		
		638	Light Rose Purple	180		
		641	Lavender			HT058 x 2
		644	Deep Lilac		117	
		645	Indigo			
		647	Pale Blue	202		
		648	No Color Blue			HT063
		649	Booster Blue		201	
		649	Light Blue	174		
		650	Light Steel Blue			117 - 203
		651	Light Steel Blue			136 - 174
		652	Azure Blue			
		653	Zephyr Blue	196	174	144 x 2
		654	Daylight Blue			
		655	Steel Blue			
		656	Steel Blue	HT079		
		657	Primary Blue	118		
		658	Medium Green Blue			132
		659	Green Blue			195
		661	Medium Blue			245
		661	Pale Yellow Green			
		669	Light Green	244		122 - 218
		671	Moss Green			
		672	Blue Green	219		
		676	Light Grey	209		
		680	Chocolate		156	
		682	Chocolate			

CINEMOID		No.	Product description	Clo	Sim	Com
1	Yellow			101	102	
2	Light Amber				HT013	
3	Straw				HT015	
4	Med Amber				179, 105	
					158	
					HT022	
5	Orange			106	182	
					107	
6	Primary Red				109	
					110	
7	Light Rose				192	
9	Light Salmon				131	
10	Middle Rose				148	128 x 2
11	Dark Pink					
12	Deep Rose				HT027, HT046	
				113	HT026	
13	Magenta			115	116	
14	Ruby				117	
15	Peacock Blue				174	
16	Blue Green				144	
17	Steel Blue				HT079, 118, 163	
				119	195	120 - 155
18	Light Blue					
19	Dark Blue					
20	Deep Blue					
				121		
				122		
21	Pea Green					
22	Moss Green					
23	Light Green					
24	Dark Green					
25	Purple					
26	Mauve					
27	Smokey Pink					
28	Medium Blue					
29	Deep Amber					
30	Golden Amber					
31	Deep Golden Amr.					
32	Pale Lavender					
33	Pale Green					
34	Primary Green					
35	Pale Blue					
36	Bright Blue					
37	Pale Violet					
38	Pale Navy Bl.					
39	Daylight					
40	Chrome Yellow					
41	Apricot					
42	Bright Rose					
43	Canary					
44	Pale Yellow					
45	Gold Tint					
46	Pale Gold					
47	Pale Salmon					
48	Pale Rose					
49	Pale Chocolate					
50	Pink					
51	Deep Orange					
52	Pale Grey					
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GAM COLOR		No.	Product description	Clo	Sim	Com
110	Dark Rose				127	
120	Bright Pink				128	
140	Dark Magenta					136 - 128
155	Light Pink				109	
160	Chorus Pink				110	
170	Dark Flesh Pink				192	111 x 2
180	Cherry				110	
190	Cold Pink					
195	Nymph Pink				107	
						157, 193
220	Pink Magenta				148	HT046, 113
						156 x 2
235	Pink Red				106	HT026
245	Light Red					182 - 106
						HT027
250	Medium Red XT					153 x 2
260	Red Orange				182	
270	Red Orange				HT019	
280	Fire Red					135
290	Fire Orange					151, 176, 155
340	Light Bastard Amber				162	
345	Deep Amber					158
350	Dark Amber					105
						HT015, HT020, 179
365	Warm Straw					206
						134
375	Flame				147	223 - 205
385	Light Amber					104
						102
						159
420	Medium Amber					102
440	Very Light Straw					HT010
460	Mellow Yellow					101
480	Medium Yellow					212
						245
						138
510	No Color Straw					
520	New Straw					
540	Pale Green				121	139
570	Light Green Yellow					139
650	Grass Green					
655	Rich Green				122	115, 116
660	Med. Green					117
						201 - 213
720	Light Steel Blue					
730	Azure Blue				118	163
740	Off Blue					118
						143
750	Nile Blue					117 x 2
760	Aqua Blue					117 x 2
770	Christel Blue					202 - 203
780	Shark Blue					
790	Electric Blue					132
						165
810	Moon Blue					171
815	Moody Blue					
820						
850						
859						
899						
905						
910						
920	Pale Lavender					
930	Real Lavender					
940	Light Purple					
970	Special Lavender					
990	Dark Lavender					
995	Orchid					

LEE FILTERS		No.	Product description	Clo	Sim	Com
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157, 193						
148						
HT046, 113						
156 x 2						
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HT026						
182 - 106						
HT027						
153 x 2						
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223 - 205						
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159						
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HT010						
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212						
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115, 116						
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201 - 213						
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143						
117 x 2						
117 x 2						
202 - 203						
132						
165						
171						
11 - 248						
136						

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Sim: Similar - Lee	
Com: Com - Lee	
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CP Norway for Clay Paky Exclusive

Clay Paky of Italy has announced the formation of CP Norway AS as exclusive distributor for the country. "The agreement with CP Norway consolidates the position of our company in the total Scandinavian market," Clay Paky's Pio Nahum told L+SI. "CP Sweden operating from Stockholm is part of the same group."

The company is operating from headquarters at Bergen on Norway's west coast but also has a commercial office in Oslo. Eric Bohman is managing director and Arne Grønndal sales director. There is also a rental arm, CP Rental AS, which operates across Scandinavia.

The operation is offering installation and design support (backed up by CP Design), technical training courses, programming courses and a technical service.

Wally Russell Dies



Wally Russell (left) with Richard Pilbrow.

Wally Russell, head of the Los Angeles office of Theatre Projects Consultants, died unexpectedly on Friday October 30th after a very brief illness. Wally was also a director of Vari-Lite Inc of Dallas and past president of the TPC US company and of Strand Lighting Inc.

His professional career saw him move from technical director of the Canadian Opera Company and the National Ballet of Canada where he later became general manager through to his award of the Centennial Medal for his consulting work on Canada's National Arts Centre in Ottawa.

In 1975 he moved to the United States upon his appointment as president of Strand Lighting Inc and vice president of Rank Industries. Six years later he joined Theatre Projects and steered the company through such projects as the new theatres for Whittier College and the City of Fairfield and the Escondido and Cerritos Arts centres in California and the Portland Performing Arts Center in Oregon. He was responsible for the preliminary design phases for the Ballet Opera House in Toronto, and in 1991 he completed the first phase of rebuilding and equipping of the Teatro Colon in Buenos Aires, one of the world's major opera houses.

Richard Pilbrow

Le Maitre £500,000 Sale

Le Maitre (Sales) Ltd have announced that they are due to hold a grand auction sale in order to reduce their massive stocks of sound and lighting products.

A downturn in demand for these products, coupled with significant increase in export sales of Le Maitre's proprietary smoke generating products, pyrotechnics and a busy firework display schedule, has led to the decision to auction their £500,000 inventory of sound and lighting products on Friday 27th November at the company's Croydon headquarters, say Le Maitre.

"We need the space," said managing director Rick Wilson. "We manufacture smoke machines in Croydon and need to double the size of our manufacturing facility. We will continue to service our customers' needs with sound and lighting products, but we will no longer continue to hold large stocks."

The only product line affected is that of Light Processor equipment, for which Le Maitre was the sole UK source. Although Le Maitre will continue to distribute Light Processor, the brand will also be available direct from Light Processor in Greenford. Le Maitre stated that they will continue to distribute Bose, Citronic, Optikinetics, Pulsar, Technics, Beyer, Cloud, HH, Formula Sound, Pioneer, Shure, Stanton, Powerdrive, Vestax, Gemini, Lee Filters, GE Lamps and other leading brand products to their customers.

Auctioneers for the sale will be Southams (0832) 734486.

Neg Earth and Rainbows

Energetic Neg Earth Lights is in the middle of a hectic autumn schedule. A mix of equipment, crew and lighting designers has been/will be provided for a widely mixed range of 15 different tours, ranging from the die-hard rock of Toto to the camp theatricality of Erasure. Some names along the way include Gary Moore, E.L.O., Marc Almond, James Last, Status Quo and the Blues Brothers Band.

One-off events have also come Neg Earth's way and include Mike Oldfield at Edinburgh Castle, the Maria Callas Tribute in Athens (both designed and operated by Patrick Woodroffe) and the recent Opera Spectacular at the Royal Albert Hall where Steve Nolan was lighting designer.

Camelot Rainbow colour changers have been employed by Neg Earth on several of their tours, according to a concurrent press release. Both the Gary Moore and The Quireboys tour have been lit by Ian Cameron using 5k and Par units. Vince Foster is lighting Erasure with 5k, Mole and Par units, all of which have also been used by Charlie (Cosmo) Wilson to light Emerson, Lake and Palmer.

Dave Hill has used 5k and Par units for Toto and James Last was lit by Bob Hellyer using Par size Rainbows.

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NJD Launch into Lighting Effects

A mere 25 years in the business and after establishing themselves in the area of lighting control and professional audio manufacture and distribution, NJD Electronics of Nottingham came up with a range of lighting effects units at the recent PLASA Light & Sound Show in September (pictured above) and has been overwhelmed with orders and enquiries ever since.

Sales director Kevin Hopcroft told L+SI that they have a waiting list for products already. "It's a lovely problem," he said. "We've already sent shipments to Germany, Holland and Sweden and lining up to go as we went to press were consignments to numerous other destinations. Units have already been installed in various Granada Leisure and Mansfield Brewery venues. Three principle units were launched: the IQ250 intelligent lighting system with optional controller, the 'Dancer' dual animated dichroic beam effect unit, and the 'Blitzer' dichroic flower effect.



The IQ250 was pictured in our PLASA show report (page 67, October) and houses a 250W halogen lamp with dichroic reflector, has eight dichroic colours and five gobos. It can be controlled by any standard industry desk with DMX output and multiple units may be synchronised, without the use of a controller, by linking them with a simple stereo jack to jack screened lead. No DMX termination resistors are necessary as this is done in the jack sockets as you push the plug in. "To our knowledge it's the least expensive 'robot' on the market," said Kevin Hopcroft.


The IQ-MX40 controller has been designed as an inexpensive and easy to use, pre-programmed controller specifically for the IQ250 and has 256 programs, selectable colours, gobos and sound operation facilities plus variable manual speed and nine different 'run' programs. 'Dancer' (pictured above) has two 100W halogen lamps with dichroic reflectors, eight dichroic colours and twin cooling fans. Its twin independent motorised mirrors have adjustable beam angle. It produces totally random colour generation; one second all beams will be the same colour, the next eight different coloured beams appear. 'Blitzer' houses one 100W halogen lamp and has 5 x 4 dichroic colours giving 20 beams. It has an internal microphone for beam twist sound activation and a selectable sound activated lamp flash. NJD's plans for the future include a programmable controller for the IQ250 (or anyone else's robots!) and more new lighting products to add to the range.

SIB/MAGIS 93

Companies interested in PLASA/DTI joint venture terms for exhibiting at SIB and MAGIS in Rimini in Italy next March should contact the PLASA office now for information. Deadline for completed applications is December 15. Contact at PLASA is Anna Pillow on (0323) 410335.

Philips and MSR

Philips have announced that their MSR lamp range now extends from 125W HR (Hot re-strike) through to 4000W HR with a 6000W HR, previewed at Photokina this year, in development. For full details on the Hot re-strike studio range and Cold re-strike disco range, contact Martin Christidis at Philips Lighting Ltd, 420-430 London Road, Croydon CR9 3QR. Tel: 081-665 6655.





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AVAB Light Opera

When the late John Cage wrote his *Europea* he included parts especially written for sound effects and lighting as if these technicals were members of the cast. As with all the performance parts, there is a degree of improvisation guaranteed within a set of guidelines and in the case of the lighting this is achieved through a computer programme which generates random lighting set-ups and cues, based on the principals of I-Ching.

The lamps are set uniquely for each performance and, in the case of the *Europea 5* performances at the Blackheath Concert Hall recently, the cues were provided via an AVAB Expert XP desk under the programming management of lighting director and, in this case, performer David Lovett. The lighting parts were originally designed by Cage's assistant Andrew Culver.

The AVAB Expert XP is the Scandinavian company's top of the range lighting board and was called upon, for this performance, to provide around 600 cues within a one hour time frame.

At the other end of the scale, and concurrently, a 256 channel mini Expert was running the lighting for the D'Oyly Carte Opera Company in their productions of 'Yeoman of the Guard' and 'The Mikado' at the Ipswich Regent.

Zero 88 Lighting were recently appointed AVAB's UK distributor.

Martin Mugged

Their reputation for offering some of the best deals in town on automated luminaires did not prevent Martin Professional from losing some £65,000 worth of their product in a raid on their premises near Maidstone recently.

Anyone being offered moody Martin equipment at seriously low prices should contact Ian Kirby on (0622) 790164.

Allied Pull Back

Allied Leisure, the aggressive night club group headed by Richard Carr, have cancelled their plans for a new entertainment centre in Bournemouth and at the same time, announced the closure of their recently opened discotheque in Dundee, 'The Venue'.

The club, which opened last year amidst much praise for its innovative interior and lighting design by Light Angles, which has itself also disappeared in recent weeks, was apparently not an immediate success.

Blaming the recession, Richard Carr warned that the outlook was still gloomy for his group. "Commentators say the recession is about to come to an end, however, we still see no sign of any recovery."

LSC Appointment

LSC Electronics Pty Ltd has announced its appointment as the Australasian distributor for Smoke Factory products - well known for their Skywalker and Scotty smoke machines. Local distributors are now being sought throughout Australia, New Zealand and Asia.

Limelight Switches Off

London's Limelight, established by original chain owner Peter Gatien in an old church in the Charing Cross Road, not a stone's throw from The Hippodrome, is the latest casualty of the recession.

Gatien sold his London nightspot to Premier Venues in 1988 having failed to make it pay, and now the new owners have also thrown in their hand. Administrative Receiver, Touche Ross, are seeking a buyer for the club.

Events and Happenings

Notice has been received of two hardy annuals on the exhibition calendar: **Sound 92**, organised by the Sound & Communications Industries Federation (SCIF), will take place on the 16th and 17th February at the Sandown Exhibition Centre at Sandown Park (details 0628-667633) and **APRS 93** for the professional audio and sound recording industry is scheduled for 23rd to 25th June 1993 at Olympia 2 in London (details 0734-756218).

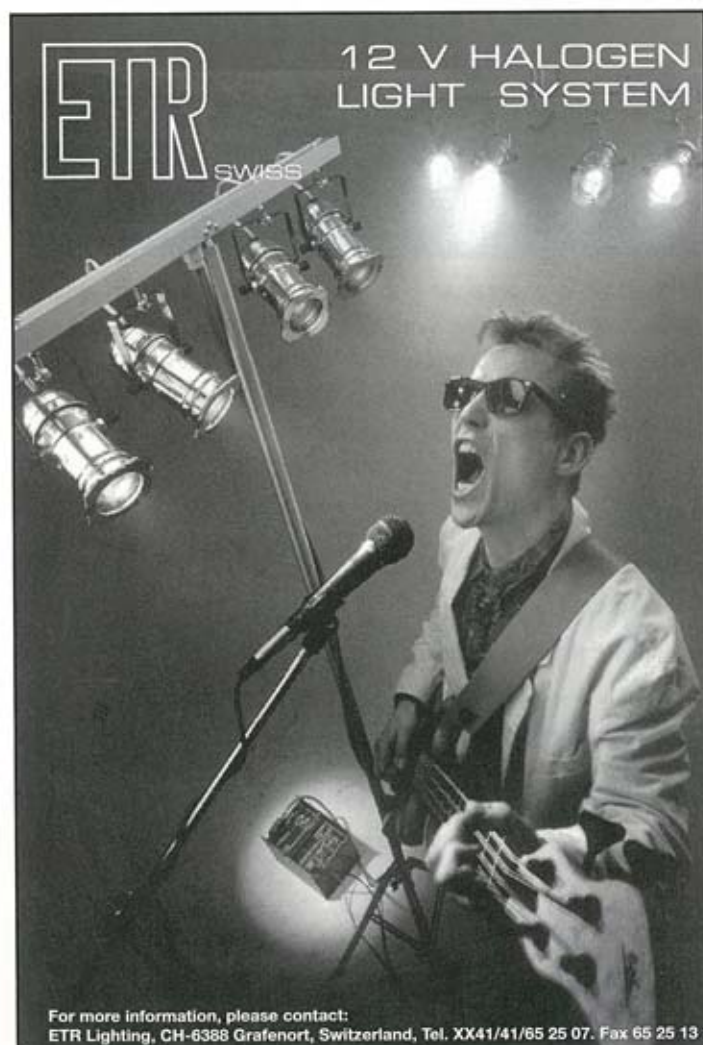
The fourth **Midi and Electronic Music Show** will move to Wembley Conference and Exhibition Centre in 1993. Dates are 23rd to 25th April (details Westminster Exhibitions on 081-549 3444). The British Council have announced **Theatre Lighting: Design and Technology** which will take place at Edinburgh and London between 1st and 14th September 1993. Director of Studies will be Francis Reid and a line-up of leading lighting designers will be involved as lecturers.

Visits for the international delegates will include the Edinburgh Festival and the 1993 PLASA Show. Details are available from The British Council at 10 Spring Gardens, London SW1A 2BN, (details 071-930 8466).

Wybron close Los Angeles office

Wybron announced at the beginning of this month that their Los Angeles sales office has closed. All inquiries should now be directed to the main office in Colorado Springs.

The move parallels the introduction of a new product family of speciality lighting control systems. Dan Martino will assume sales manager duties at the Colorado head office.



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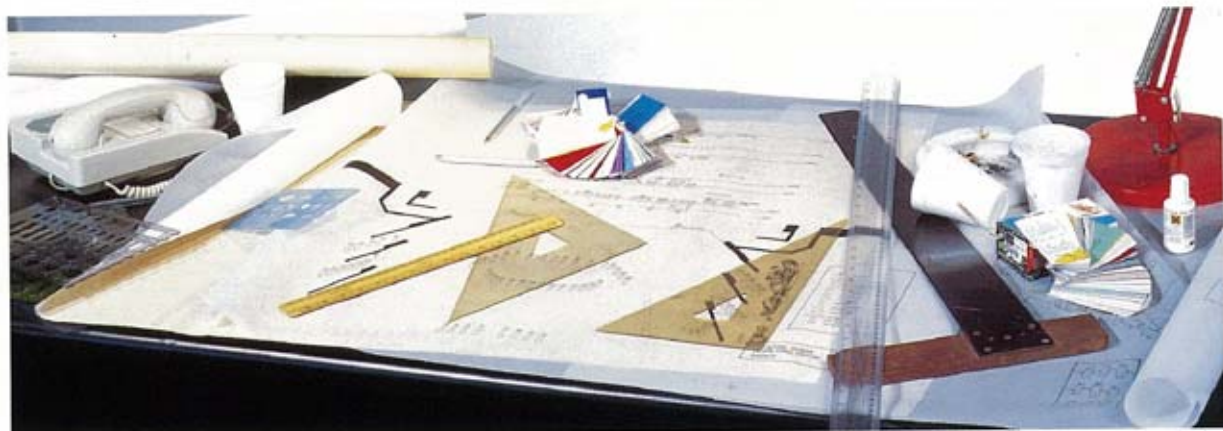


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Sachtler



Q40 at Earls Court

Few people can have failed to be aware of the celebratory TV spectacular that was staged at London's Earls Court 2 arena on October 27th.

This massive three-and-a-half hour show, produced by Michael Parker and production company Unusual Services, took place in a replica Covent Garden Opera House interior, specially built within the venue, and combined a blend of musical and military themes.

One of the major features of the show was a computerised automation system devised by Unusual Services, which enabled the two six tonne proscenium arch wings to swing aside on motorised tracks, creating a new 120 feet wide stage to accommodate the orchestra and choirs.

This, in turn, meant an enormously complex sound system designed by John Del Nero and installed by Wigwam, and an equally large lighting rig created by LD Robert Ormbo, with Theatre Projects the sole lighting contractor for the event. Production manager Ian Bagshaw told L+SI that the sheer scale of the event set it apart from any other show of the year. "It was as large a job for us as the Freddie Mercury Tribute. The physical scale was immense - it was the biggest lighting rig I've ever worked on," he explained. "There were so many elements to pull together," said Theatre Projects' Alan Thomson, "that the first complete show run was the one the Queen saw!"

The monster lighting rig, whose spec ran to eight pages, used 2,000 lamps in all, controlled by an Arri 500+ and 11 72-way Avo dimmer racks. The lamp line-up included 1,120 Parcans, 24 Molefays, 106 Silhouettes and 220 Starlette 2k fresnels.

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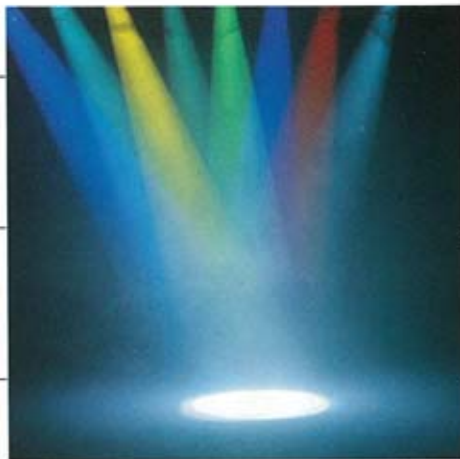
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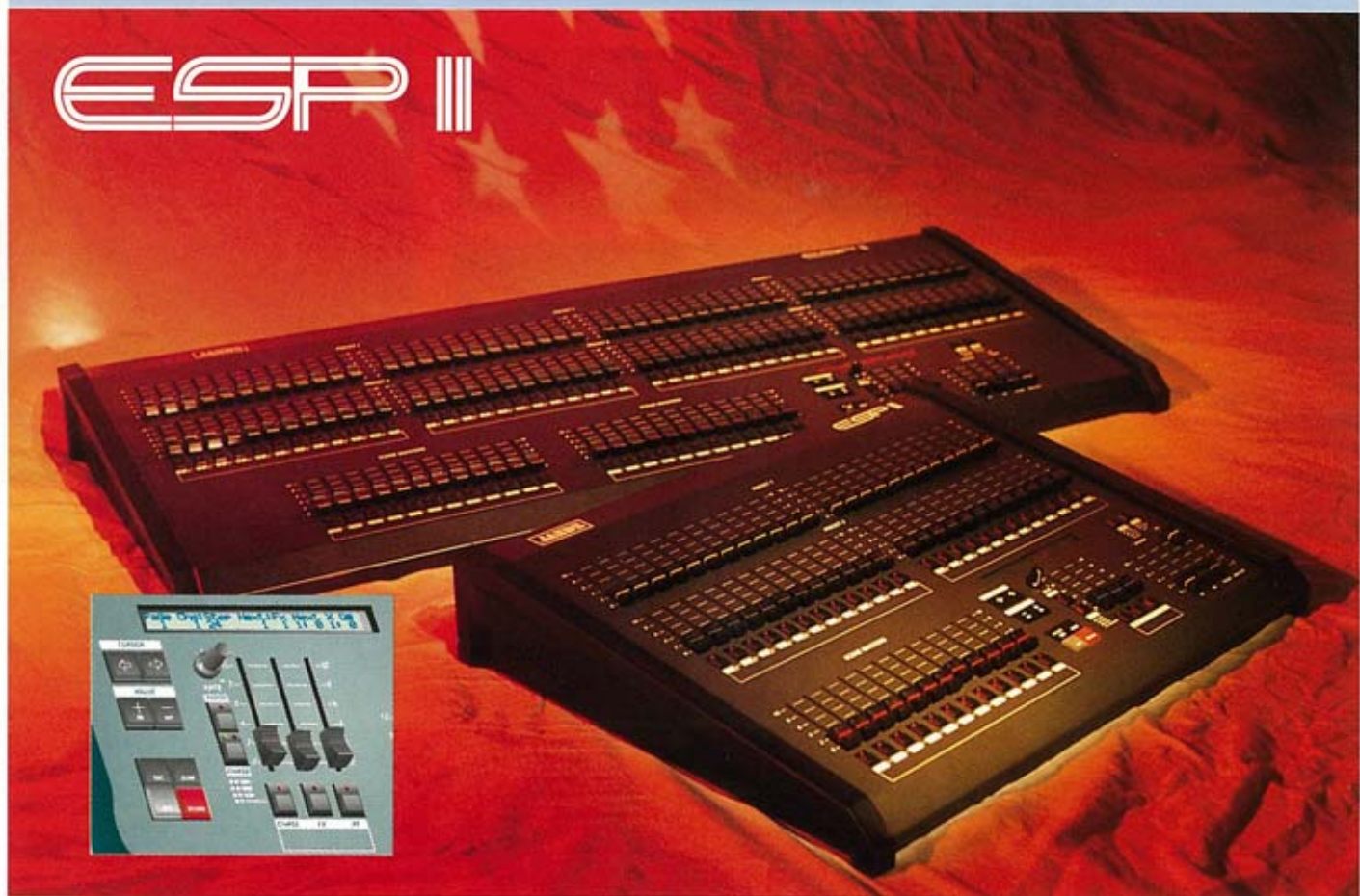
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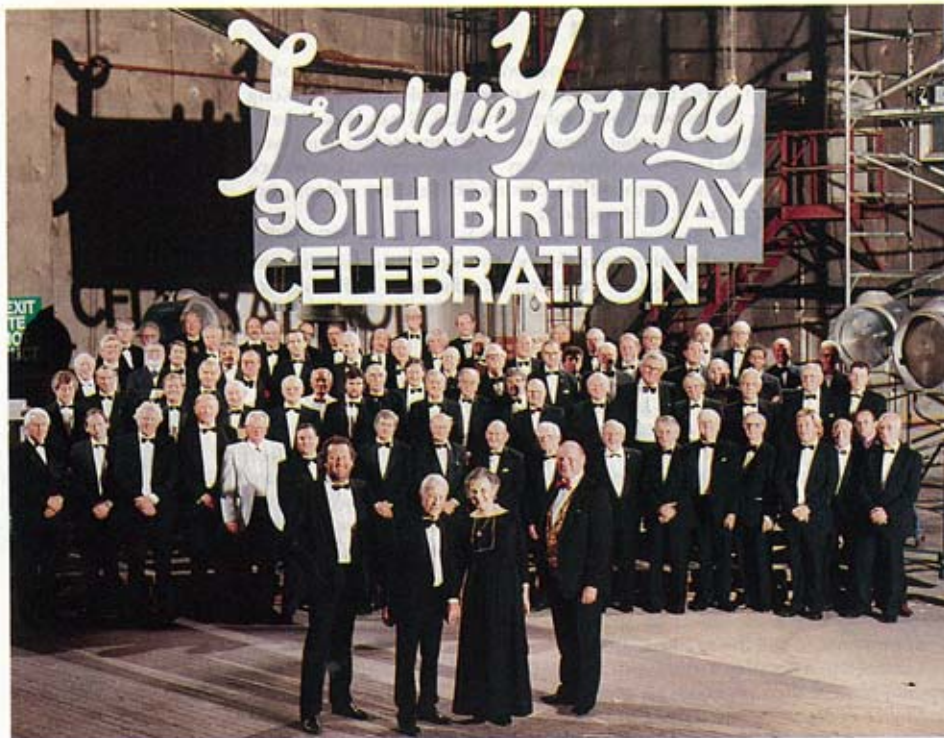
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Harvey Harrison (left), president of the British Society of Cinematographers, Freddie and Joan Young and Michael Samuelson with members of the BSC on D Stage at Pinewood Studios. Photo: John Henshall

Ninety Years Young

Around 300 people, including some of the biggest names to step before and behind the camera, met on D stage at Pinewood Studios on October 18th to salute cinematographer Freddie Young OBE on his ninetieth birthday.

This special celebration was hosted by Michael Samuelson Lighting in association with the British Society of Cinematographers, of which Freddie Young was co-founder in 1949 and the first president. Sydney Samuelson, British Film Commissioner and Michael Samuelson both paid tribute to Freddie's career on the evening.

During his career, Freddie has worked with renowned film-makers such as David Lean, John Ford, George Cukor, Michael Powell, Lewis Gilbert, King Vidor, and Sydney Lumet. During the past 30 years no less than 17 British directors of photography have been awarded the world's highest honour, the American Academy 'Oscar' and Freddie is a three time winner for his lighting camera work on *Lawrence of Arabia*, *Doctor Zhivago* and *Ryan's Daughter* as well as a nominee for *Ivanhoe* and *Nicholas and Alexander*. He's been accorded three BSC special awards for cinematography, and an Emmy for *Macbeth*. In 1972 he was awarded a Fellowship of the British Academy of Film and Television Arts

and in 1970 an OBE.

Harvey Harrison, BSC, traced Freddie's career: "My father gave Freddie his first job back in 1917 as a laboratory technician processing film in an old bucket, becoming an assistant in 1918 and then a second cameraman under Arthur Brown until 1927. Then came his big break when MA Wetherill offered him £20 to photograph *Victory 1918* followed by work on others including *White Cargo*, the first talkie in England. He photographed a number of films for Herbert Wilcox in the British and Dominion Film Company including *Mischief* and *Victoria the Great*. In 1939 he went freelance with *49th Parallel* for Michael Powell, and from 1944 to 1959, worked for MGM.

"Freddie has achieved his ambition as a creator of visual images like no other cinematographer. His list of awards say it all, he enjoys the affection and respect of everyone." Michael Samuelson said: "When the history of the art of cinema comes to be written about the 20th century, there is no doubt that Freddie Young will be acclaimed as a master. It is a great honour for my company and I to host such an event. Freddie has brought great prestige to the British film industry and all of us are very proud of him."

Note: Freddie Young will give the keynote speech at the opening of Showlight '93 in Bradford on April 19th next year.

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AV in Hong Kong

Calling it the 'International Audio Visual Show' was, on face value, a misnomer for this exhibition which occupied 12,000 sq.m of the splendid Hong Kong Convention Centre in the last week of October. In the UK, it would have been billed as a hi-fi and photographic fair. However, when one looked closer you could see that it all made sense in a different way. The title was an acceptance that multi-media has not only invaded the office with desk-top systems, but also the home, at least, that is, in Hong Kong.

While Philips and Panasonic used the occasion to launch their DCC (Digital Compact Cassette) developments, one of the most interesting new items came from Yamaha with their 'Cinema DSP' surround sound system. DSP stands for Digital Sound Field processing and purports to provide the same dynamic all-enveloping aural experience that movie makers strive to achieve. In particular, 'Cinema DSP' can deliver the benefits of a six channel multi-track 70mm movie format giving rich sound effects with clear directionality.

The secret of 'Cinema DSP's performance capability is apparently in the merging of Dolby 'Pro Logic' and Yamaha 'Digital Sound Field Processing'. After receiving the Dolby treatment, the four signal channels employed (left, right, centre and surround), are divided into two groups. The front effects are processed with DSP presence sound field data, creating sound imaging positioned so that the dialogue appears to be coming from the screen, the sound effects from behind and the music from even further back. Whereas the surround signals are processed to create a 3-D sound field which envelops the listener, moving from the rear to the front of the room. Furthermore, it is possible to shape the effect to stimulate a variety of different listening environments, to suit the source material.

I listened to a demo in a room with about 50 others and concluded that this system is more than adequate for a small commercial AV experience for an audience of 80 or so. The show also revealed a trend back to those old valve amps which used to be the rock on which all great discos were built before transistors took over the world. Anybody around in those days will know that the transistor actually never did cut the mustard, so this is an interesting development. Vac, Richom with their Vulcan 280 and LA Audio of Denmark are all into this back-to-the-future technology.

Britain was thinly represented, although Tannoy, Wharfedale, Celestion and the less well known Brinkmaster were present, the latter introducing a novel speaker enclosure looking strikingly like a Chinese lantern.

The demand for CDs is very strong in Hong Kong and one enterprising local company, the appropriately named Raffles Industries, introduced CD storage boxes in the shape of skyscrapers with up to 100 floors. Interestingly, also, unlike in the UK, laser discs are immensely popular and available for low cost rental on every street corner. Not surprisingly, the Hong Kong police were less than enamoured with a monitor-based karaoke system designed for in-car use.



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The main qualities we are looking for are a combination of technical competence and commercial flair. All applicants need to be in good health, possess a passport and clean driving licence and should have at least two years experience in selling entertainment lighting equipment, together with a good general understanding of personal computers and micro-processor-based technology. Fluency in European languages will be a major advantage.

A company car will be provided on completion of training and the successful applicant should be drawing a remuneration package well in excess of £20K within 12 months.

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A Northern Base for Lighting Technology

Action Lighting North, which commenced business in February 1989, has grown fast into a very smart and tidy operation located in a 4,600 sq.ft. of modern warehouse units in Salford, Manchester. General manager is Graham Bassett who was 'on the road' for Action before they decided to set down roots and go for an established base.



Philip Walker, Graham Bassett and Madeleine Bassett of Action Lighting North with LTG director Bev Bigham.

"It was my intention to get a base going but it came in two years rather than the five I thought it might take," he told L+SI. And as if to prove the idea was a good one from the start, told L+SI that turnover had trebled across the first three years of trading.

Part of London-based Action Lighting and in turn the fast-expanding Lighting Technology Group, there are many benefits from the Manchester-London link. Credit control, technical support, searchlight hire, help on installation work, assistance from Turnkey Projects and support for publicity can be provided from London. "I can scratch an idea out, and it comes back like this," said Graham, waving his latest

piece of literature. In the other direction more orders improve the group's purchasing power, and contacts for project work sourced from Manchester are on the increase.

However, Action North is a sales operation in the main part. "We very rarely say no to something," said Graham. "We will do our best to source it." Their showroom is well equipped and 'on-line' for product demonstrations and their £150,000 worth of stock comprehensive, including no less than 800 litres of Rosco paints and full stocks of colour - in fact sufficiently well-endowed to be dubbed a Rosco 'Master Dealer'.

Showroom equipment has Zero 88 and Celco controls and CCT luminaires to the fore, and when it comes to lamps its another of those veritable Lighting Technology Aladdin's caves.

In an operation of this kind everyone does everything, but supporting Graham are Phillip Walker on sales and technical matters with Madeleine Bassett taking care of administration (and superb lunches when L+SI calls).



Bev Bigham (left) and Graham Bassett pictured in Action Lighting North's showroom area.

Boy Racer



Peter Brooks, Fiona Francis (Zero 88), Ed De Boer, Raymond Dietrich, Gerard Jongorius and Fons de Vreede (Flashlight) circle in like vultures for a slice of Jaguar car enthusiast (and colleague) Fried Buttstedt's birthday cake at the PLASA Show. The creation was courtesy of Zero 88 Lighting.

Moody/Ravitz Move

Having moved house to bigger offices at 743 North Seward Street in Hollywood, leading US lighting designers Jeff Ravitz and James Moody have also been more than busy on a string of projects.

Jeff Ravitz has designed for four tours, all on the road simultaneously, with John Mellencamp, Bruce Springsteen, Ringo Starr and His All Star Band and Donald Fagen and New York Rock N' Soul Review. Tours five and six are waiting "in the wings". Ravitz also directed the video of the Bruce Springsteen World Tour.

James Moody, who has several designs currently in production, designed the lighting for the recent on-the-road production of 'Wheels of Fortune' in San Francisco. He has also designed no less than three of the US top-rated shows currently on television.

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Dave Stewart Flat-Out for Xylo



Rock musician Dave Stewart of the Eurythmics has recently kitted out his Covent Garden pad with a Xylo Turbine show control system to manage the multi-media events installed therein. Not only does the Turbine enable Dave Stewart to 'play his house' from his guitar; his real interest in the Turbine is that it integrates several key areas of interest to him, including music and visual production.

The various special effects, which include fibre optic carpet, liquid crystal television monitors (pictured above) and other paraphernalia are apparently there with serious intent and not just as a typically OTT statement of rock success. Stewart's flat is also his office when he is in the UK and he sees the equipment as having a useful function in this regard and not just for his own personal entertainment. He is now able to carry ideas from his studio environment through to audio and video production, and when he next decides to perform live, the ideas and programming will translate to a stunning live show using multiple synchronised images driven from the music.

Mind you, how he will justify the purpose of his intended acquisition of a laser video projector, which he intends to aim at adjacent buildings, L+SI can only conjecture.

Driving Force

Turnkey Projects, the installation division of the Lighting Technology Group, in association with American Lamps & Lighting, one of the group's sales divisions, recently completed a lighting installation for The Motor Insurance Repair Research Centre (MIRRC) at Thatcham.

The addition of a Stalex W8-3 16mm high speed film camera to the existing extensive range of video equipment required additional lighting in the crash rig area. The light level specified was 96,000 Lux +/-5% over an area approximately 2m x 3m. After much research for a suitable luminaire, Turnkey turned to James Thomas Engineering to manufacture a specially designed fitting incorporating 12 x 1kW linear lamps, each with its own reflector, built into a single housing with adjustable yoke. The fittings were all three phase to attempt to eliminate problems with flickering from the AC cycle which might show up on the film. A total of 20 were installed onto a purpose-made grid. A further 18 Arri 1kW minifloods were installed in both the front impact and rear impact pits and the entire installation is controlled via a series of contactors from a microswitch which is energised by the car on its way to the impact.

Intermedia 92

Neil Rice and Jon Petts of UK companies Optikinetics and JEM recently visited the second Intermedia Fair in Wroclaw, Poland in support of their Polish distributor Light Jack of Lodz.

Held at the Hala Ludowa (Peoples Hall), the exhibition almost doubled in size since its inception last year, and this year's 68 exhibitors included in its number all those who had exhibited in 1991. "The 46m high concrete vaulted dome ceiling made Earls Court 2 seem quite claustrophobic," said Neil Rice, "but it proved an ideal target for the usual array of followspots and searchlight type effects."



Exhibitors were a mixture of musical instrument, live, studio and disco sound and lighting manufacturers and suppliers occupying a total of 2,200 sq.m of stand space. Polish companies were in the majority, many representing established western brands with some national producers. In addition, 10 German and one company from the USA took part.

NJD products were displayed by their German distributor Steinigke and Interdisc Lighting showed Abstract lighting effects. OHM have their own Polish company and worked together with their Warsaw dealer Vicomus. In addition to Optikinetics and JEM equipment, Light Jack also showed products from PLASA member companies Cloud, Multiform and Penn via VPLT members Lightronic Licht & Lampen of Hamburg.

The event attracted a total of over 12,000 visitors, according to the organisers. Next year's show will be concurrent with the bi-annual meeting of the Polish section of the Audio Engineering Society. The organiser's contact number is (48) 71484102.



Jon Petts of JEM (left) with Urszula Bienkiewicz (interpreter) and Maciej Partyka (Intermedia Fair director).

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More Glantre Contracts

Following completion of their substantial contracts for a French Theme Park (where's that? Ed.), Glantre Engineering have announced the award of several new contracts totalling over £6 million in value which are keeping the company busy through 1992 and well into 1993.

Most significant is the Centro Cultural Belem in Lisbon, Portugal where Glantre's sub-contract to Philips Portuguesa for extensive stage rigging and lighting installations is valued at well over £2.5 million. In the 2000 seat main hall, 75 motorised rigging sets are controlled by a Hoffend Micro-Commander system while stage lighting includes a Strand Galaxy 3 console, 450 EC90 dimmers and luminaires from Strand, Teatro, James Thomas and Pani. Carr and Angier are consultants to IPPC, Portugal's Cultural Ministry.

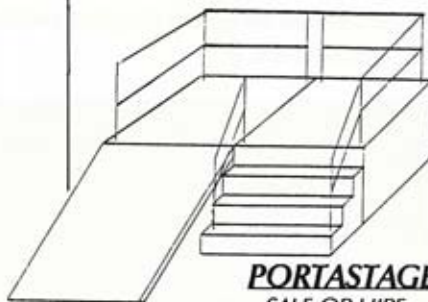
An important studio refurbishment contract worth £620,000 is under way in Malaysia for RTM's Studio 1 in Kuala Lumpur. This includes an Arri Imagine 250 control and dimmers with 49 Strand self-climbing hoists and a full complement of Quartzcolour luminaires. Meanwhile, in Saudi Arabia Glantre are carrying out extensive audio visual works valued at £1.75 million as part of British Aerospace's Al-Yamamah defence contract. Works cover auditorium and studio lighting, sound, rigging, conference and projection systems and includes a General Electric Talaria large screen video projector and Creston touch screen control surfaces. Smaller overseas contracts have also been awarded to Glantre this year in France, Spain, Brazil, Syria, Sultanate of Oman and Malaysia.

Three new contracts are under way in the UK, all involving Theatre Projects as Consultants. At the Savoy Theatre in the West End, Glantre are handling stage lighting with a Strand Galaxy Nova and EC90 dimmers. The Newbury Corn Exchange is a 'total package' for lighting, sound and rigging with full electrical installation. At the Lawrence Batley Theatre in Huddersfield, Glantre's contract covers sound, communications and stage lighting; the latter incorporates ADB's first-ever complete theatrical lighting package in the UK with a Tenor control desk, Eurodim digital dimmers and Europa luminaires. These contracts have a total value in excess of £820,000.

No wonder there's always a steady stream of PLASA-member lighting and sound manufacturers making tracks to Reading to secure their share of the purchase orders being doled out by Glantre!

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Trucking Trio at the NEC, Birmingham

In the three days prior to the PLASA Light and Sound Show in London DHA, Meteorlites and Optikinetics, together with an army of contractors, saw the fruition of months of planning invested in Freight Connection 92. The £4 million exhibition and conference hosted by Railfreight Distribution occupied all 25,000 square metres of Hall 5 at the NEC in Birmingham (pictured above). Delegates entered through a mock up section of Eurotunnel onto a 176 metre long raised walkway over an artificial canal, made to look deep by the simple addition of black dye to the water.

The walkway, dressed with Trilite arches and linked by catenary wires, was flanked by an assortment of goods wagons and locomotives. Visitors then moved on to a steel-framed and sound-proofed 500 seater auditorium with videowalls to the left and right of the stage. Outside the auditorium was a purpose-built restaurant over which were flown seven five metre square back projection screens on Trilite frames. 14 Optikinetics' new Solar 575 high powered effects were suspended seven metres above the screens and worked on two power circuits which allowed cloud effects, shown during the day, to be alternated with 'chaos', one of Optikinetics' new 6" effect wheels, during the evening. The overall design was carried out by Tilney

Lumsden Shane for Rex Walden Associates. Lighting design was undertaken by Adam Grater of DHA for Creative Video Associates. The design used the principle of an oblique keylight with a softer backlight from the opposite side of each unit. As the venue offered long throw, a six lamp bar (CP60) and a similar bar (CP61S) as a backlight was used. DHA found that running five trusses along the hall gave them the shots they needed if the bars were clamped on at odd angles.

The sales areas were targeted with their own 2k specials and the ramps had dedicated uplights, aided in the ambient light stakes by the reflective nature of the carriages. DHA rang the changes somewhat with the use of half CTO in the key and half CTB in the backlight to create mood settings. The somewhat large drawing tasks were made manageable as DHA share the same CAD programme as the designers and the lighting plot was quickly layered on to the backgrounds and sent to Meteorlites in a DXF file. Meteorlites for their part supplied litebeam trussing, numerous Par 56 and 64 lamps, 32 2kW fresnels, 53 650w fresnels, 18 1kW floods, and 8 Cadenza profile spots. Control-wise Avolites, Strand and Celco divided the spoils between them with the provision of Strand and Avolites dimmers and a Celco 90 and Avolites Rolacue control desks.

Donmar by Donmar

More news on the re-opened Donmar Warehouse Theatre has been sent to L+S by - Donmar Ltd. A brief report in our October issue told you about the sound; with news to hand from Donmar we can now tell you about the lighting.

The company installed an Arri Imagine 2 (the first in the West End) 250 channel console with IR interface, high resolution colour monitor, riggers remote control and Connexion output modules. Also installed is an Arri Reflexion universal DMX back-up console with 12 submaster faders and bump buttons with 60 submaster memories. Another West End 'first' is the use of two Arri 600 series dimmer racks for plug-in dimmer modules.

As a footnote, Donmar Ltd has no connection with Maybox Group plc, the managers of the Donmar Warehouse Theatre.

Light Angles £347,283 Deficiency

A provisional deficiency of £347,283 was reported at the creditors meeting of Light Angles Ltd on October 27th in London.

However, this sum is likely to increase as it is understood several creditors were not listed on the appropriate schedules. There was also some controversy over the fact that many creditors hadn't been informed of the meeting and that the company's accountants had decided not to attend. A committee of inspection was formed consisting of John Lethbridge of Cerebrum Lighting Ltd, Chris Cadle of Partyline Lighting Ltd and David Homewood, a former employee.

The Liquidators are H. W. Fisher & Co of Acre House, 11-15 William Road, London NW1 3ER.

AETTI Nears its Goal

The Arts and Entertainment Technical Training Initiative, which is producing Scottish and National Vocational Qualifications for backstage workers, moved a step nearer to the completion of its task this month as a team of some of the country's most skilled technicians gathered at the Royal National Theatre to begin training as assessors.

The training is, in fact, a pilot scheme managed by the City of Westminster College which has long-standing links with theatre training through its former existence at Paddington College. The trainees were provided by Theatre Technical Training Services Ltd, the training arm of the country's major repertoire houses, and the project is being overseen by the City and Guilds Institute with whom the AETTI shares joint status for awarding the National Vocational Qualifications.

The trainee assessors will be using three draft qualifications produced by the AETTI and covering stage technical work, flying and props, and it is expected that these will be the first qualifications in the performing arts industry as they become available early in 1993: the other qualifications will follow during the year. The AETTI is simultaneously working with theatres and colleges nationwide to establish a network of centres where the qualifications can be assured. After five years work, 1993 is likely to be significant year for both AETTI and the industry.

Not the Same Difference

In Graham Walne's article 'Same Difference' (October 92), we mistakenly printed that for Keith Yates "the word retiring is an appropriate one to describe his future." This should have read 'inappropriate,' and our apologies to Keith for sending him on his way too soon.



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INDUSTRY PEOPLE

Zero 88 have announced the appointment of **David Catterall** to the board of directors with responsibility for sales. At the same time industry elder statesman and previous sales director **Freddy Lloyd**, who remains a director, now takes responsibility for PR and special projects with emphasis on the Far East.

Samuelson Communications is embarking on an Autumn programme of expansion and investment in new state-of-the-art presentation and video systems. The programme has been launched by **Simon Livingstone**, the recently-appointed general manager.

John Wiseman has resigned his position as Vari-Lite Inc's vice-president of sales and road operations to pursue other interests. **Loren Haas** has been promoted to general manager of Dallas rental operations and **Randy Wade**, formerly an account manager for Showco Inc has been added to the Vari-Lite sales force of Gary Carnes, Curry Grant and Micky Curbishley.



David Catterall.



Julie Garton.

Mark Bromfield has joined Birmingham's SSE hire Ltd as head of technical services. Bromfield was formerly at total audio concepts for nine years as service and commissioning engineer.

Ken Barratt, chairman of Sony Broadcast & Communications has been elected president of the BKSTS.

Northern Light has appointed **Dave Pritchard** to the newly-created position of audio visual projects manager; previously audio visual facilities have been the responsibility of the sound and special projects department.

After 14 years with Optikinetics, **Mick Wells** has been appointed a director. He will continue to oversee production at sites in the UK and Canada. **Pat Burke** is retiring as financial director, and **Harry Howden** will join as company accountant.

Clive Bastin and **Patrick Hooper** have been appointed to the board of European Leisure plc as non-executive chairman and group finance director respectively, with Ian Rock now assuming the role of chief executive of the company.

Catriona Forcer, regular contributor of Lighting and Sound International's On Tour section has headed off to warmer climes to get married. She is already in Australia where she and her husband intend to live, and will, on occasion, continue to write for the magazine.

Lorraine Ludman, director of Definitive Lasers, was runner up in a 'Small Business' competition, run by She magazine and sponsored by Midland Bank. Lorraine, whose company specialises in the supply of lasers, was shortlisted to the final six from an entry list of over 300.

Larry Dane has joined the Le Maitre team as product support manager. He will be responsible for developing brand awareness of Le Maitre's own manufactured products, together with Citronic, Bose and Light Processor products for Le Maitre Sales' distribution network. Larry, whose experience goes back to Roger Squire days, joins the company after an eight year stint at Citronic.

Andrew Harvey, formerly with Acetrain Ltd, is also joining Le Maitre to head up their newly formed Industrial Products Division.

Formerly of Light Angles, **George Ashley Cound**, has joined Light & Sound Design in Birmingham in their sales division.

The Lighting Association, representing more than 350 of Britain's manufacturers and suppliers of lighting, has appointed in first ever chief executive, **Kevin Verdun**, to oversee a programme of rapid development and expansion.

RCF Electronics have appointed **Linton Smeeton** to the position of sales manager. His main responsibility will be to spearhead RCF's expanding public address/commercial audio division.

Clive Wright has joined Celestion International as product and promotions manager. Reporting directly to Martin Brady, his responsibilities extend across the company's full product range to include all hi-fi and professional audio equipment.

Julie Garton, previously sales manager for Optikinetics, has joined Yes fog machine and fluid manufacturers as UK sales director. Julie will head up sales and dealer support in the UK and co-ordinate the launch of a new range of lighting effects.

Stephen Hall has been appointed sales and marketing manager for LMC's Audio Projects division.

VSI Far East



VSI Clublife have recently returned from Korea, having successfully negotiated a deal with International Business Development network of Seoul.

VSI directors Philip Dinnis and Nigel Collison hosted a series of seminars for Korean hotel and nightclub operators, as well as putting together a tour for ex 'DJ of the Year' John Tingley.

Philip Dinnis told L+SI: "This has opened up the Korean and Japanese markets to VSI and the first club design for a Korean client is well underway."

Pictured above is Philip Dinnis (left) with Man-Soo Ahn, chairman of IBDN.

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Sennheiser Promotes New Radio System

Microphone manufacturer Sennheiser recently promoted its new EM046 and SK40 Mikroport radio system with a series of seminars held at its High Wycombe base, aimed primarily at theatre sound professionals.

The events gave Sennheiser an opportunity to explain some of the finer points of its design and the techniques used to overcome some of the limitations of previous systems.

Among the most important improvements are a 20dB increase in dynamic range - the circuit for which can be retro-fitted to earlier units - 16 selectable frequencies on each channel: 250mW RF output power and the ability to house eight diversity receivers in a single rack unit.

The receiver system has a number of ingenious features accessed either from the front panel buttons or an external computer, which is a considerably more convenient option when keying actors' names into the channel LED displays.

The LCDs and dual bargraphs are used to indicate statuses such as RF strength A/B, battery level, available frequency range and even the serial number of the module. While a considerable amount of programming can be executed from an external computer, the customer cannot change the serial number display, only the owner ID.

In addition to displaying battery levels as percentages of full charge, Sennheiser has improved considerably the performance of the NiCad accumulators themselves. Aware of the resistance to rechargeable batteries, as well as the ecological consequences of throwing away large numbers of dry cells, Sennheiser has sought to design out some of the problems associated with

NiCads.

One of these is 'memory'; the phenomenon by which NiCad, which is frequently part-charged, loses the remainder of its capacity and may then have an operating time of only minutes even when fully charged. Some charges solve this problem by discharging all batteries before recharging but Sennheiser has a more elegant solution.

Through liaison with battery manufacturers, Sennheiser discovered that the 'memory' problem only occurs when the batteries are over-charged. Typically, the battery is still half charged when it is placed on the full charge cycle, along with all the other batteries. With time, this practice causes permanent damage.

Sennheiser's second important discovery was that the batteries show a tiny but tell-tale voltage drop just before the onset of over-charging. The Sennheiser charger actually monitors the state of the NiCads and switches them to trickle charge before the damage is done.

As a further insurance against 'memory' charging is done in short bursts, rather than continuously. By using a plug-in power cartridge system for the SK50 transmitter, Sennheiser has increased the options available to the user. For instance, there is a cartridge that will hold dry cells if required and physically larger NiCad cartridges will be made to accommodate longer transmission times.

Almost any size of battery is possible in theory, although the physical bulk of the unit eventually becomes a limitation. This modular approach will also make it easier to introduce new battery technologies as they become available in the future.

Despite the sophistication of the new EM1046 and SK50 an eight channel diversity system actually works out £10,000 cheaper than the earlier model, which requires 16 separate receivers. The new system has full type approval for operation in the UK on Channels 22-69.

Simon Croft

Martin Movers

Martin Professional reported an incredible reaction to their new compact projector, the Pro 218, launched at the recent PLASA Light and Sound Show in early September. Many distributors across Europe reported that they had sold their entire first two months allocation within a week, and the company have been overwhelmed by the initial response.



The Martin Roboscan Pro 1220.

Another product on the stand caught the eye of First Leisure's Shaun Doyle who asked that the Roboscan 1020s specified for Bristol's Odyssey nightclub be changed for their upgraded counterparts, the new Martin Pro 1220, the prototypes of which were on show.

Meanwhile, Martin are busy on other fronts with an installation of their 1020s at the BBC studios in Birmingham, the supply of Robozaps to the Ritzy in Birmingham and The Zone in Tottenham (both Rank Leisure venues) and, to complete the picture, the provision of state-of-the-art lighting for the fifth UK Dance Awards to be held at London's Royal Lancaster Hotel on November 11th. In use will be Martin's new compact projectors in the Pro Series, the Pro 218 and the Pro 1220.



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News Shorts

Electrosonic shows won three top awards at the Seville Expo. Out of 40 entries and eight awards, three were picked up on shows where pavilions were running on Electrosonic equipment. Judges were an international group of AV and commissioning specialists.

Crowdman, a crowd control, venue management and entertainment technology event planned for February at the NEC Birmingham, has been postponed, say the organisers, until 1994 "in mainland Europe".

Electroacoustic Ltd has been formed by Mike Novak and Jon Trotter, long-time associates in Electromusic and more recently Elliott Bros & Novak Electromusic Ltd. They are based in Hoxton Square, London N1.

Owl Video Systems of Uckfield in Sussex launched the new Seleco SVT180 video projector ("superb for every large screen application") at Leisure Industry Week recently.

Dance Aid Trust has thanked PLASA Show exhibiting companies Le Maitre, NJD, Lee Filters, Lite Structures, Abracadabra, DJ Magazine, Court Acoustics, Canon, Martin Professional, Lamba and DI for help in raising money for purchase of disco units for the handicapped and underprivileged.

PA Installations of Llanelli have been busy on a number of prestigious projects in recent months. Installations include lighting for the UMIST Manchester Students Union and Nottingham Poly Students Union, lighting and sound for Kings College London Students Union, a theatre sound system for the local authority controlled Llanelli Entertainment Centre and a major general electrical, sound, lighting and video installation for the Bay View Pub/Restaurant in Swansea.

Camelont Ltd, manufacturers of Rainbow colour changers, has announced the appointment of Westsun Inc as exclusive master dealers for Canada. Westsun have offices in Toronto, Vancouver and Winnipeg.

APRS will be organising a joint venture with the DTI for the AES exhibition in Berlin (16-19 March, 1993). Companies interested should apply to the APRS on 0734-756218 without delay.

Citronic has signed up a Megamix sponsorship deal which involved cash and equipment. "The deal has been signed to underline the company's 20 year pedigree in producing quality studio mixing equipment and to spotlight our creative contribution to the growing UK and European DJ market," said Citronic's Mike Gerrish.

Harman Audio have announced the installation of the first JBL Array Series in the UK. Northern Light of Edinburgh installed the system at the Gleneagles Hotel in Perthshire.

Northern Light themselves have announced that due to the closure of the Sutton Business Centre where their managed London office has been based, they have been forced to re-locate. An announcement will be made in L+SI in the near future once arrangements have been made.

Marquee Audio has just announced an installation of another JBL Array Series speaker systems. This one went into their demo facility at Shepperton.

Network Distribution have become Klark Teknik's UK distributors for their quality range of signal processing equipment. Headed by Paul Ward, formerly of LMC, Network will take over the handling all sales and support for Klark Teknik's existing dealers.

Sennheiser has supplied an infrared system to the RSC at the Barbican Theatre in London. The dual channel system is being used to provide a hard of hearing service and transcription service for the blind. Royal Insurance sponsorship has covered most of the costs.

Meridien Communications have supplied an EMT 981 professional CD player to the Royal Opera House. Specifically designed for theatre, studio and broadcast sound production applications, the ROH will use the unit in the playback of special sound effects during the performance of forthcoming productions.

Tannoy has supplied six specially customised 15" dual concentric loudspeakers to the Theatre Around Glasgow (TAG) for their new production of the controversial play, A Clockwork Orange. Overseas, as part of a major MBI contract, they have supplied 14 System 10 monitor speakers for the Ministry of Information in Salalah, Oman.

Supermick Lights has won the contract to supply stage lighting featuring new Vari*Lite 5 units for the American tour of Japanese musician Kitaro. The company has also set-up a subsidiary in the United Arab Emirates based in Dubai.

Lite Smiffs Ltd have moved to larger premises at Northolt. "We are right next to the 'Target' pub on the Target Roundabout, adjacent to the A40 and very close to the newly-opened Hayes By-pass," Bob Jeffs told L+SI.

Kaleidovision's new Kaleidolight (launched at the recent PLASA Show) was used in October to project huge animated graphic effects for The Shamen's UK tour. A 20 x 15 foot screen provided a massive backdrop behind the band.

YES state they have taken in excess of 500 orders for their new Budget smoke machine and the Y1, both launched at PLASA. Celco will become sole distributors in the USA and more overseas dealers are actively being sought. YES units will be demonstrated at LDI in Dallas this month.

Le Maitre Sales have announced the installation of a 3kW D.A.R.E. dance floor sound system for The Avenue at Gillingham, a Kingfisher Leisure outlet. Amplification is via Citronic equipment.

Squire Sound & Light has secured another installation in Tunisia. The project is the first of a string of club installations agreed with a client in a deal signed up at the recent LIW exhibition. A new intelligent lighting system is to be supplied by Squire's to The Fridge in Brixton. Clay Paky Golden Scans are involved.

GB Professional Audio of Edinburgh has supplied a Shermann Cub system for Una McLean and Russell Hunter's touring show 'Couples'. Shermann Commando systems are due out on the tour of Fini Tribe and Rebecca Storm and a system has been installed at Edinburgh's Shaft funk, jazz and rare groove club.

Celestion International has announced the appointment of Amber Technology as its exclusive Australian distributor.

Carlsboro Electronics has appointed New Sound Studio of Hong Kong for distribution of its range in Hong Kong and China. Also announced is the appointment of Great Century Enterprise for Taiwanese distribution.

Clive Green & Co has supplied a 70-input Cadac J-type console for the Chicago production of Miss Saigon, the first time a J-type has been specified for the show on which Andrew Bruce of Autograph Sound Recording is sound designer.

Richmond Electrotech, JBL specialist dealer for the North West, has installed a JBL sound system as part of a £1.5m development at 'The Bizness', a new all-in-one restaurant, show bar, cabaret and nightclub with a capacity of 1200.

Concert Systems of Altrincham have reported continual success with the new EAW sound rig consisting of 24 KF850's and 12 KF850 SB cabinets. Concert Systems were Harman Audio's first EAW customer when they took over distribution of the line in August.

Summa Technologies of San Jose, California, has installed a series of their HTI automated luminaires at CBC-TV in Toronto, Canada. It is the first major network TV studio to use the units. The system was installed by Canadian Staging Projects, Summa's exclusive Canadian distributor.

Kevan R. Shaw Lighting Design has just moved into new and expanded premises at 4 Baltic Street in Edinburgh. Projects in hand include lighting design for Scottish Power's corporate HQ, work on the Royal Mile in Edinburgh and at the Victoria and Albert Museum in London plus various visitor centres in Scotland and Northern Ireland.

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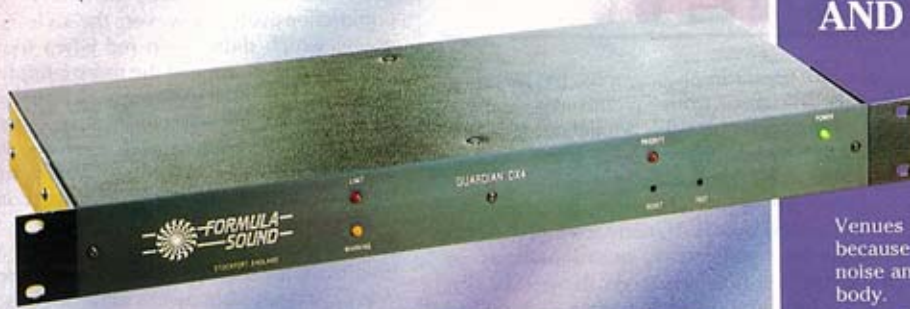
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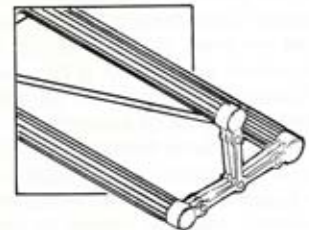
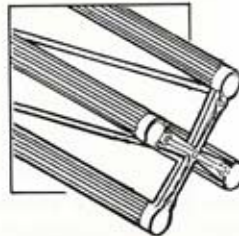
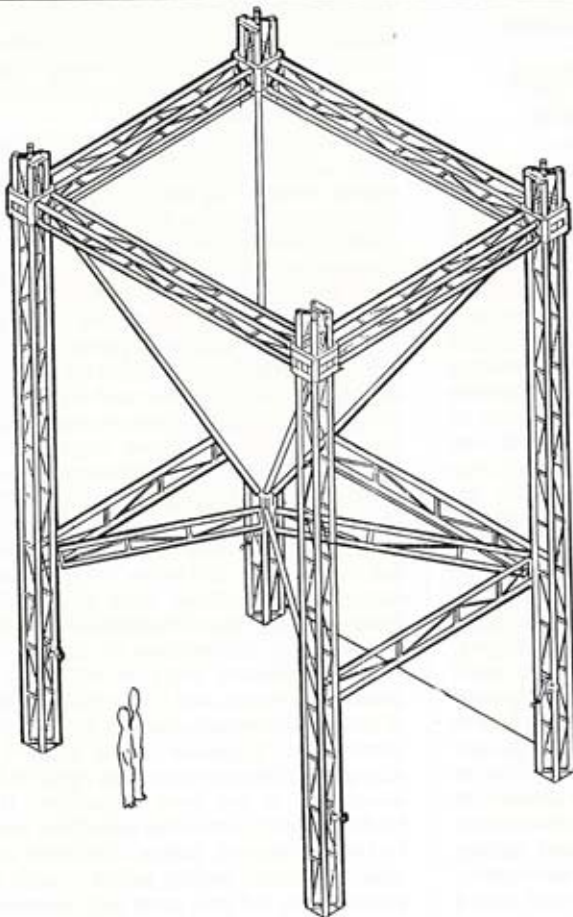
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BOOK REVIEW

L+SI sent Ian Lake a big package of new books for autumn reading

Matters of Light & Depth

Creating Memorable Images for Video,
Film & Stills Through Lighting

Ross Lowell

Available from Holmes Photographic Ltd

Price £22.00

Ross Lowell is a professional cinematographer, amateur still photographer and occasional director/producer who has shot hundreds of documentaries, short films and TV commercials many of which have received special recognition including an Academy Award, Golden Eagle Awards, Emmy Awards and Art Directors Club Awards amongst others. He has taught lighting at New York University and given frequent lighting seminars and workshops for both students and professionals alike, but is perhaps the best known in this country for his patented location lighting systems. Now he is making all of this wealth of experience available through the pages of this book.

Part of the job of reviewing any product is to try and distance oneself from one's own personal feelings, assess where it would be required and for what purpose, and then attempt an objective analysis from the viewpoint of the potential end user. This is where I have a problem with this particular book, as although it is intended as an educational/training publication, its format means that it would be perfectly at home on the coffee table, and inevitably Ross Lowell's fine sense of humour filters through into the text. What worries me then, is that although the educational content of the book is first class, there is a danger that it will not be taken seriously - and that would be a shame.

The first thing to realise is that this title is **NOT** an instruction manual. Although the introduction suggests it was written for students and professional, the aim seems to be a refinement of technique, which will result, principally, from a greater understanding of what can be achieved, and then secondarily how it can be achieved. In other words, the be-all is the resulting image committed to the chosen medium rather than a blow by blow account of how to achieve a given picture. Mr Lowell seems to steer his students away from dogmatic approach to lighting by suggesting that when in doubt, suck it and see, and his book is the result of many years experience of this kind of approach. Yes, there are rules; yes, there is the theory but at the end of the day these factors merely provide a starting point, all rather nicely summed up by a quotation from the glossary: Tyranny of Terms: The tendency of terms to turn into dogma. New pros needn't feel compelled to use 'Base Light' or 'Back Light' unless they really need them. Tip: It matters less what a tool or a technique is called than whether it performs the job efficiently and that you know how to use it effectively. However, as Gill McDowell points out, 'coming to terms with the jargon makes intercraft communication easier.'

The second point that I would wish to make is, thankfully, Ross has avoided turning this publication into an extension of the Lowell catalogue. He has largely, if not totally, avoided the use of trade names, and although Lowell

lights do appear in photographs, the text does not allude to them. Consequently, it is clear that the motivation behind this book is not to bolster sales in a recessionary market place, and for this he is to be congratulated.

There are eight chapters including the glossary, and details of many examples of the authors own stills work, occasionally as an illustration on how not to do things. Equally, the text is supported by some full colour reproductions of 'classical' artwork with an associated 'lighting interpretation', and throughout Ross injects an element of comedy into the work. Another humorous entry which springs to mind (and which also may affect a theatrical lighting designer as much as a video lighting director) is in the first chapter 'Lights of Passage - Basic Theory & Practice': "There are only three dilemmas that you are likely to face on every lighting set-up. 1) where to begin - Lighter's Block; 2) when to stop - Terminal Trauma; and 3) what to do in between - Mid Light Crisis!"

So, in closing, a nicely produced book with an awful lot of information presented in a humorous style which is easy to read. It is not, I feel, aimed at the raw novice but more the practising LD who wishes to refine his technique, or the student who has mastered the basics and now wishes to develop those lighting skills.

Lighting by Design: A Technical Guide

Brian Fitt & Joe Thornley

Published by Focal Press

Price £29.95 ISBN 0 240 513312

The Control of Light

Brian Fitt & Joe Thornley

Published by Focal Press

Price £14.95 ISBN 0 240 51346 0

Brian Fitt and Joe Thornley are both highly experienced lighting people, now running their own consultancy practice based in Norfolk. Brian spent 13 years in BBC Television's Operations Department, where he was responsible amongst other things for writing the BBC luminaire and dimmer specification. Joe has worked with all the major lighting manufacturers on numerous projects in television, theatre and film studios. He was with Lee Colortran during the change to Lumo and was principally responsible for the development of the Windsor modular range of luminaires.

This book is a comprehensive tome on all matters lighting, and unlike the Ross Lowell book, it is a text book in the classic sense of the words. Consequently, it is full of theory, formula and diagrams, and what is quite staggering is the range of topics encompassed by this publication. From the theory of light in the first chapter, we are guided through light measurements, light sources and luminaires and suspension systems. There are chapters on dimming and control, operational procedures, stage and studio design, automated lighting systems, working lights and emergency systems, service and maintenance and even a chapter on tendering, contracts and purchasing, including sub headings entitled 'Tendering - who to invite' and 'Awarding contracts'.

It should be apparent from the foregoing that this is not a light bedtime reading book, as the subject matters are covered fairly comprehensively. However, the style is easy going, which didn't help me when trying to plough through some of the more complicated concepts. The book is aimed at all practitioners of lighting in the entertainment industry, but because of the breadth of its contents, would certainly deserve recommendation to any lighting student, be their primary concern theatre or television.

If the asking price for *Lighting by Design* is a little high, an alternative may be provided by *The Control of Light* by the same authors. This is essentially a sub-set of the above publication and is available from Focal Press at the lower price of £14.95. As implied by the title, it comprises those sections of 'Lighting by Design' that are concerned with the control of light, and so only runs to six chapters instead of 16. Dispensing with the theory of light, 'Control' covers light measurement, light sources, luminaires, control and dimming, servicing and safety.

As these chapters are identical to those contained in 'Design', there is little point in aiming to own both. However, in their preface, the authors allude to the fact that this book could form the basis for training within the industry, so watch out for your NVQ trainees spouting it at you!

The ABC of Stage Lighting

Francis Reid

Published by A & C Black

Price £9.99 ISBN 0 7136 3609 2

Francis Reid is a freelance theatre lighting designer, lecturer, writer and adviser on theatre design and technology. His experience includes ten years as lighting director of Glyndebourne as well as major productions in London's West End and many pantomimes. He has lectured world-wide and writes regularly for several theatre magazines and this is his fifth book on theatre technology.

On the face of it, the concept of the book is good - a glossary of theatrical terms which may explain some of the more obscure references thrown at a newcomer to the world of theatre lighting. Browsing the book revealed plenty of reasonably useful stuff and I don't doubt that even the most experienced chief will find something to precipitate the 'Oh, that's where that came from!' reaction. However, I believe that the bulk of the sales of this book will find their way into the amateur and drama school end of the market, and I am concerned that in some cases the definitions leave room for improvement or more detailed explanation.

Equally, I have to take issue with Francis on some of his definitions, though to be fair, in the prologue, he states that his personal vocabulary has acquired not just minor inaccuracies but major misconceptions. Let's take *HMI* for instance. Lamp manufacturers Osram simply say: 'H is an abbreviation for the chemical element Mercury (Hg), M indicates the presence of metals, and I refers to the addition of halogen compounds (iodides, bromides)'. So where does 'hygerium' come from? If my schoolboy chemistry serves me right, and if a word has to be used, shouldn't it be Hydrargyrum?). Some other definitions need to be better explained. *Ballast* - discharge lamps require a current limiting ballast . . . well, they probably do, but only once they are running and for this you require . . . a ballast. Some are misleading (*Cross Fade* - lighting change where some of the channels increase in intensity while others decrease . . . so what's a Move Fade?).

One of my oldest bug-bears raises its head within these pages. In ABC, Francis informs us, under the heading *Chopped Waveforms* that thyristors act as dimmers by chopping the waveform, letting just as much current pass through as determined by the controlling signal. NO - a thyristor is a voltage controlling device, the variation of current is an effect of varying the voltage into a given load. It is statements like this one which concern me when dealing with inexperienced people, as mentioned earlier.

In closing I think this is an excellent 'loobook'. It is the sort of publication which lends itself to browsing and for that perhaps it should be considered by every theatre electrician as a little light background reading. I don't doubt that most of us can learn something from Francis Reid's wealth of experience. However, some of the definitions should be accepted with caution. Again, from the prologue, Francis invites corrections for existing entries in anticipation of a second edition, so with that in mind, I will offer my stock definition of a *Cross Fade* as a lighting change where the incoming state **totally** replaces the outgoing one.

Sixty Years of Light Work

Fred Bentham

Published by Strand Lighting

Price £12.95 ISBN 0 902277 02 2

Fred Bentham probably doesn't require any introduction from me, as one of the fathers of modern lighting control I would suspect that the majority of people will know precisely who he is and what he has done for the entertainment lighting industry. Suffice to say, he worked for Strand Electric for 42 years, during a period of great historic technical development in theatre, cinema and television lighting.

I joined Rank Strand in 1984, fresh from university, at a time when the Thatcher effect was just beginning to take hold and previously great British companies were starting to be ruled by accountants, profit/loss sheets and the marketing department. It was at this time when there was an exodus of the enthusiasts from Strand, just when I was developing my own enthusiasm for the theatre lighting industry. Consequently, there was a reducing number of people who could give me any of the history of the company. For example, it seemed obvious that Strand were the major supplier of control and dimming equipment in the West End, and obviously this didn't happen over night. So how did it all come about?

These questions have remained unanswered until now, when I was favoured by a copy of this book, and I will make no bones about it: it is a wonderful piece of British theatre history. Fred's gentle style is so easy to get to grips with, the subject matter is interesting, which both contribute to the difficulties in putting the book down.

My initial concerns over the fact that Strand themselves are the publishers seem unfounded, as Fred relates the story (particularly in the later chapters) warts and all.

The book starts with Fred's early childhood in Harlesden and traces his burgeoning interest in theatre from his early involvement with his model theatres. In 1929 he joined GEC where he remained until 1932, when he joined Strand Electric, with whom he stayed until 1973. When he left the company it was without ceremony as this was deemed to have taken place earlier that year at the time of the 100th edition of 'TABS'.

He was not leaving for good, as he had arranged for the ABTT, of which he was then

chairman, to make use of the theatre. It seemed that after all the company politics in which he had become embroiled, the ABTT became a substitute (or replacement) for Strand.

Throughout his book, Fred's modesty regarding his involvement in many projects is manifest. For example, I wonder how many people are aware that during the last war he became involved in a project to develop an early flight simulator. There are plenty of nice historical touches, for example his efforts to improve attendances at AGMs by providing some sherry to, perhaps, lighten the proceedings somewhat. He states: "With the support of Stanley Earnshaw this was voted a good idea and 12 months later Henry (Myers) turned up with a bottle and some glasses, whose content bore the relationship of a dingy to a schooner. No question of finishing the bottle arose: Henry spirited it away upstairs somewhere. "Nice to note that the company has maintained consistent policy throughout all those years!"

I do have one or two minor criticisms. Firstly, it is a shame that there are so few references to other manufacturers active in the field at the same time, e.g. Furse, Major etc. As a piece of British Theatre history, it might have been nice to know how these competitors impinged upon Strand, though Fred does fully credit the Thorn Q-File as the first stage lighting control system to record dimmer positions and work reliably.

Secondly, I wonder who proof read the original manuscripts because, at times, the punctuation is most odd. This arrests the reading process, whilst a passage is scanned again to ensure the right context is assumed.

However, these are both minor gripes. Throughout these pages, Fred's overwhelming love of theatre comes pouring out and it is due to this love that so many of us are indebted to him - we want more, especially those of us without the bound copies of 'Tabs' to grab for reference. A wonderful book, which now this review is complete, I can settle down and read again in more relaxed manner.

Rock Sets

Sutherland Lyall

Thames & Hudson

Price: £10.95 ISBN 0 500 276978

Rock Sets presents some of the most dramatic inventions of design company Fisher Park, the London-based pairing of Jonathan Park and Mark Fisher who have etched themselves an enviable world-wide reputation in set design. The book graphically charts some of their more mainstream projects for such high-profile groups as The Rolling Stones, Stevie Wonder and Tina Turner.

Their work, as is well documented in this book, uses some of the most radical architectural ideas of the 1960s and 70s, which they developed throughout the eighties and continue to do so during the 90s. What strikes one most when reading Rock Sets is the way that they styled the shape of staging and presentation and are probably more or less directly responsible for the emphasis on packaging that is a dominant feature of today's rock concert arena.

Subtitled 'the astonishing art of rock concert design' (with good reason), the results of their rock architecture are chronicled here in their full brilliance, with stunning colour photography set against original scale drawings which provide the reader with an unparalleled historical and contemporary insight into the machinery of rock concert design and presentation.

FRED BENTHAM



Sixty Years of Light Work

an autobiography

Lighting by Design

A technical guide

Brian Fitt & Joe Thornley

Colour temperature extends from 2600°K for white light with a red content to 6000°K for light with a high blue content, with most halogen lamps used in theatre rated at 3000°K. Colour temperature is more critical for the technical eye of a film or video camera than for the human eye.

Colour wheel: a device which can be fitted to a lighting fixture to allow the user to switch between different colours without the need for separate filters. Each colour is represented by a different slot in the wheel.

Coloured glass: a type of glass which filters out certain wavelengths of light, resulting in a specific colour. It is often used in stage lighting to create a desired mood or effect.

Compact fluorescent lamp (CFL): a type of lamp that is more energy-efficient than a standard incandescent lamp. It is often used in stage lighting for its long life and low heat output.

Company stage: a type of stage lighting fixture that is designed to be used in a variety of settings. It is often used in stage lighting for its versatility and ease of use.

Compartments: a type of stage lighting fixture that is designed to hold multiple lamps. It is often used in stage lighting for its ability to create a variety of lighting effects.

Complementary colours: a pair of colours which, when mixed together, produce a neutral grey. In stage lighting, complementary colours are often used to create a balanced and harmonious lighting design.

Composite gels: two or more filters in a single frame, but joined rather than overlapping. They are often used in stage lighting to create a specific colour and effect.

Compton organ console: a type of stage lighting fixture that is designed to be used in a variety of settings. It is often used in stage lighting for its versatility and ease of use.

Computers: a type of stage lighting fixture that is designed to be used in a variety of settings. It is often used in stage lighting for its ability to create a variety of lighting effects.

Condenser lens: a lens which collects the light from the lamp source in a profile spot to produce a smoother light, particularly for following and for gobo projection.

Console: alternative term (now used less than formerly) for the operational lighting control.

Control surfaces: any device such as lever, push, wheel, rocker, mouse, joystick, etc. used as an interface between an operator's fingers and the processor which activates the dimmers or motors controlling lighting instruments.

Cookie: an American alternative name for gobo. A contraction of 'cuckoo'.

FORMULA SOUND

John Offord charts the rise and rise of a small company who put quality into club and discotheque sound control and now sends its range of professional audio products world-wide, and to venues of all kinds

Measured by size of product and depth of experience, Formula Sound started off big. Director Tony Cockell, already with a wealth of experience in electronics (with audio as a speciality) behind him, launched the company in 1971 in response to a request to build a mobile studio-quality sound system for a local group of professional musicians who had a number one hit in the charts and were waiting to start a UK tour. The system was a great success, and come to that, so were the group, who later went on to become known as 10cc.

Throughout 10cc's subsequent career a considerable amount of equipment was specially designed and built for them, and it all had to withstand the rigours of on-the-road use. Some of it is still in use to this day, and available for hire from a leading industry company.

Put this experience of design and build alongside Tony's additional work as a recording engineer for several years, the fact that he was also a semi-professional musician, then bring in the experience gained from touring as a trouble shooter with 10cc and the like in both America and Europe, and you have to hand a unique range of talent and expertise.

Another milestone was passed when 10cc decided to build their own recording studio and Tony and Formula Sound were the obvious choice to undertake the construction of a custom-built recording console and installation

of the equipment. Further work of the same kind followed, with consoles built for Strawberry Studios North and other major establishments. With a company policy of using only the best equipment and where necessary to design and build if it was not readily available, many high quality sound systems were commissioned for venues as disparate as Golden Garter Theatre Restaurants and the refurbished Birmingham Hippodrome Theatre. Alongside came a large mobile system for Demis Roussos, a system for Fivepenny Piece and various systems for local nightclubs and discotheques.

Major items such as main mixing consoles and foldback mixing consoles were manufactured in Formula Sound's workshops as were loudspeaker systems for BBC Manchester and the Syd Lawrence Orchestra. A typical highlight was the system supplied for the new Harrogate International Centre in 1981 which was used for the Eurovision Song Contest a year later. Individual items and systems were produced for a wide range of clients, and included communication systems, orchestra foldback systems and VT mixers. Central Television came up with a request for various bits of equipment including a mixer that could be fitted into a space the size of five Penny and Giles faders. Formula Sound designed exactly what they needed.

Although the company's first off-the-shelf products were shown at the APRS exhibition in London in 1978 (see product line-up panel), the change-over to the company we now know came as a result of a decision to build their own 'production line' mixer, and I asked Tony how this had come about.

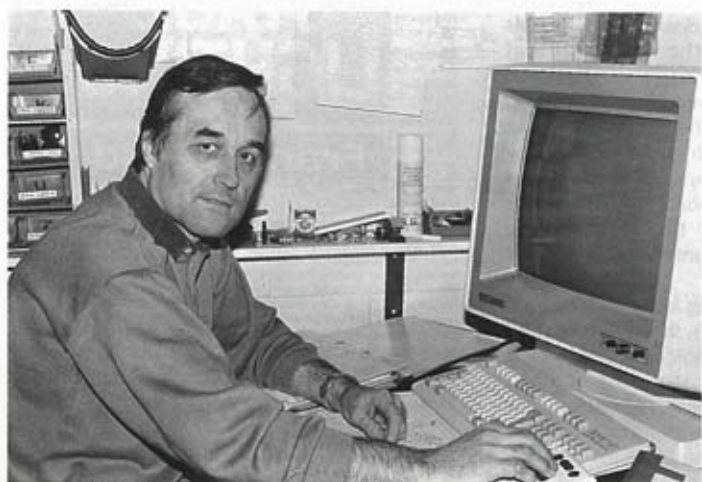
"In and amongst the big custom items we were working on installations, and being in the North (Formula Sound are Stockport-based) many of these were for clubs. We had extremely good loudspeakers using JBL components, very good amplifier systems, but nothing to drive them with in a small discotheque situation. So we sat down and built a mixer that would do the job. It had to be modular to cope with the 'I want to put on a little folk group on a Tuesday night' syndrome - and that's where the PM-80 started."

From 1980 onwards, even with the launch of the PM-80, Formula Sound were still undertaking custom work and this only diminished as further products were introduced into the company's range. Selected specialist projects are still undertaken when these can be worked around production schedules.

Sales director Sandra Cockell explained how the PM-80 began to take over their lives. "It was slow at first, of course," she told me, "and very hard work, particularly for the first two years. The first reaction was 'My God, who's going to



The control room at Strawberry Studios North, console designed and built by Formula Sound.



Tony Cockell in the 'engine room' at Formula Sound's Stockport base.



Latest award winner: the PM-90 modular mixer.



The flight-cased PA desk for Demis Roussos.



Formula Sound's first 'product line' equipment, the S19G graphic equaliser and S19GA graphic/analyser were later redesigned to become the tamper-proof SE2 series of system equalisers.



The AMX6 six channel mixer.

buy it at that price?' The disco industry had seen nothing like it. They were used to more cheaply manufactured mixers at about half the price. However, people soon saw that ours didn't fall to bits. We then started to exhibit at discotheque shows and the product started to take off."

Tony Cockell continued the story. "Then Thorn EMI came along and asked us for a mixer that contained all video inputs. You can do what you like with the PM-80 and we built 100 for them. All of a sudden it was big business!



Tony Cockell (right) at Harrogate International Centre for the 1982 Eurovision Song Contest.

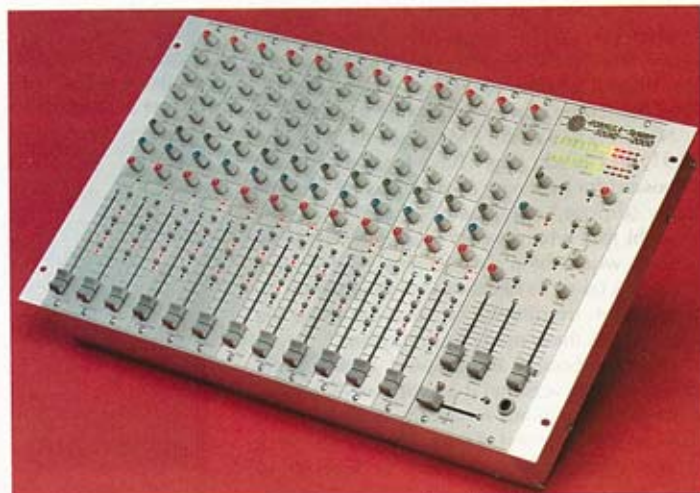
This was the real turning point, as was winning the DI Award in 1986." Sandra again: "It was still the most expensive, but that's how it's made," she said unapologetically. "We don't build to a price, we just build the best we can. That's our policy and that's how we've always done it, with no compromises."

With a highly successful and very adaptable modular product on their hands with the

PM-80, which accounted for around 60 per cent of business, Formula were rather reluctant to change for the sake of it. "However, with demand for a cross-fade facility proving not just a passing phase, we had to do something about it and the System 2000 modular mixer was the result, and this was first shown at the PLASA Light & Sound Show in 1988," explained Sandra. It duly won a DI award for best mixer



Que-4 and Que-8 stereo foldback systems.



System 2000 was launched at the PLASA show in 1988.



The Sentry environmental noise control system.



Multiple award-winner: the PM-80.



Sandra Cockell previews the PM-90 at the 1991 Frankfurt Music Fair.

in 1990.

"We were producing that many 'specials' of the PM-80 - we actually sold one at £3000 against the usual list price of £1000 - we decided to put into the System 2000 everything we'd been asked for as extras on the PM-80," said Tony. "We aimed for it to be a different breed of mixer, and not a replacement of the PM-80."

But a replacement for the PM-80 had to come, if for no other reason than Formula Sound's exhibition stand was being by-passed too often. "We'd built such a good product nobody needed to replace it!" said Sandra. "However, technology marches on, and launching the PM-90 was a big decision for us; the biggest gamble we'd ever made. But the time had come when we just had to do it."

Needless to say the PM-90 got its launch in 1991, and as you might have figured, won the DI award for best new mixer this year. "It took us by surprise," continued Sandra. "I honestly thought that when we showed it at PLASA in 1991 it would be a slow process. But it went bang! It's taken us nearly a year to catch up on production, despite the fact that we knew we had to have them ready from day one."

Formula Sound have spent many years persuading buyers that it is worthwhile paying extra in the first place for quality-built products that can stand the test of time. They've also kept a retentative ear open for industry feedback so that improvements can be added along the way or modified products supplied to suit specific requirements.

Using an apt example that typifies their 'built-to-last' approach and also sums up the company's philosophy, is the method they use to put the graphics onto equipment panels. Tony Cockell: "The problem with screen printing over a painted finish is that although you can get quite hard-wearing paints, they do eventually wear off and most especially in the areas that are used the most, for obvious reasons. We went about trying to find a solution and came up with anodizing, with the screen printing as an integral part of the anodizing process."

Throughout the evolution of a product every possible aspect of operation and servicability is considered, and with Tony at the end of a telephone line almost continually, soaking up the feedback, and a work-force fully capable of looking after any stage of manufacture or service on a small range of products they know

inside out, Formula Sound equipment has life-long back-up.

"We're programmed to build products that fill small niches in the market that need to be filled," said Sandra Cockell. "At the end of the day we enjoy what we do," said Tony. "When we stop enjoying it then we'll stop doing it."

There is more than a hint of a success problem ahead for Formula Sound. The company isn't quite so small any more, and each decision taken means answering many more searching questions. Sandra and Tony Cockell are well aware of the potential they have to expand their family business. Many market areas remain untapped, and their next main decision will be to decide how big they really want to go.



After seven years with Formula Sound, test engineer Ian McDonald still enjoys the challenge of maintaining the company's high standards.



Sandra Cockell with daughter Tina who is in charge of stock and purchasing.



Office manager Pauline Royle takes care of customer accounts.

Formula Sound Product Line-Up

Que-4/Que-8 Stereo Foldback System

Originally designed for use in recording studios the system has also found other markets in theatres and for live music, having been used in various Lloyd-Webber productions and on tour with Cliff Richard.

S19G/S19GA

The company's first off-the-shelf products were launched at the APRS show in London in 1978. Later re-designed to become the tamper-proof SE2 series of system equalisers.

PM-80 Modular Mixer

The first unit was built in 1979 and is still in use. It went on to become the industry standard and win a total of six awards for best mixer between 1985 and 1991. Used in some of the most prestigious in addition to hundreds and hundreds of small venues in the UK and overseas.

System 2000 Mixer

First shown at the PLASA Light & Sound Show in 1988, it was designed to meet the demands the PM-80 couldn't fulfil. It is in use in larger multi-purpose venues and various radio stations. Won the poll for best mixer in 1990.

Guardian CX4

This product was introduced in 1988 in response to demands from the industry for a unit to control a sound system in the event of a fire (i.e. link to fire alarm) and also enforce maximum noise level.

AMX6 Mixer

This six channel mixer was first shown at PLASA in 1989. Small and easy to use, six were purchased by the BBC as back-up systems. It has been used throughout the 1992 Liverpool Garden Festival.

Sentry

The Sentry environmental noise control unit was first shown at PLASA in 1990 and is designed to combat noise pollution and to meet the requirements of the Noise at Work Act.

PM-90 Modular Mixer

Another award-winner, the PM-90 was launched at PLASA in 1991 as the long-awaited replacement for the industry standard PM-80.

AVC2

Launched at PLASA this year, the AVC2 is an automatic volume control unit designed to be used in any sound system to control volume levels without restricting the dynamics of the music.

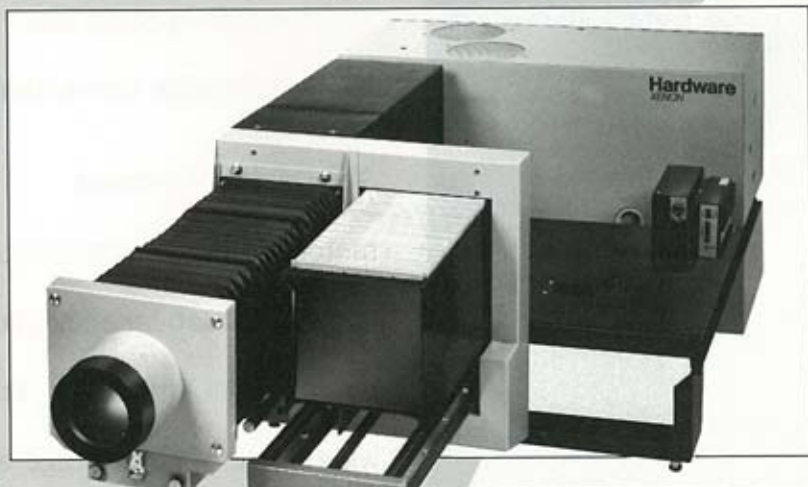


Formula Sound's Stockport headquarters.

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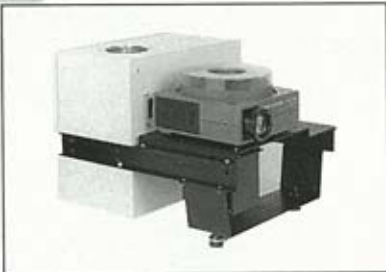


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Hardware Xenon

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THEATRE PROJECTS 35

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Light and Perspectives - Theatre Projects at 35

The wonder about starting a business at age 24 is how amazingly ignorant one was. Come to mention it, perhaps the cliché 'ignorance is bliss' is one of life's mottos.

The doubters were many. In 1957 there was really only one lighting firm in the English Theatre (Strand Electric) as one of its directors was to aggressively inform me. I knew almost nobody in the profession. Those were the days when success only came to those reportedly of a disposition to appeal to the 'camper' of West End producers. Even the small circle of colleagues at Her Majesty's Theatre, where I had fallen into my first paid job as ASM were sceptical. My mentor Bob Stanton offered me what appeared to be lifetime security as DSM with the forthcoming run of 'My Fair Lady', but I declined with thanks. For me a compelling vision of 'Theatre Projects' was some kind of beacon.

It was hard to imagine that anyone would pay me to a light a show. Why should they? The recipe was to rent out old, borrowed, begged or stolen lights and hopefully live off the proceeds. But times were obviously very ripe, for the plan worked: 35 years later, one has to say, beyond one's wildest dreams. The membership of PLASA attests to the growth of the entertainment lighting industry.

False modesty named the new firm Theatre Projects rather than Richard Pilbrow, but I also think, that even then, there was the glimmer of an idea that success would more easily flow from a team approach rather than from acting as one individual. And what a team it proved to be. God knows how many talented

individuals vitally contributed to TP through three-and-a-half decades.

Robert Ormbo was the first designer: from being chief at the Shaftesbury Theatre, he joined to be my assistant. Luckily, he arrived the Monday of the first week I was trying to light three shows at once. He later somewhat plaintively reminded me that he actually went home three weeks later.

There wasn't anything demeaning for a designer to start work in the rental store, because we all worked there. Everybody cleaned lanterns, rolled cable and put on plugs. Later, of course, the design team grew: Bob Bryan, John B. Read, David Hersey, Nick Chelton, Andy Bridge, Steve Kemp, Howard Eldridge, Benny Ball and others. It was an extraordinary period, with us all working together. I had a view that if I didn't completely light a show myself, I would first jointly do the design, sharing credit, and then encourage the emergence of a new solo designer. I don't remember much jealousy, which is surprising; I do remember much co-operation. We lived, breathed and drank lighting. The Green Man pub was for years the faculty club of a very special University of Stage Lighting.

It ended for two reasons. First, Theatre Projects got in the hands of money men who are supposed to know more about business, and I, like a fool, believed them. "Design was not profitable," but a deeper reason was that perhaps it had gone a little too far. A passion for lighting was all very well, but it had to be kept in perspective. Some of those late intense evenings began to produce in me a fear that the tail was beginning to wag the dog. And perhaps, finally, it was time for the designers to fly the nest and to seek independence. But it had been a golden period, the influence of which still echoes.

From small events others flow. Developments surprise you later. An extraordinary figure of the sixties was Sean Kenny. Designer of 'Oliver' and 'Blitz' he really led a revolution, which began three dimensional 'real' scenery, often apparently made of steel, brick and concrete, and exposed lighting equipment. 'Blitz' was a seminal event for David Collison (sound) and me (lighting). I think that today it would out-shine even the biggest musical spectacular.

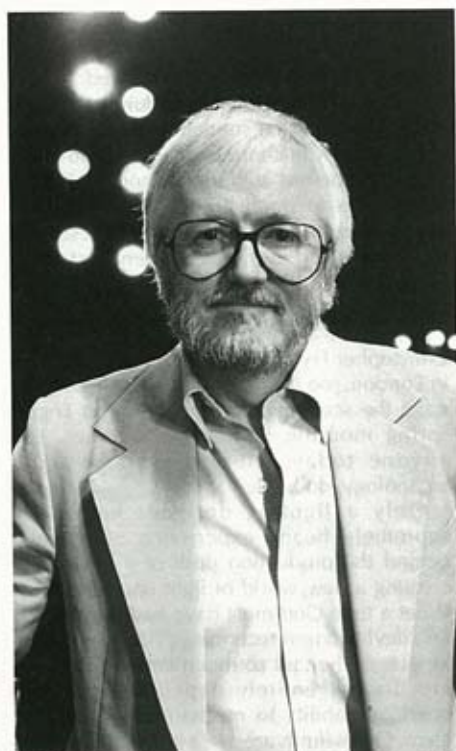
The sets for 'Blitz' were created with six internally driven three storey tower 'buildings' and a moving bridge which lifted from floor level to 30 feet in the air and ran from rear to front of stage. The Blitz of the title was created in this shifting city streetscape with light, sound and projection. 30 years later I have to acknowledge a debt to Sean. The concept of moving architectural towers was utilised again, first at Christ's Hospital in Horsham, then in the Derngate Centre, Northampton, the new arts centre in Cerritos, California and the Baltimore Center Stage's new Head Theatre; movable architecture this time to recreate the shapes of multi-form, three-dimensional theatre. But another tribute to the extraordinary Irishman. I

was involved for some months in the early development of 'Phantom of the Opera'. I don't think Maria Bjornson will mind admitting that her brilliant designs were helped along by a moving bridge that owed some of its heredity to Sean. The re-creation of the Victorian under-stage machinery owed something too, to the stirrings of TP which began in the band-room under the stage of Her Majesty's.

Hindsight is a rich vantage point. My father came to America in 1936 as a sabre fencer. He brought home to Beckenham a souvenir book of Manhattan, the Empire State, Chrysler Building and all, which was a childhood treasure. Friends he made on that trip visited us during the real blitz and seemed to a nine year old the height of glamour. Two years National Service on an American air base taught me the value of a pack of US Pall Mall cigarettes on the black market in nearby Margate, but none of that prepared me for the thrill of a first trip to Broadway.

This was at Tony Walton's instigation. He had talked the legendary Hal Prince (yes, even then) to use me for the projection for 'A Funny Thing Happened on the Way to the Forum'. That first trip I met the great lighting designer Jean Rosenthal, who took me under her wing, and in turn introduced me to Ed Kook of Century, and Stanley McCandless. Since I'd always seen myself as self-taught from reading books on lighting, this was like meeting God. I could not have foreseen then that Hal would invite Tony and me to become his production partners in London, that later I'd light a number of Broadway shows, later still marry an American and have an Anglo-American daughter, and finally emigrate and live in the USA. But that's later.

However, is not knowing what you can do the best test - constantly stepping into situations where you doubt you can cope? Early on Robert and I invented the maxim: "If we can get through this weekend, we can get through anything". It was faintly absurd to think of the



Richard Pilbrow on stage at the London Palladium in 1983.

THEATRE PROJECTS 35

A Celebration of 35 years of Theatre Projects and 25 years of Theatre Projects Consultants

Light and Perspectives: Theatre Projects at 35
Richard Pilbrow (page 35)

The New Age of Theatre Consultancy
John Offord (page 37)

Theatre Projects Trust
Bob Stanton (page 39)

Key Consulting Projects (page 40)

Activating the Crossover
Tony Gottelier (page 44)

The First Sound Designer
David Collison (page 47)

Heroes, Inspiration and a Good Book
Robert Halliday (page 48)

Theatre Projects at the National
Bob Anderson (page 49)

Lighting Designers Tributes
David Hersey, Bob Bryan (pages 50/51)

Working with TP
Derek Gilbert (page 51)

Theatre Projects Sound (page 52)



Blitz was a seminal event for David Collison and Richard Pilbrow: "I think that today it would out-shine even the biggest musical spectacular."



Nottingham Theatre Royal: "It made me realise that we'd thrown the baby out with the bathwater."

scrapes that we got through. We constantly had to invent new ways, because we didn't know what the old ones were! Theatre Projects has often led in innovation, and not knowing what was impossible often seemed a great spur.

I'm sure Fred Bentham was highly irritated by me when our paths first crossed. I'd been interviewed in 'The Stage' and said that I thought English lighting had much to learn from the Americans and Germans. (This I'd surmised from books). "Nonsense," came the brisk retort. Again, 30 years on, I can read his fascinating autobiography that details so much of his early career, which really was the basis of Strand's emergence from humble beginnings to world leader in lighting equipment. What an upstart Pilbrow must have appeared. Yet if perspective gives any insight, it is that out of some innocent, almost childlike passions - and ignorance - much new happens.

Several hundred productions of lighting and sound gave us some right to become Theatre Consultants. In those early days we were just concerned with backstage planning and technology. It took an embarrassing number of years before I awoke to how awful were our theatres of the sixties.

It was the reconstruction of the Theatre Royal Nottingham that finally opened my eyes. As a producer and lighting designer I spent my life working in turn-of-the-century theatres of the West End and Broadway. I rebelled against their lack of lighting and sound positions and filled their boxes with front of house lighting. Never did it occur to me to try to build new theatres that followed their example. The watchwords in the sixties were sightlines and all seats must be equal (a product of the Labour environment I wonder?).

Nottingham made me realise that we'd thrown the baby out with the bath water. In seeking 'efficiency' acoustics and sightlines, we'd forgotten the most important ingredient: the audience. They go to the theatre, not only to see and hear, but to feel. The theatres of our grandparents, which had evolved down centuries were masterful machines of human interaction. By wrapping the audience around the walls of the room - in Michael Elliott's words 'like a scarf around the neck on a cold winter's day' - theatricality, excitement and passion were more easily aroused.

Years later I produced Paul Schofield in 'I'm Not Rappaport' at the Birmingham Rep (sorry - one of our worst). Next week the same show, the same exquisite performances and production in the Apollo Theatre. Night and Day. Intimacy and a heady excitement instead of the detachment of a soccer stadium. Our theatrical grandparents had it right.

So now my life is full of trying to create totally

modern theatres on age old principles. Human scale, three-dimensional, intimate.

Different cultures demand different solutions. Yet it has been a voyage of discovery to find that at their root all world theatre share certain common attributes. The courtyard form of the Shakespearian theatre was home not only to the Bard, but an amazingly prolific number of his contemporaries. Clearly, there was something in the dynamic of the place that fostered drama. But across Europe, the same form witnessed a similar upsurge in playwriting. Looking further afield, the great days of Chinese and Japanese drama were played out in equally three-dimensional courtyard spaces. The Orient has been through many decades of barren, fan-shaped, cinema-style theatre building, just as in Europe and America, but the signs, in Japan at least, are of a reawakening of an awareness of the richness of traditional theatre forms.

The lessons in the US are subtle and different. Perhaps driven by the plot size of New York property, Broadway theatres evolved in the 1890s away from their English forebears. Proscenias grew wider and auditoria shallower. The best of Broadway theatres are astonishingly intimate, with their balconies extremely close to wide stages. Perhaps this greater width provides one explanation why Tennessee Williams and other American dramatists call for a wide stage with multiple settings, which are hard to present on the smaller English stage. Another US characteristic is the step down boxes on either side, which give slightly better sightlines compared to their English contemporaries. These factors combine to produce an archetypal American classic theatre, which we've had the good fortune to use as a model for the very modern successful new Steppenwolf Theatre in Chicago.

But while olden goldies may be inspiration, the unknown future beckons. To me the bravest advance still lies in the Royal Exchange, Manchester, the ultimate in intimacy and a theatrical dynamo waiting to accelerate human emotion: 700 spectators within 32 feet of the centre of the stage! The Exchange is locked into its arena form, a decision that has never been regretted by the company. But other situations demand other solutions. The availability of the air caster led to the multi-form solution of the Deragate Centre, with its concert hall, arena, lyric theatre or flat floored banquet/exhibition space. Employing movable multi-level architecture, it breaks the shackles of 20th century concrete and provides a flexibility not seen since the heyday of Baroque Theatre.

Flexibility for multi-purpose is something appropriate. Even more exciting is flexibility for creativity. It was Pierre Boulez who, in the

sixties, said that he wanted to blow up all the opera houses of the world which so inhibited artistic expression. He was thrilled to hear of plans for the new Toronto Ballet Opera House where the proscenium zone could be reconfigured to offer a wide range of staging and orchestral layouts and allow directors to break out of the tyranny of the proscenium arch. Similar plans are on the drawing boards for other theatres that strive to combine the intimacy of theatre of the past with a flexibility of staging opportunity more suited to the future.

So 'Back to the Future' has become a TPC catchphrase to match the one coined years ago to promote getting through the weekend.

What has the past to teach the future of lighting? We're in the midst of a seemingly never ending technical revolution. Advances in computers indicate new advances yet to come in lighting control. Computer control and new light sources may soon break the logjam of instrument development. Yet what a curiously stop-go process development is. In 1992 the sharpest cleanest theatre lighting instrument, still my favourite, is the 24 volt 500 watt German Beamlight invented in the thirties and brought to London for the aforementioned 'Blitz'. In the US, Ed Kook's 1930's Leko still reigns supreme, while the new Vari*Lite VL5 indicates a direction for modest cost automated fixtures that will precede a revolution in stage lighting design.

The Garnier Paris Opera employed 36 hand operated followspots on-stage during the age of gas. I wonder what subtleties of motion were achievable by that formidable array. How long will it be before automated modern lighting catches up to do lighting's creative task of supporting the story telling process with dramatic (and perhaps undemonstrative) lighting; lighting that supports without flashing your eyes out.

My first awareness of great lighting was with Christopher Fry's 'The Lady's Not for Burning' in London. Joe Davis' design brought onto the stage the scudding sun lighting of an English spring morning in magical manner. Can anyone today, blessed with so much technology, do better?

Only a lighting designer knows the supremely heady experience of standing behind the production desk of a new show, creating a new world of light upon the stage. What a time God must have had on that very first day! Modern technology has made many aspects of the task so much easier. No longer are dreams entirely dependent upon an operator's ability to mechanically reproduce them. One's limits are one's imagination. What an exciting perspective to have for the future.

Richard Pilbrow

The New Age of Theatre Consultancy

John Offord with Richard Pilbrow and team at Ridgefield, Connecticut

"We're trying to push and widen the envelope of theatre design. We're trying to move it to new forms of theatre which combine the wonders of the past, which can be summed up in one word - intimacy - which is absolutely fundamental to any place for live performance, and couple that with flexibility so that the intimacy is not a restraint. It has to be a liberation, where theatre artist(s) can do new things in new types of space.

"In order to do that we have to build better theatres cheaper, and to be able to do that we have to organise the process of consulting in a far more professional manner."

I had already been impressed following my walk-round team-meeting organisation-overview exercise upon arrival at the offices of Theatre Projects Consultants at Ridgefield in Connecticut, Richard Pilbrow's US nerve centre. I had seen some of the methodology employed. I was ready to soak up more of the traditional Pilbrow enthusiasm.

"There are various levels or layers that are involved," continued Richard Pilbrow. "Firstly, you have feasibility studies where you work with the client, hopefully for months and long before they even think about briefing an architect, where you thrash out what they really want, what are the community needs, who will be the potential users, what's it going to cost to build, and more importantly, what's it going to cost to run? That's the first part of the service, to precisely define what a client really wants to allow that company or community to move into a new and exciting age."

The men who spearhead most of this essential work and come up with the initial studies are David Staples and Duncan Webb, and it may well be some years before TPC can take a scheme any further. Both David and Duncan have strong arts management experience, a useful factor when it comes down to suggesting the likes of fund-raising schemes and other basic start-up advice.

"Next comes the time to take a much more positive attitude architecturally. We have a small group of wonderful in-house architects who have built theatres, and they work with myself and the team to realise our dreams. We then give to the appointed architects for the project a complete schematic of the key parts of the theatre, which is where the audience meet the performers - the stage and the auditorium.

"This is presented in both drawings and models but it also goes further because we work alongside and watch the project - many architects will never have worked on a theatre

before - and help them produce these very complicated buildings. They always come as a complete surprise to architects, who generally have no idea how complex a theatre is."

Reminding Richard that he had a habit of moving ahead into new areas a few steps before everyone else, I asked him whether the establishment of a base in the United States had been critical. Did he have to come to America to do what he's doing now? Could it only happen here?

"I think we're building on what we started in England. Yes, one of the reasons I moved to the States, apart from the commercial opportunity, was the sheer breadth of opportunity because the country is so vast. We have 40 or so projects on the go at any one time. You are not just doing one fringe theatre, but working on five or six of them and you can explore different directions."

And did this extend to the architectural side as well?

"Very much so. We're working with an enormous range of architects, from someone like Cesar Pelli, who is probably the leading corporate architect in the country, to Frank Gehry and Peter Eisenman, both of whom lead the avant garde. And from Barton Myers who has specialised in theatres for many years to a whole range of architects who've never done a theatre before.

"However, our architects usually set the basic direction of a project and then work with the chosen project architect to help them understand the immensely complicated structural, mechanical, electrical, air conditioning and other specifics of a theatre building."

Project management is the key that ensures the hugely diverse aspects of getting a new performance venue off the ground are covered and co-ordinated. Robert Long, a Theatre Projects' senior consultant and vice president for programming and marketing, explained the TPC viewpoint.

"As projects become increasingly complex, as theatre consultants offer services beyond the traditional role of equipment specialists, and as staff grows with the addition of specialized designers, the role of the project manager emerges. A mental image of a TPC project manager conjures up a picture of a carnival traffic cop at a busy intersection, juggling a dozen balls in the air while trying to keep traffic moving smoothly and at the right speed!

"Personalities and skills dictate the individual directions that different project managers take. Day-to-day tasks include managing the



Robert Long.

information flow both into and out of the office, keeping a close eye on the project and production schedules, assuring that the technical design and theatre planning mesh with the design intentions of the client and architect, and keeping the company's time and expenses in line with the contracted fee."

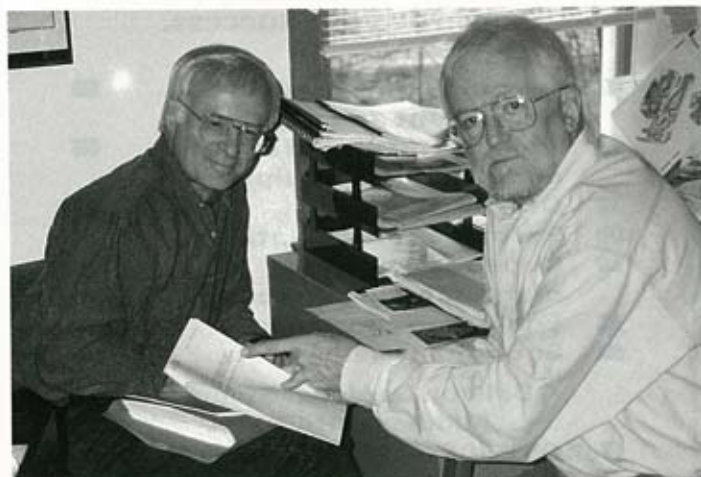
Contract documentation, often inches thick, is the bug-bear of many an organisation, but the ability to adapt and revise such masses of paperwork extremely quickly can win you the contract. So can excellent presentation in the first place, and most particularly when the person at the receiving end sees that a lot of work he might have had to undertake has already been produced - in TPC's case from a computerised data-base that stores bytes and bytes of all the necessary regulations.

Ben Boltin has at his command a highly efficient and functional method of producing performance equipment contract documents.

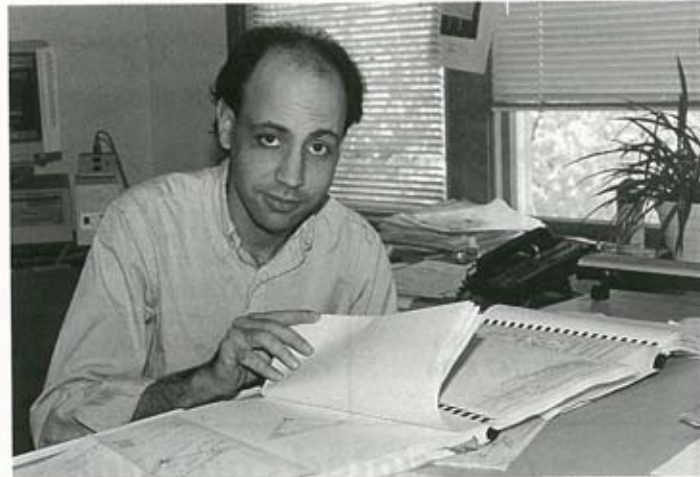
"The methodology is founded upon the 16 Construction Specification Institute (CSI) categories," he explained. "Employing the CSI system as a foundation, the TPC system satisfies the needs of both the construction and theatrical industries. Each area of equipment can be presented in a manner meeting the owner's economic and practical requirements. The documentation is easily modified to reflect each unique design and delivery requirement.

"Performance orientation allows the owner and TPC to be confident in the end result, and allows contractor's to bid within their organization's speciality. It allows either the assignment of the performance equipment contractor to a prime contractor or directly to the owner. It remains flexible enough, however, to permit a variety of delivery approaches, from turnkey to multiple subcontractors."

Returning to Richard Pilbrow, I asked how equipment technology affected their thinking on theatre architecture, most particularly as we will quite likely move to more and more



Robert Scales (left) and Richard Pilbrow.



Ben Boltin.

automation in the years ahead.

"I have to say I'm far more interested in the audience effect in the design of an auditorium rather than in the technology! I drive my technical colleagues mad because I'm never giving them enough room to put the lights. I do believe it's more important that a room is ravishingly exciting to those sitting in it and I push in that direction rather than having a technological box.

"However, every project obviously has its own parameters, a budget, and it's appropriate level of technology. Clearly, all that technology will change faster than the building, so hopefully one is designing in flexibility to allow technical plant to change in the years to come."

The point was picked up by Robert Scales, who detailed the challenge they faced with every new project.

"The principle in designing a modern theatre is to understand that the performance equipment is a 'kit of parts' that fits into a well thought out infrastructure that enables the directors, designers and technicians to achieve their ideas in a speedy and cost effective manner.

"The result of this principle would be that the stage floor is fully trapped and could be opened any place and at any size but has no irregularities between the traps that would keep rolling units from moving smoothly and quietly over the cracks! The rigging system would enable objects regardless of size and shape to be hung, accurately placed to trim, quietly and smoothly changed, etc! Lighting instruments could be located anywhere in the theatre because it would be convenient to circuit, focus, gel and control the lights from all the places one would want to place lights! Sound for reinforcement and for effects would have equal flexibility and control as the lighting systems! Fixed electrical raceways, full length



The 'London' team with Richard Pilbrow: (left to right) Lou Fleming, Tony Field, David Staples, Iain Mackintosh, Alan Russell, Jeremy Godden and Anne Minors.

welded battens, machinery sitting on the grid or in the trap, conduit, sound clusters, electrical take-up reels, etc should not be an obstruction or a limitation to the flexibility!

"The challenge is how to achieve the

appropriate flexibility, efficiency of use and operational reliability required while maintaining high safety standards, low cost, and also avoid obsolescence!"

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detail, TPC has its own integrated control system which has grown out of the philosophy of requiring the greatest flexibility in theatre systems while maintaining simplicity of use.

"There are two primary components to this," explained Curtis Kasefang. "Integrated control of all lighting circuits and state mastering of the performance space. Integrated control is achieved by placing all lighting circuits on the DMX communications line, providing redundant control and widely distributing the DMX line. Lighting circuits include stage, house and work circuits. Control comes from the lighting console and from the stage manager's console.

"State mastering comes from interpreting commands from one or more stage manager's control consoles with a programmable logic controller. This state mastering changes worklight settings, house light settings, show relay muting, video muting, telephone bell muting, smoke and HVAC control, and paging access. Multiple consoles are kept synchronized.

"This all sounds complicated, but in reality it involves a relatively simple logic control program that is set up once. Presets that are run by the stage manager's console are recorded on a secondary lighting console that communicates with the logic controller. It also sounds expensive, but it requires standard components, with the exception of dumb faceplates."

In the same way as TPC are providing highly sophisticated documentation, their integrated control system offers added benefits. "Through this system we are able to give controls that were formerly only the province of large, wealthy opera houses to technicians in moderate size facilities," said Curtis Kasefang.

Richard Pilbrow sees dramatic developments ahead in the lighting field.

"We are surely coming to the end of what I call the 'Lightboard' era, which set the original tone for most major lighting control systems. The changes in computers and man-machine interface on the one hand and the advent of reasonably priced automation on the other must mean that the high end control systems are going to change radically.

"Conventional lighting control systems don't really offer the designer the support that information technology could offer. It's beginning, but systems in the future will go much further in the direction of marshalled information about what you're likely to be doing and give it to you in more accessible and understandable broad form in order to make the stage look better. Alongside that, sound is changing much faster than anything else!"

Returning to the roots of consultancy, there have to be the dreams and ideals before a project can even get to the planning stage. But who guides who from there? Clients set out their ideas, their politics, their link to a particular culture or even multi-cultures or cross-over cultures. Architects may win a competition but with a scheme that could turn out to be almost unworkable, performance-wise. Somewhere in this mish-mash the theatre consultant has to come along and provide the once and for all chunk of expertise that will pull all the elements together and still come out the other end with a pat on the back and a little bit of history to show for it.

But bear in mind here that theatre consultants can change their views too. Richard Pilbrow admits that he started off with what he calls 'very practical stuff'. "We tried for sightlines, social equality, no balconies and so on - it was the rule of the sixties I was brought up with. We all built ghastly theatres as a result.

As he points out in his article, it took the re-opening of the Theatre Royal Nottingham to open his eyes. "We were going up a blind alley that could have brought about the disruption of good theatre. One then became obsessed with the fact that grandpa knew how to build theatres far better than we did.

"The Royal Exchange Theatre in Manchester is the ultimate expression of the old principles written in modern architecture. It's totally modern, totally high-tech. Richard Negri's brilliant creation has 700 people seated within 32 feet of the middle of the stage. You may ask if that matters. Well go there and see any show. It's the most powerful ingredient.

"There is nothing more exciting in this day of video, movies and Nintendo games to be gripping the arms of your seat in a theatre having a hell of an exciting time, and the intimacy of the building is the most important factor in all this. We spent all our younger lives thinking about acoustics and sightlines. Far more important in any place of live performance is excitement and emotion."

So, intimacy and flexibility are the key words in the Pilbrow phrase book, and it has shown through in their work over the past couple of decades.

Outside the easier intimacy of the smaller drama theatres, there is always the national project to blow your mind, and set you wondering about the rule book, full stop. One of these is the new futuristic home for the Los Angeles Philharmonic at the Music Center. Due to open in 1996, it has been designed by Frank Gehry and acoustician Minoru Nagata.

"The entire building and every room in it is a piece of sculpture," explained Richard Pilbrow. "It began when Gehry won an international competition for the design. After Nagata was introduced a lot of changes were made to the first concept of the auditorium. Then we began the usual tussle that happens with every concert hall as to how 'theatrical' it should be!

"Many of the musical fraternity don't think a concert is anything to do with theatre at all.

Theatre Projects Trust

Theatre Projects Trust was started in 1970 in order to promote, maintain and advance education by the production of plays and to encourage the Arts generally. Also to provide opportunities for the training of people in all forms of dramatic art including the stage management and technical aspects.

In 1965, Richard Pilbrow and Michael MacOwen, then principal of LAMDA (London Academy of Music and Dramatic Art) had jointly started a Stage Management/Technical Theatre Course at that school. For the first 21 years the course was administered and run by myself and continued until 1986 when heart problems forced my retirement.

Directly the Trust was formed, it took over the responsibility for this course until 1991 when the link with LAMDA unfortunately had to be severed. The course was considered to be a prototype for many other drama schools starting technical training at the time, and the Trust was able to call upon a wealth of specialist teachers from the Theatre Projects Group for the training of students. These included Benny Ball, Brian Benn, David Chivers, David Collison, Zoe Dominic (present Chairman of the Trust), Molly Friedel, Jeremy Godden, Anthony Horder, Roger Norwood, Robert Ormbo and John B. Read.

Ex-students have flourished in senior jobs throughout British Theatre: in repertory companies, at the Royal National Theatre, the

All they want is a bare platform and wonderful acoustics. Our experience over many many years has been that this is not actually true. I don't think I know of a single concert hall in the world that isn't used for other things. The acoustics should win every time, but every concert hall needs a stage that has some capability and flexibility. It has to have lighting and it has to have sound, because electronic music is with us, and you are going to do things other than play music.

"We were called in by Frank Gehry and asked how to reconcile the various demands. It has become a fascinating voyage of exploration and because he's such an extraordinary designer he's making extra-terrestrial demands. But whereas many architects would have by now dug their heels in and said 'no', Frank is continuing to get more interested and involved. In architectural terms one is striving to make sure the attributes of the hall can still be managed. Currently we are in the 12th configuration of the ceiling!"

A summary of key consulting projects alongside this article shows the breadth of experience gathered from some of the major projects worked on by Theatre Projects Consultants out of London, Connecticut, Toronto and Los Angeles, and I can confirm from first-hand experience that the face you see in London tomorrow you could well see in Connecticut next week. A glance again at the list identifies key consultants linking on projects around the globe, whether UK or US based.

Suitably inspired after my day at Ridgefield I came away with the comfortable feeling that the future of theatre building was in good hands as far as Theatre Projects was concerned, and I left it to Richard Pilbrow to sum up.

"What it's all about now is that the more we can automate the processes involved, the more time we have to deal face-to-face with the client on the stage or with the architect in his studio. There is less time spent on the mechanics, more thinking time, and more time for creativity."



Bob Stanton.

RSC, our main opera houses and in many West End musicals and plays. The names of Richard Bullimore, Howard Panter, Luke Rittner, Mark Waters and lighting designers Andrew Bridge and Simon Tapping are among them.

Among many other projects of the Trust it is interesting to note that in 1970 the play 'Mister' on tour and at the Duchess Theatre provided Richard Pilbrow with his debut as a director.

At the present time the future of the Trust is not clear but its achievements can certainly be regarded with some satisfaction.

Bob Stanton

Key Consulting Projects

Theatre Projects Consultants

Thirty five years of working in theatre, first in lighting and sound, then as producers, then into consulting, has meant a lot of learning. Each opportunity has enriched subsequent ones . . . hopefully the future will continue to allow exploration into ever more exciting, innovative, theatre spaces that keep one eye on the past, one on the future and the third eye on the constant need for the cheaper solution!

NATIONAL PROJECTS

Sir Laurence Olivier's invitation to Richard Pilbrow to be the National's Theatre Consultant marked the starting point for Theatre Projects Consultants as a separate company within the Theatre Projects Group. The prominence of the National project led to the company's international work.

National Theatre of Great Britain 1974

The National contains two of Britain's most sophisticated theatres; the Olivier and Lyttleton. Both are designed to operate in repertoire and set new standards for advanced rigging, lighting and sound equipment. TPC led by Richard Pilbrow and Richard Brett was responsible for theatre planning and technical design, which included computer-controlled power flying and drum revolving stage, lighting control (Lightboard), architectural lighting, sound and communications (with David Collison). The design of the highly acclaimed courtyard theatre, the Cottesloe, was led by Iain Mackintosh. Architect Sir Denys Lasdun & Partners.

National Theater Doha, Qatar 1981

540 seat proscenium theatre. TPC team David Staples and John Whittaker.

National Theatre of the Cayman Islands 1986

A courtyard theatre was fabricated in the UK and set up in a pre-fabricated building on this Caribbean island. It is set in a cultural village, which is intended to bring together much of the fast disappearing heritage of the community. TPC team David Staples, Jerry Godden.



National Cultural Center, Damascus, Syria 1993

An award winning design by architects Renton Howard Wood Levin with TPC will open in 1993.

Singapore National Cultural Centre Late 1990's

1992 marks the commencement of work on this arts center, destined to be one of the most prestigious in the world. Intended as a home for the performing arts in this land of many diverse cultures, the Singapore Centre will be a gateway to the future of the performing arts in East and West for the Pacific Rim and South East Asia. TPC team is led by David Staples, Richard Brett and Anne Minors.

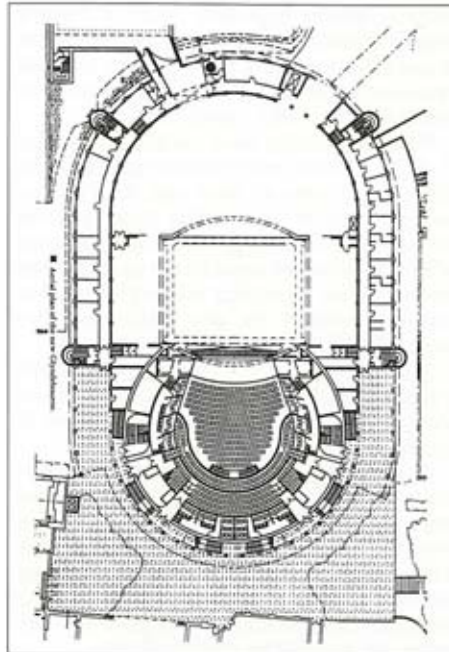
OPERA AND BALLET

Theatres for ballet and opera present particular challenges. Both need the beneficial influence of the glorious opera houses of the past in their auditorium design, while adding innovative twentieth century technology for flexible staging in repertoire.

Glyndebourne Opera 1994

For TPC Iain Mackintosh, Alan Russell, Anne

Minors and George Ellerington have closely collaborated with client's representative John Bury, to provide the auditorium design concept and performance equipment installation for this new 1,220 seat opera house in Sussex. Architect Michael Hopkins & Partners.



An aerial view of the new Glyndebourne.

Royal Opera House Covent Garden 1973

This feasibility study laid the foundations for the long awaited restoration of Covent Garden, which sadly remains a distant dream.

Ballet Opera Toronto

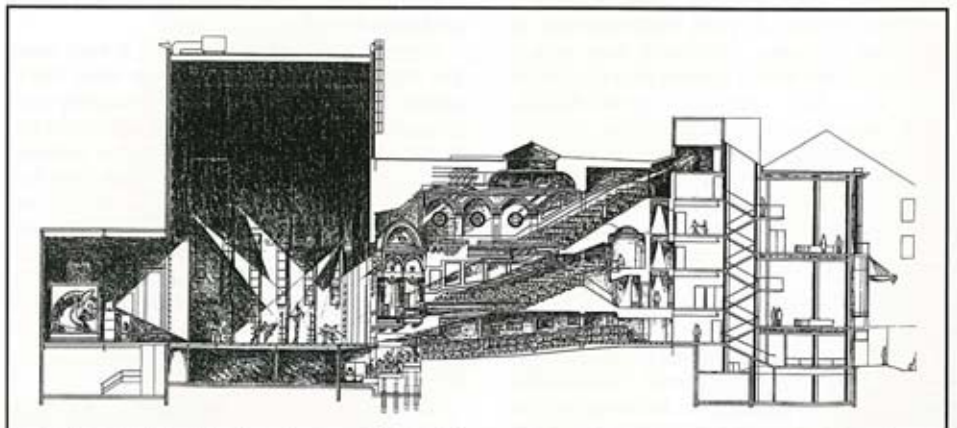
Unfortunately for the Canadian Opera Company and the National Ballet of Canada, this fully designed opera house for Canada also remains a mirage. A victim of the nineties' recession, the design by architect Moshe Safdie demonstrates a special synthesis of traditional opera house architecture with futuristic flexibility, designed to operate in a highly efficient manner in repertoire. TPC team led by Richard Pilbrow, Richard Brett and Anne Minors.

Empire Theatre, Edinburgh 1994

This restoration of the 1928 original is to become Scotland's leading lyric theatre and a major venue for the International Festival. For TPC the team includes Iain Mackintosh, Alan Russell, Anne Minors, George Ellerington and Richard Borkum. Architect Law & Dunbar Naismith Partnership.

Sao Paulo Opera House, Brazil

Wally Russell led on preliminary studies for this new Opera House in Brazil with acoustician Chris Jaffe.



Scale plans for The Empire Theatre, Edinburgh.



Teatro Colon, Buenos Aires 1991

Los Angeles-based Wally Russell also led on the renovation of the stage of this, one of the world's great opera houses. Phase 1 installed new grid and power flying equipment and Phase 2, the understage equipment, will shortly follow.

BUILDINGS FOR MUSIC

Concert halls are theatres for music. Musicians need good conditions on and behind the platform. Audiences need to buy tickets, assemble, listen and participate in the performance. Musical performances may also cover a wide range of activity, from solo recital to Mahler symphony, from classics to popular. Furthermore, every concert hall in the world is, on occasion, used for other types of event.

Royal Concert Hall, Nottingham 1982

This concert hall, in collaboration with acoustician Russell Johnson, introduced an unusual and much needed flexibility of platform area without compromising the fundamental musical acoustic of the room to allow a wide variety of musical and other events to be performed. TPC team Richard Pilbrow, Jerry Godden. Architect Renton Howard Wood.

Jack Singer Concert Hall, Calgary 1985

TPC's first major North American project continued the collaboration with Russell Johnson in developing the highest acoustic quality together with acoustic and staging flexibility. TPC team Richard Pilbrow, David Staples, Jerry Godden.

National Concert Hall, Athens, Greece 1990

Management study for this new hall was conducted by David Staples and Anthony Field.

Tanglewood Concert Hall, Lennox, MA 1994

A 1,200 seat indoor/outdoor concert hall with 2,000 on the lawn, for the Boston Symphony's summer home with acoustician Larry Kirkegaard. Architects William Rawn Associates. TPC team Richard Pilbrow, Peter Lucking, Robert Long.

Walt Disney Concert Hall, Los Angeles 1996

The new futuristic home for the Los Angeles Philharmonic at the Music Center is designed by architect Frank Gehry and acoustician Minoru Nagata of Tokyo. TPC team Richard Pilbrow, Robert Scales, Peter Lucking, Jerry Godden.

DRAMA THEATRES

The evolution of drama theatres has seen many shifts of attitude over 35 years. The sixties saw an overriding concern for sightlines and equality of

seating. The resultant barrenness of the fan shaped auditorium spurred a rise of interest in the thrust, arena and open stages. More recently a reappraisal of the traditional virtues of the three-dimensional theatre spaces of the 19th and previous centuries has led to renewed interest in the intimate proscenium theatre with flexible forestage.

Leatherhead Repertory Theatre 1970

This, one of the first post-war English rep theatres was a good example of its genre. Architect Roderick Ham.

Birmingham Repertory Theatre 1971

The same single level fan shape on a larger scale proved far less suitable for actors and audiences.

Crucible Theatre Sheffield 1971

In part a reaction against the overlarge fan-shaped auditorium, Sir Tyrone Guthrie, supported by TPC (Richard Pilbrow, Richard Brett), led this first class example of the thrust stage in Britain.



Royal Exchange Theatre, Manchester 1975

Director Michael Elliott and designer Richard Negri were responsible with TPC (Richard Pilbrow) for this unique arena stage. The world's first in three dimensions. 700 people within 32 feet of stage centre attest to the powers of intimacy and concentration. Architect Levitt Bernstein Associates.

Barbican Theatre, London 1982

The TPC team for the Royal Shakespeare's London home was led by Richard Pilbrow, Richard Brett and Alan Russell, in association with the Royal Shakespeare's representative John Bury. Architect Chamberlain, Powell & Bonn.



Steppenwolf Theater, Chicago 1991

The first new American proscenium stage with balcony and step-down boxes based upon the 'classic' Broadway model for a regional company. TPC team Richard Pilbrow, Brian Hall, Bob Scales with Steppenwolf designer Kevin Rigdon. Architect John Morris.

San Jose Repertory Theatre 1995

A further exploration of this US type, with a greatly increased flexibility of proscenium and forestage. TPC team Richard Pilbrow, Peter Lucking, Bob Scales. Architect Holt Hinshaw Jones.

Actor's Theatre, Louisville, Kentucky 1994

A new arena stage for this successful company. TPC team Bob Scales, Peter Lucking, Curtis Kasefang. Architect Harry Weese & Associates.

Goodman Theatre, Chicago 1996

A new twin theatre complex for Chicago's mainstream repertory theatre company is beginning development. TPC team Richard Pilbrow, Brian Hall, Robert Long.

PERFORMING ARTS CENTRES

The concept of clustering performing arts facilities in one building or centre, echoing traditional city theatre districts, has led to many centres that are making a significant social and economic contribution to their communities.

Hong Kong Arts Centre 1975

TPC's first exploration of mixed use development. A hundred foot square site contains a 450 seat theatre, recital hall, studio theatre, two restaurants, clubrooms and 13 floors of office development. Architect Tao Ho with TPC Team led by Richard Pilbrow and Alan Russell.

Calgary Centre for the Performing Arts, Alberta, 1985

Concert hall, two theatres and downtown theatre district fill a city block. Larger theatre has an exceptionally flexible proscenium/forestage zone while the smaller is a Canadian rebirth of Bury St. Edmunds. TPC Team Richard Pilbrow, David Staples, Iain Mackintosh, Jerry Godden.

Portland Performing Arts Center, Oregon 1987

A concert hall restoration of a 1929 movie palace and two new theatres, 900 seat proscenium and 400 seat courtyard. Architect Barton Myers, ELS and BOOR/A with TPC Team Richard Pilbrow, David Staples, Jerry Godden.



David Taylor and George Ellerington working in the auditorium of Performing Arts Centre, Charlotte.

North Carolina Performing Arts Center, Charlotte 1992

2,100 seat Lyric Theatre/Symphony Hall and 420 seat playhouse. Complex is part of a central city mixed use development with 65 storey office tower. The Lyric Theatre, inspired by London's Coliseum, is a three balcony wrap around auditorium with side boxes. Transformation to symphony mode is achieved by a telescoping orchestral shell that rolls on sub-stage rails, from a dock upstage of the 50 foot deep stage, to fill the proscenium. When in position, the shell fitted with pipe organ, completes the symphonic architectural appearance of the concert hall. Playhouse is small, hexagonal two level theatre for a regional theatre company and community use. Architect: Cesar Pelli. Acoustician Larry Kirkegaard. TPC team Richard Pilbrow, Brian Hall, Robert Long, Lou Fleming.

Escondido Performing Arts Center, California 1994

A 1,500 seat lyric theatre for symphony, opera, ballet and touring musicals with a 450 seat flexible courtyard community theatre is linked with a Fine Arts Gallery, Creativity Center and Community Meeting Center in a new city in Southern California. Architect Moore Ruble Yudell. Acoustician Rick Talaske. TPC team David Staples, Peter Lucking, Jerry Godden.

Ohio Center for the Performing Arts, Cincinnati 1995

2,700 seat theatre for touring Broadway Musicals, opera and dance with 400 seat flexible community theatre. The large theatre is a two balcony commercial theatre for tours of Broadway musicals and popular entertainers. Its form, derived from the large Broadway theatre model, with balconies and side step-down boxes, seeks to optimize the audience's sense of participation. The community theatre is a small space with

readily removable orchestra stalls seating to allow for flat floor events. Architect Cesar Pelli. Acoustician Larry Kirkegaard. TPC team Richard Pilbrow, Brian Hall, Robert Long.

FLEXIBLE SPACES

The intimate three-dimensional, totally flexible space desired by so many theatre artists has usually taken the form of a 'black box'. Like a TV studio, devoid of character, it usually has to be filled with expensive scenery and movable seating before it is useful. Frank Dunlop at the Young Vic pioneered the idea of a galleried space of architectural character, which echoed the Elizabethan theatre. The Young Vic's architect Bill Howell, with TPC (Richard Pilbrow), took the idea further with Christ's Hospital School, Horsham, and Iain Mackintosh's design for the Cottesloe Theatre accelerated the vogue for a rediscovery of the 'Courtyard Theatre'.

Three distinct variations of flexible space have now emerged. The conventional courtyard, where a wide range of actor/audience relationships may be explored within a relatively fixed architectural framework. Apart from the Cottesloe, some examples are:

Christ's Hospital, Horsham 1974

Tricycle Theatre, London 1980 and 1989

Wilde Theatre, Bracknell 1984

The second variation moves parts of the architectural frame in order to increase the space's flexibility, employing air palletes or simple caster technology. This may be on a large or small scale.

Derrigate Centre, Northampton 1983

The first flexible large scale, multi-purpose, multi-form concert hall/lyric theatre/flat floor space is one of England's most intensely utilized arts centres. Architect Renton Howard Wood Levin with TPC Team Richard Pilbrow, Jerry Godden



Cerritos: The auditorium taken from the orchestra pit showing lighting bridges and 'hinged' auditorium towers.

Cerritos Community Arts Center, California 1993

A larger scale American 'son of Derrigate' with the added complexity of an earthquake high-risk zone. Architect Barton Myers with TPC Team David Staples, Jerry Godden

Head Theatre, Baltimore 1991

A totally flexible theatre 'kit' of wagon towers and seating modules, creating variable shapes of 'courtyard' space within an historic hall. Architect Ziger, Hoopes and Snead. TPC Team Richard Pilbrow, Bob Scales, Robert Long, Brian Hall, Ben Boltin.

The third utilizes a different approach. While embracing the principles of vertical stacking of

audience for intimacy and flexibility, the room deliberately utilizes architectural elements as a springboard upon which the director and scene designer may play. Inspired by Downstage Theatre in Wellington, New Zealand, these rooms have built in architectural opportunity; doors, windows, towers, balconies to form a basis for theatrical experiment.

Addison Theatre Center, Dallas, Texas 1992

A rectangular space with over 100 doors, open on two sides to the exterior, within which the floor levels and room volume may be entirely reconfigured to allow the creation of a complete environment for each production. Architect Gary Cunningham. TPC Team Richard Pilbrow, Bob Scales, Robert Long, Ben Boltin.

Emory University 1996

A four auditorium complex which includes a unique Nautilus shaped flexible theatre. Architect Peter Eisenman. TPC Team Richard Pilbrow, Robert Long, Peter Lucking, Ben Boltin.

RESTORATION & RE-USE

The restoring of historic theatres to past glory and future success demands a balanced appreciation of architectural and theatrical values. TPC's work on inserting new technology into old buildings led to a radical new appreciation of the extraordinary power contained in the intimacy of nineteenth century theatres, making them very relevant to all future development.

Theatre Royal, Nottingham 1976

This theatre marked a turning point for TPC in their appreciation of theatre architecture. The subtlety of the three dimensional auditorium, the product of three centuries of theatre design evolution, serves as a new inspiration for the design of modern theatres.

Lyric Theatre, Hammersmith 1979

This reconstruction of an old theatre on a new site served as a model for the later transplant of the Dunfermline Opera to Florida.

Asolo Center for the Performing Arts, Sarasota 1990

A new theatre built in Florida which began life in Scotland in 1920. For TPC the team includes David Staples, Iain Mackintosh, Jerry Godden and Anne Minors. Architect Stuart Barger.

Bluma Appel Theatre, Toronto 1983

This theatre opened in 1970, a product of the concrete fan-shaped era and failed consistently for a decade. TPC were invited to suggest enhancements, and, led by Iain Mackintosh, proposed a new theatre with boxes and balcony to be built within the old shell.

'Old fashioned' vertical stacking of an auditorium takes up less site area and the newly successful theatre is now enhanced by an increase in seating capacity from 830 to 890 as well as greatly enlarged lobbies, restaurant, and sales kiosks, etc.



The Tricycle Theatre in Kilburn.

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- Cabot Hall, Canary Wharf - lighting, sound and rigging



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Bayfront Performing Arts Center, St. Petersburg 1988

The same medicine applied to a sixties fan-shaped multi-purpose hall, totally devoid of acoustics or atmosphere. TPC with Iain Mackintosh, Anne Minors and Jerry Godden created a handsome new opera-style auditorium within the old.

Savoy Theatre, London 1993

Damaged by fire, the Basil Ionides 1929 theatre will reopen in 1993. For TPC the team includes Jerry Godden, George Ellerington and Richard Borkum

Gary Theater, San Francisco 1994

Damaged by earthquake this, one of America's finest turn of the century theatres, will reopen in 1994. Architect Gensler Associates. The TPC team includes Richard Pilbrow, Bob Scales, Peter Lucking and George Ellerington.

SPACES FOR EDUCATION

TPC have been involved as educators in technical theatre since the founding of the Theatre Projects

Trust training course at LAMDA. School spaces do not have to be bland characterless halls and TPC's projects combine facilities for training future generations with age-old principles of theatre design.

Westminster School, Connecticut 1989

Architect Graham Gund. TPC Team Iain Mackintosh, Robert Long.

Milton Academy, Massachusetts

Architect Kallman McKinnell & Wood. TPC Team Iain Mackintosh, Robert Long.

Whittier College, Los Angeles

Architect A.C. Martin. TPC Team Wally Russell, Jerry Godden.

University of Richmond, Virginia 1993

Architect Marcellus Wright, Cox & Smith. TPC Team Bob Scales, Peter Lucking, Curtis Kasefang, Ben Boltin.

University of British Columbia, Vancouver 1995

Architect Bing Thom. TPC Team Richard Pilbrow, Bob Scales, Peter Lucking, Duncan Webb.



'All in the Wrong' performed at the Orange Tree Theatre, Richmond.

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Activating the Crossover

Tony Gottelier with Brian Croft and Alan Thomson at Theatre Projects Services London

Brian Croft's career was moving gently along traditional theatrical lines, until it took a sharp left turn in the late sixties with his appointment as technical director at the ICA. "In those days anything and everything was considered art, including conceptual art, performance art and that included pop music." Brian remembers. "This brought me into direct contact with the emerging Rock brigade all of which was just getting started at that time."

No sooner had the ICA opened in the Mall with a liquid light show provided by Mark Boyle himself a serious artist, than they started staging experimental bands such as The Soft Machine and Julie Driscoll. This quickly led to more commercial performances by such groups as Country Joe and the Fish and The Chambers Bros. "The Chambers Brothers were a turning point for me," says Croft, "because it brought me into contact with their American production manager Chip Monk, who in many ways started it all." Brian recalls Monk as a brilliant innovator and credits him with designing the first pre-rigged truss systems and suggests that he may well have been the first lighting designer to use the now ubiquitous, Parcan. Of course, the impact then of such radical introductions cannot be underestimated. The new groups were intent, even at that early point, and under some pressure from the record companies, to stage ever more flamboyant performances on tour. So, it was already clear that fast rigging techniques were going to be essential.

The next thing he knew, Chip was asking Brian to go out and manage the technicals for a Crosby, Stills, Nash and Young tour. Brian feels in hindsight that the reasons they chose him in particular for this and subsequent tasks

what that the American guys recognised something lacking in themselves.

Thought they had come through Carnegie Tech, or the drama department of NYU or had worked at the Fillmore East, they lacked the theatrical discipline which Croft had himself acquired over 15 years as a stage manager. "Monk would have all these fantastic idea, but could never get them ready for curtain up." Sometimes graphic descriptions were given on the PA of the equipment being fitted up, while the poor long suffering audience waited for the stage to be completed pending the appearance of the band. Subsequently, Croft found himself in some demand, taking more and more leave of absence from the ICA. "I can remember at the beginning being in some panic as to how we were going to manage all those lights. I ended up going to Bob Simpson at Electrosonic and he cobbled together a 19" rack containing the first thyristor dimmers to go on the road," reminisces Brian, now in full nostalgia mode.

After Crosby, Stills etc Croft went straight into the deep end with production management for a Stones tour which took him away from the ICA for six months. Coming home from one extended leave of absence in 1971, perhaps not surprisingly, he found someone else sitting in his chair at the ICA and shortly afterwards, still not totally committed to R&R, he left for the National Youth Theatre. Once again, the telephone continued to ring and Brian, and his assistant at the NYT, John Brown, were a familiar sight at concert venues all over the country, driving up in a rented three or five ton truck. As it dawned on him that there was, indeed, serious money in the business of pop music, Croft, together with Rikki Farr, set up Electrosonic. "By 1973, when we formed the

company, the bands were no longer operating out of the back of transit vans," is the disarming way in which Brian describes it. In fact, he had been offered a major Stones tour as the main contractor, by which time they had graduated into three artics.

Croft is staggered to remember that he commissioned Paul Ollet to design and produce the first of what were to become the standard Avolites dimmer packs without making an on-going deal. "Using Electrosonic Portapacks had always been a stop-gap measure and Paul's dimmers were the first real compact high density dimmer systems," recalls Brian. "All of this was very much economics-driven and even then the pressure was on to provide more and more special effects and systems." Crucially, the bands and their managements were prepared to provide huge sums of money to cover the development costs to produce things that might give the artists an edge in performance. Chicago, The Beach Boys, Emerson Lake and Palmer, Yes, The Stones, and The Who were all bands which were pushing the edge, according to Brian's account. The tours got bigger and the sums involved got larger.

Nevertheless, much of the equipment used was existing industrial product adapted for the purpose. Chip Monk originally used radio masts for his trusses and Galloway hydraulic rams from the cargo handling business were adapted for driven ground support systems for The Stones. Industrial chain hoists, beam trolleys and Genie towers were other examples taken for granted today. And Electrosonic made quite a lot of money importing Parcans from the Altmans in Yonkers; indeed many people assumed that they were the exclusive distributors, though as with Ollet, it never crossed their minds to sew up such a deal.

Later, partner Farr headed for the States to set up a US base and it was there that the forces

Some recent major events equipped by Theatre Projects Services



Red Square, Moscow, 1992.



The Wall, Berlin, 1990.

photo: Paul Slattery, courtesy Fisher Park

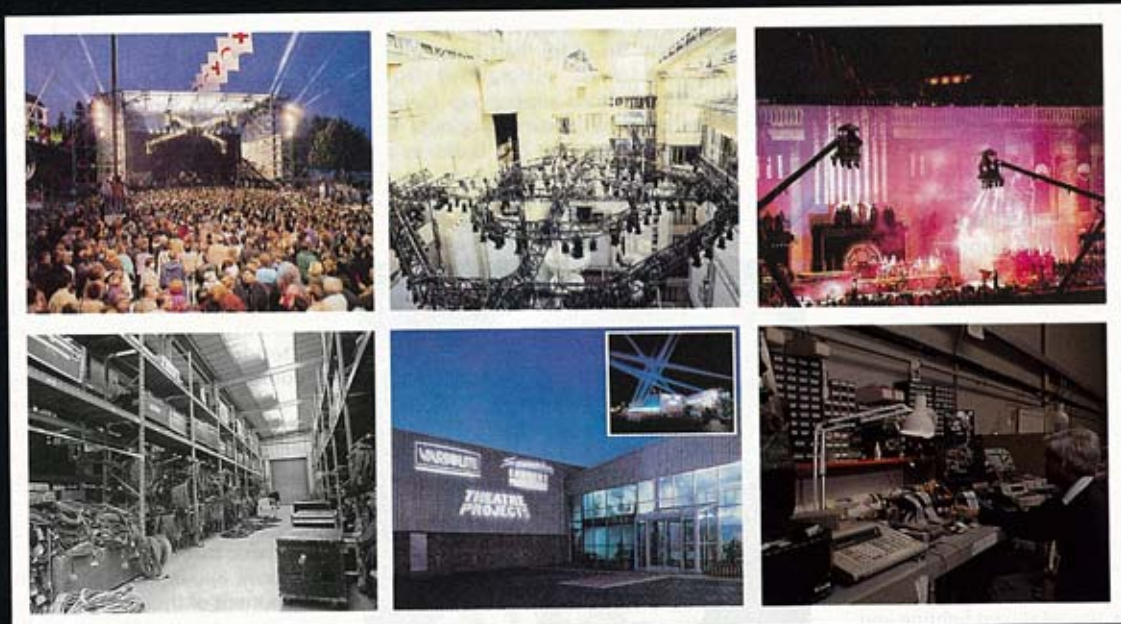


The Royal Tournament, Earls Court London, 1991.



Aida, Earls Court London 1991.

THE FIRST 35 YEARS



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Visitor to Greenford: Richard Pilbrow (right) with Alan Thomson and Brian Croft.

were joined with Tom Fields Associates of Boston, which had grown out of working for Chicago and The Beach Boys. Thus, the company acquired the handle TFA and TFA Electrosound. Later still they were approached by Theatre Projects, then under the full and benevolent control of founder Richard Pilbrow, specifically to provide the expertise that they lacked in the concert and R&R environment.

"TP's original interest in rock was totally inspired by Richard, who was keen to acquire the expertise necessary in order to move into this new and exciting area of entertainment," notes Croft. "Pilbrow was the first to foresee the potential crossover between rock and roll and the theatre long before anyone else. He never saw us as the delinquents in the way others were perceiving us. There certainly was a great deal of antipathy from the theatre side at the time." Nothing pleases Brian more, as an ex theatre man, than the fact that those days are over. He cites the case of pop operas such as the recent production of Carmen at the NEC to prove his point that the crossover is now virtually complete. "Hopefully, new instruments such as the VL5 will finish the job," he says, not missing any opportunity to promote the latest Vari-Lite product. Once again Pilbrow was the first theatre lighting man to state publicly, in the September issue of L+SI, that he planned to use this new automated luminaire in an opera production in the US early next year.

The move to TP headquarters off Long Acre brought another unexpected bonus. Big money was now entering the industrial exhibition area, with car, aerospace and computer launches leading the way. They also needed the fast rigging and racking systems provided by touring rigs and the expertise to make it all come together. "These companies threw a great deal of money at it with vast staged lighting and AV extravaganzas," notes Brian, "and this enabled people like David Hersey and Andrew Bridge to span the gap and eventually to bring it all full circle back into theatre with the mega musicals of the eighties." Fortunately, Pilbrow had made a practice of nurturing such young lighting designers in their formative years. Indeed, as one product of that school told us recently: "You ask me where we would all be without Richard Pilbrow? Sweeping the streets is where we'd be!"

Meanwhile, things had moved on and the time came when, due to some flawed investments elsewhere in the TP Group, the bankers, lawyers and accountants and the other assorted grey suits of the financial piranhas were gathering at the door in Long Acre. Eventually, Theatre Projects (Hire) was sold to Samuelsons, the film lighting specialists, and

Croft moved with them, first to Nine Elms and later to the present location in Greenford. It was here that re-organisation separated Brian from TP. With the rapid expansion of wet hire for the range of Vari-Lite products, an agency which Samuelsons had earlier taken on in competition with their new acquisition, it was decided that TP and Vari-Lite Europe were natural bedfellows. Nevertheless, while it made sense for them to share an office and common cause, it was decided to split the management roles, with Croft heading up Vari-Lite and Alan Thomson responsible for the standard lighting hire side of Theatre Projects. Again, the end of a cycle can be detected here. In the best rock and roll tradition, a radical concept originated in a sound hire company, Showco, headed up by ex drummer and Led Zeppelin sound technician Rusty Brutsché, had been funded into existence with substantial initial development cash from supergroup Genesis. Now, like the many Sixties dropouts who occupy seats of power in big business and elsewhere, the product had come of age and become very serious business indeed. And bringing this story right up to date, it can be



Roger Dix, MD of the Lighting and Sound Division of the Samuelson Group which includes Theatre Projects. "The lighting team have established themselves as world leaders in 1992. The scale of our hire stock, plus the significant investment in special effects and support technology will continue to make us strong in special event lighting all over the world as well as in Europe and West End Theatre. We remain committed to all areas of business, significant capital expenditure on hire stock (to include development of a specialist light), improved facilities such as CAD design, a new fabrication facility, the launch of Multi-Art show control and the Portable Production Facility, and commitment to 24 hour service, 365 days a year."

revealed that Genesis themselves will be taking the VL5 on the road this month in a series of club dates prior to a major concert appearance at Earls Court next month.

So enter Alan Thomson. Alan had joined TP on the production side, about a year after Samuelsons took them over, after a history of the theatre rudely interrupted by two years in the oil industry. He was originally charged with sorting out the physical move to the new premises with Brian Croft and others and to rationalising the stores, which had become pretty chaotic. "If you wanted a nut and bolt, you more or less had to pick it up off the floor," is the way Alan remembers it. Later, following Croft's move to the Vari-Lite product, and numerous other changes at the top, Alan succeeded to the TP chair. "I keep trying to make the operation smaller and more manageable, but it just grows and grows as the rigs get bigger and bigger," Thompson told me with resignation. But, he still couldn't mask his excitement when showing me the plot for the massive set-up for the Queen's fortieth accession celebrations held at Earls Court at the end of October which TP would be providing.

I asked Alan Thomson what had changed over the last few years, for example 'what is on TP's shelves now, that wasn't there ten years ago?' "Well, there are still a lot of Parcans that's for sure, but the main changes have been in power distribution systems and in the area of control," was the candid response. Changes in regulations and the tough demands of touring had forced the necessity to build much safer and efficient means of power distribution. Multi-channel control systems had also changed the whole face of cabling and lighting structures, together with creating the demand for 'dimmer-per-channel' operated rigs. More recently, digital control and DMX was helping to bring some rationality back into the whole complex network.

"Allowing for the fact that most of the advances in luminaires in recent years have been in automation, which is Brian's baby, I see very few differences in that area," Alan reports. "Gel scrollers are a recent arrival and in special effects, cracked oil machines." Other than that TP still rely on the old ellipsoidals, Parcans, CCT Silhouettes and 1,2 and 5ks of yesteryear. Recently, HMLs have come to the fore which they tend to use with colour changers. Batters also have undergone a bit of a revolution (pun intended) with the arrival of the DHA motorized and colour changing batten.

Thomson also cites the case that, even ten years ago, TP were sending out dimmer racks of 24 channels "six feet high, five feet wide." Then, largely as the result of the acquisition of Croft's TFA Electrosound, the new world of high density dimming where 72 channels were available from a five feet high, 19" wide rack, became apparent. Alan Thomson is another proponent of the crossover theory, so beloved of Brian Croft. "The disciplines of theatre, industrial events and the concert world are not dissimilar and are moving closer together every day, due in part to the sheer economics involved," says Thomson.

That the credit for this thaw in relationships and the greater benefits which can be obtained from the sharing of the results of technological developments in our industry, can be laid at the door of one man - a visionary with a mission (but not a missionary!) is an extraordinary achievement. For Richard Pilbrow, whose professional generosity is renowned, this is an accolade which I am sure he would welcome with due modesty, if not for his astounding contribution to the production art, as a fair reward for a lifetime devoted to the esoteric subject of entertainment lighting.

"Well, after all, we are all lighting people, my dear," I can hear him saying.

The First Sound Designer

Seeing so many youthful faces at the recent Theatre Projects anniversary party brought home to me that 35 years is not really a very long time; and yet the inevitable reminiscing highlighted the remarkable advances in theatre technology which have taken place during this short period.

1959 was particularly significant for me in that I was asked to create the sound for a series of plays at the Lyric Hammersmith, produced by the 59 Theatre Company (now metamorphosed into the Royal Exchange Company in Manchester). At that time, believe it or not, we were still using 78rpm lacquer discs played on 'panatropes', although I did employ an electronic thunder sheet for an avalanche effect and I also placed loudspeakers in the auditorium - an exciting innovation which caused some press comment!

The artistic team also included one of these new chaps, a lighting designer who, according to one elderly company manager I caught surveying a rig of some 60 luminaires, complained: "They don't light shows these days, they cook them." Apart from the fact that this was where I met Richard Pilbrow, it was also the birth of the 'sound designer'. This came about when the director of the 59 Theatre Company, Michael Elliot, said that he would like to give me a proper programme credit, instead of the usual 'Sound by Theatre Projects' buried somewhere between Wardrobe Care by Lux and Cigarettes by Abdulla. And when asked for the wording, I decided that if Richard was calling himself a lighting designer, I might as well call myself a sound designer. Nothing like inventing your own job description, I say.

Following this successful season, Richard was to offer a small corner in his two room Whitcomb Street office for my tape recorder and portable gramophone. Thus, the Theatre Projects Sound Division was born.

For a few years I carried on creating sound effects for plays, building up our sound effects library, and specifying better equipment whenever possible. The theatre equipment rental companies in those days were Bishop Sound, Stage Sound and occasionally R G Jones. In 1962, the managing director of Stage Sound, to whom obviously I was a minor irritant, offered me a permanent job at a salary of £10,000 per year, great riches compared

with what I was then able to earn. He said that a little set-up like ours would never be able to compete with an established company of their size. I turned down his generous offer. Twelve years later, Stage Sound was acquired by Theatre Projects.

1962 was a milestone year which began with myself and Richard Pilbrow being invited to create the lighting, sound and dramatic effects for Lionel Bart's 'Blitz' at the Adelphi Theatre. For this spectacular musical I had built a special sound effects mixer and the operator (me again) was actually allowed to be in the auditorium; not because I had convinced the management that it would be helpful to hear what the audience was hearing, but simply because there was no room in the wings backstage.

Incidentally, one of the deputy stage managers on that production was Anthony Horder who joined Theatre Projects, and almost single handedly built our first recording studio and remained my partner for many years.

1962 was also the year when I first became involved with sound reinforcement. Up to that date, the major West End musicals simply had five or seven microphones strung out along the front edge of the stage, a few column speakers clamped to the proscenium, and a simple mixer providing overall treble and bass and a master control which the deputy stage manager would turn up for the songs and down for the dialogue.

So long as you had good voices and simple orchestrations, all this worked very well until the innovative designer Sean Kenny began to create sets with large motorized elements which ferried the performers around the stage. One day I received a telephone call from Sean exhorting me to catch the next train for Manchester where Harry Secombe as Pickwick and Anton Rodgers as Sam Weller were careering around the stage of the Palace Theatre on one of his more ambitious sets, completely unable to make themselves heard.

I pointed out that I was a creator of sounds (an artiste, not a technician) and knew virtually nothing about vocal reinforcement. But Sean had already sold me to the producer, Bernard Delfont, as the greatest sound expert in the country. Cutting a long and nerve-racking story short, the problem was eventually solved by using a combination of the traditional float



David Collison with Duncan Webb at the Royal National Theatre.

technique with a series of directional microphones strategically suspended on wires and pulleys which could be lowered as relevant parts of the set came to rest.

As far as I can discover, this was the first West End musical to have a multi-microphone rig with the sound control in the auditorium so that the operator could follow the quite complicated plot. Of course, having set the precedent, I was able to use the same technique for subsequent musicals.

In fact, the following year I managed, after fearful negotiations, to persuade the administrator of the newly formed National Theatre Company to install a permanent control position at the rear of the stalls in the Old Vic. I believe that this rack of three Warite tape decks with a purpose-built microphone/effects mixer crammed into the space of only three stalls seats was the first theatre sound control room in the country. It seems almost unbelievable that I had so much difficulty in persuading managements that the quality of sound in theatre could be improved if the person twiddling the knobs could actually see and hear the performance.

Then, in 1971, came the other great milestone; the first use of a studio-type mixing desk with slider faders, stereo panning and tone controls on each input channel. For the musical 'Company' Stephen Sondheim had written a complicated score with orchestrations which incorporated an off-stage chorus and called for certain instruments to be featured. As was now the fashion, the set was open plan and on several levels which gave us cast pick-up problems. Wireless microphones were not yet reliable enough, so to complement the 'floats' we used suspended shotgun microphones for the more distant and higher levels of the set.

Now, it so happened that the printed circuit board had recently been developed and a company in Windsor called Alice had produced a mixing desk which was a fraction of the cost of the hand-wired consoles used in recording studios. We purchased our first 14 channel desk and discovered the joys of being able to equalise individual microphones, add a touch of echo (another novelty) and do the whole thing in stereo! This truly was a first. We were even ahead of Broadway where they were still using stacks of small mixers with rotary faders.

Little did we think that within less than a year we would be installing a 100 input console at the Palace Theatre for the London premiere of Jesus Christ Superstar. These were heady days.

The number of today's top lighting designers who spent their formative years in Richard Pilbrow's 'stable' is widely known, but Theatre Projects has also played an important part in the lives of some of our leading audio experts. To name but a few: Rob Barnard - head of sound at the Royal National Theatre, Julian Beech - formerly head of sound at the RSC and then the RNT and now director of Autograph, Derek Zieba - also formerly head of sound at the RNT and now general manager of Dimension Audio, Chris Jordan of Martin Levan



The early days of sound design: David Collison at the controls during a rehearsal for 'Jesus Christ Superstar' in London.

Sound Design, plus independent sound designers John Del Nero, Roger Norwood, and Richard Rogers, and electronics designer Sam Wise of Sam Wise Associates. And I must not forget the chap who originally set up the TP sound hire department and went on to run the lighting hire operation, Roger Straker. He is now technical director of my company Adventure Projects Limited, involved in the creation and installation of exhibitions and visitor attractions.

Not one of the above mentioned audio companies was even thought of when we were busy creating the sound for such shows as Fiddler on the Roof, Maggie May, Applause, Mame, Sweet Charity, Grease, Joseph and the Amazing Technicolour Dreamcoat etc.

I came away from that party thinking: not a bad legacy really.

David Collison

Heroes, Inspiration and a Good Book

Graham Walne asked the question in closing his PLASA show report. In his early days, people had longed to meet the 'names' of the industry, the Benthams of this world. Do the younger generation, he wondered, simply come to look at the Vari*Lites?

My answer would be no; more than anything else, I would love to meet Richard Pilbrow. If it's possible to have a theatrical 'hero', then he is mine. Which isn't bad going for someone whose work as a lighting designer I've never actually seen - apart from the National's foyer lighting! But he did write the book. I can't remember how I first got interested in theatre but, having interests in music and hi-fi, I started off looking after the sound for school shows. One day, in the library swatting up on my new

interest, I stumbled across a hardback entitled *Stage Lighting*, which I took home and spent an evening reading. And I was hooked. Suddenly there was a whole new world: light as 'art' rather than just illuminating the stage, as I had tended to assume. Revelation!

And the author. This bearded man, spending all his time (rather than just the time between lessons) in theatres, working on some of the biggest shows with the most important names in the theatre. Travelling to all parts of world while at the same time finding time to work on the National Theatre and the Barbican, and run Theatre Projects - perhaps the best company name in the business - and produce West End shows, and films. What a life!

So I became a lighting person. I got a set of stencils and symbols and felt like a 'real' lighting designer. And I started lighting anything and everything, all based on the principles he set out. My 10 Patt 23s weren't quite the huge rigs shown in the book, but the book's success was that it emphasised the design approach, rather than just the results for big budget West End spectaculars.

At the same time, I started trying to track down anything else Richard had written, to find what other words of wisdom the guru had penned: old articles in *Tab*, the ABTT publications and *Cue*; writings about Lightboard and the other technical innovations at the National in the *Architectural Review*. I collected and studied them all. What brilliant work Theatre Projects did. How I wanted to be part of it. On making enquires, it didn't seem to be happening any more. This was the mid-eighties, and suddenly Richard Pilbrow didn't seem to be lighting shows anywhere. Neither did he seem to be writing for anyone. He didn't appear on the letterheads of mail from Theatre Projects. None of the theatre

magazines seemed to make any mention of him. I don't know what was happening at the time, save for the hint of "a mix of stupidity and dishonesty" taking TP into deep financial trouble, mentioned in a recent article in *The Stage*. At one point I came to the conclusion that Richard Pilbrow had died!

A couple of years later was a come back. His writing appeared again, talking about the National once the drum revolve had proved its worth in *The Shaughraun*. He was a vice-president of the National Youth Theatre. He was lighting shows again, in America where he was now based. And, most recently, giving a talk about his work in a National Theatre platform performance, which I deeply wanted to attend - but I couldn't, because I was in Japan, working in theatre as I had dreamt of doing when I first read the book. For that inspiration, thank you Richard Pilbrow.

Perhaps when it happened for TP, it was a case of being in the right place at the right time. I don't think anyone is now going to match Theatre Projects' achievements, of revolutionising technical theatre, and later theatre design as a whole. And I don't think there is a company around at the moment who, in ten years time, will be able to say that they produced the equivalents of David Hersey, Andrew Bridge, Nick Chelton et al - no-one seems to be offering any 'official' route into lighting design. More's the pity.

There is, I believe, a new edition of the book on its way. Lighting design has moved onwards and upwards since the last edition appeared, and I look forward to reading the master's views on it. And perhaps, Richard, it's time to light another show in Britain, so that I can actually see your work.

Happy 35th anniversary!

Robert Halliday, National Youth Theatre

35 years

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Theatre Projects at the National

A Retrospective

To many, the initials of Theatre Projects long ago also came to stand for Technical Progress. Right from his youthful early days as an adventurous but perfectionist lighting designer Richard Pilbrow adopted the professional approach that demanded detailed advanced planning and close attention to getting the best possible results from the best available technology. One immediate result was that to get what he wanted he imported German and American spotlights, which gave Strand a pressing reason to take a new look at their own designs: another was that he and his team earned the respect of professional engineers for their ability to evaluate theatrical technical problems realistically. Thirdly, the combination of practical experience, intelligent foresight and attention to the detail of planning and cost control led theatre managements to seek TP's advice on much more than lighting.

The overall result was expansion into sound design, production and consultancy and, with immediate success in these fields appointment to bigger and bigger projects. Naturally, when the time came, TPC were appointed theatre consultants for the long awaited new home for the National Theatre on the South Bank site.

It is difficult now, in 1992, to remember the technical confidence of the 1960s. The Americans and Russians were achieving the impossible by sending rockets into deep space and landing men on the moon, the transistor had revolutionised electronics, and micro-computers were about to start their relentless intrusion into everyday life that soon led to microprocessors and a PC on every office desk. This was the background to the planning for the National's technical installation. A 'once in a lifetime' opportunity to equip two theatres* to the highest standards: a feeling that, technically, anything was possible, and the promise of generous, though not unlimited financial backing. The planning committee had only two things to do to ensure success; first, to decide exactly what they wanted and second, to appoint suitably competent contractors, preferably British.

Such a situation depends on complete and accurate technical specifications. Richard Brett, a qualified electrical engineer, left the planning and installation department at the

BBC to direct this work and in turn he gathered a team of experts around him. The building committee said they wanted power flying, elevators and revolves, and the best available lighting and sound installation in both theatres. TPC had to turn these 'wants' into engineering specifications detailed enough for fair competitive tender and for the other building specialists to use to plan their aspects of the work.

The lighting control was clearly a matter for Pilbrow himself. The only two UK companies able to handle the size of system needed were Thorn and Strand. Strand, newly recovered from the set-back of having Thorn steal their television markets, offered enthusiastic co-operation to develop a new system. The result was, eventually, Lightboard. Although building on DDM and MMS technology, Pilbrow's ideas of a palette to mix pre-balanced groups of lights, extensive playback options, VDU displays and portability (so that the panel could be moved into the stalls for hands-on rehearsal) were incorporated into the specification and the operating logic rationalised to give a powerful user-friendly system big enough to control up to 1,000 dimmers and able, with the help of floppy disks, to store sufficient cues for the planned extensive repertoire of productions. Also specified, probably for the first time ever, was the 'movement' panel designed to operate slide changers, colour changers and spotlight pan, tilt and focus, all from the same master controls and memory. The record shows that Strand won the contract and installed the system on time and without problem. Several dozen similar systems were made and sold before the high cost of the central mini-computer made it too expensive. Private files show that the data systems for the movement control almost proved too expensive from the start and many strong letters from the NT building committee were needed before it was commissioned. It still works, though now driven from an add-on to Galaxy-3. It pre dated the Vari*Lite system by some ten years. Eventually, the Lightboards were retired and replaced by Galaxy-3s after some 14 years service having provided the NT lighting designers and operators with unrivalled flexibility and reliability and set a standard for all future top-of-the-range systems

that lasts today.

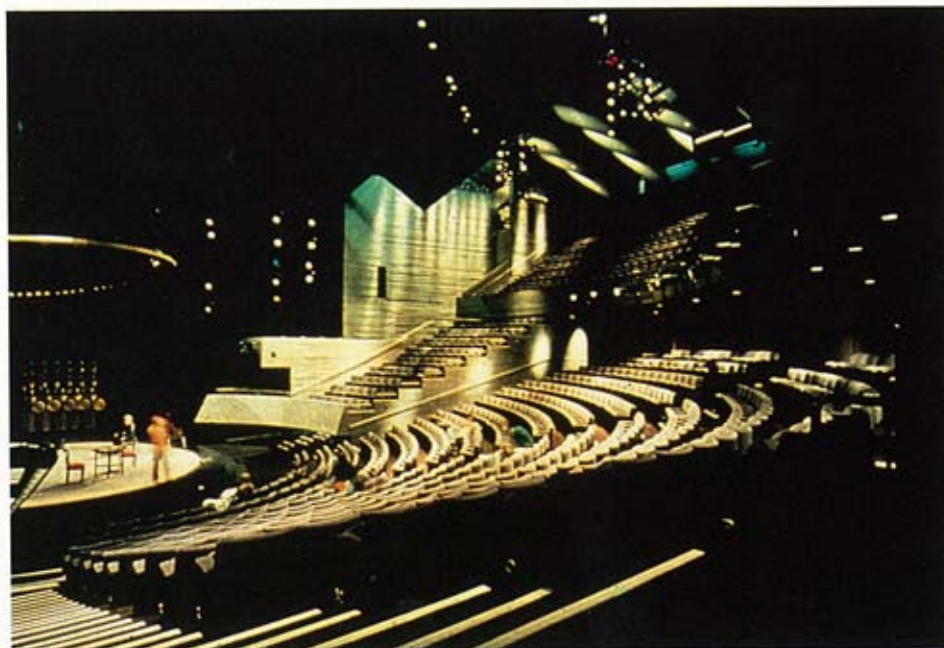
This sound system specification must have attempted the same over-the-horizon objectives but it was never my field of interest. I remember talk of computerised patching and routing but doubt whether this was achieved. What I am more sure about is that the NT users soon made extensive modifications which suggests both that new technology had appeared and that sound desks can be more easily scrapped and replaced than lighting controls and machinery.

The designs for the stage lifts, revolves and flying systems were a totally different problem. No one in Britain had much experience of building the complex structures and machinery needed for these systems, let alone the experience of adding reliable power drives and electronic control. Conventional counterweight flying, while possible for the Lyttleton Theatre, would not be suitable for the large open stage of the Olivier and, anyway, the building committee wanted power operation and precise computer-controlled positioning. The solution, adopted reluctantly, split the responsibilities between established theatre engineers who built the structures, and a firm of electronics specialists who provided the drives and control.

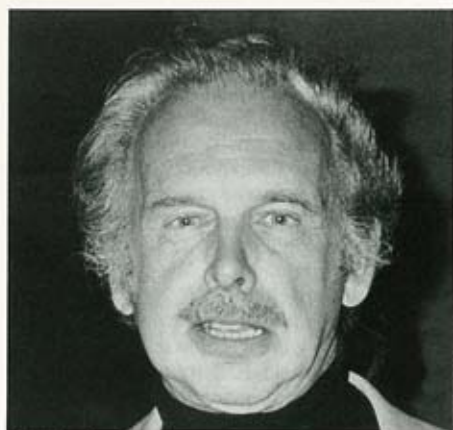
The specification for the Lyttleton required double purchase power driven counterweighted flying, a set of hydraulic lifts and a mobile revolve. Luckily, the counterweight system had the option for hand operation as the contractors were never able to make the power system work correctly. The relatively unsophisticated lifts and revolve, though, worked well enough.

The unconventional form of the Olivier Theatre demanded special solutions. Lighting bars were specified to be short 8ft TV type hoist with lighting circuits built into the lifting system. For scenery, another TV design using movable point hoists was chosen with full variable speed control and computerised grouping and dead control. At stage level the now well known drum elevator incorporating two internal lifts and revolve motion was devised, again specified to have precise computer control of speed and position. The lighting bars were not a problem and were commissioned on time and work to this day. The power flying, using cyclo-convertors for precision drive and a PDP 11 mini-computer took longer to commission. The real problem was safety, a rather neglected topic in the early 1970s, but one which became of ever increasing importance after the Health and Safety at Work Act of 1974. Flying large lumps of scenery over actors and stage crew requires absolute reliability and predictability and, at first, the system was not this good, so for a while it could only be used for rigging. Nevertheless, the contractors eventually overcame all problems and since about 1982 the Olivier has been able to use the power flying for the most complex scenic movement through the performance in a way that manual counterweights could never hope to achieve.

Both safety and structural problems delayed the use of the drum revolve. First, the building timetable had to be cut so the Olivier opened before the drum was commissioned. To do this a false stage was built over the drum and work proceeded with great difficulty underneath. The false stage would be removed when the drum had been proved to work but the drum could not be tested with the false stage in place. Impasse for a while. Then, rightly, officialdom and everybody else had to be convinced that a safe method of work could be devised. This involved some redesign of the interlocks and the provision of TV cameras and monitors at



The Olivier Theatre at the Royal National Theatre, on London's south bank.



Bob Anderson.

the control position so that the operator could be sure that nothing was going wrong. By sheer persistence the National Theatre Board, the contractors and TP solved the problems and eventually, in the late 1980s, the public saw the spectacular effects available from the movement of the elevators and the simultaneous rotation of the complete drum.

Now, in 1992, it seems possible to say that the decision to specify these novel advanced technology theatre systems was justified and a success. Lightboard, without a doubt, was a triumph. The Olivier power flying also provided British repertoire theatre for the first time with the experience of seeing scenery moving with a precision and flexibility that only the best counterweight fly floor crew could attempt to match, but never with the fly tower height and scenic loading made possible by the motorised system. The drum system, a much more specialised piece of technology, fills a need, though not one likely to appear in many

other theatres. The manufacturers of Lightboard have gone on to provide many new designs of control system, both large and small, and retain their world-wide reputation for excellence. The contractors for the various flying and stage elevator systems however all lost a great deal of money on their ventures and most are no longer trading. However the TP specialists, and the ex-TP specialists now running rival consultancies, all learned a great deal and can now offer designs and specifications which are better, cheaper, safer and more reliable than the systems designed 20 years ago. The lighting systems have already served their time and been replaced. The flying and elevator systems must also be at the end of their expected working life and their electronics, if not the machinery, must be replaced soon to avoid embarrassing failure. Britain still has no obvious suppliers for such systems but, now we are Europeans, the theatre's own staff, or their consultants, should find suitable skills and experience not too far away, though at a price.

In the spring 1979 edition of ABTT journal *Sightline*, the editor, Frederick Bentham, himself an engineer and theatre technologist of world repute, reported on a lecture by Richard Brett to the Institution of Electrical Engineers.

He reported:

"... there was awe-struck admiration for the comprehensive and wide ranging coverage ... of backstage requirements ... and ... there seemed no aspect which had not been thought out in all its detail and specified in terms of modern technology."

Thirteen years later the achievement still seems impressive, even with the hindsight of what did subsequently go wrong. Theatre consultants do not sell infallibility and must take care that the future they see is realistic, even if sure that technical advance is what their

customers are demanding, and then apply to the utmost proper engineering skills and judgement. TP at the National certainly ensured technical progress, if not quite achieving technical perfection.

Bob Anderson

**Now known as the Lyttleton and Olivier theatres. The Cottesloe was a much later project.*

Heady Days!

When I arrived in England in January 1968 - literally off the boat, in this case a Greek freighter - I had only one telephone number as a potential contact. Fortunately the number was Theatre Projects at 10 Long Acre. The number was given to me by my old friend and college mate Paul Marantz who had worked on a project at Sotheby's with a Michael Wilson and someone called Richard Pilbrow. A brief chat with Michael which went on for four hours led to an interview with Richard. In spite of the fact - or because of it - that I was unwittingly somewhat rude about a play he had lit, he offered me a job for the sum of £22 a week, plus 10% of assisting fees and 25% of anything I could bring in myself. This generous salary was to rise to £25 a week should I actually survive the first three months!

The three months went on to be nearly three years, during which time I made many friends. Those were heady days with the likes of Bob Bryan, John B. Read, Robert Ormbo, Tony Corbett and many others downing pints in the Green Man and talking, indeed living, lighting design. I shall be eternally grateful to Richard for such a wonderful introduction to the English Theatre and for providing me with such a rich opportunity.

David Hersey

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Working with TPC

It comes as a shock to discover that one's working relationships with the five individuals who are today the directors of Theatre Projects Consultants does go back for 25 years in two cases and well over 20 in the other three. With Richard Pilbrow it was the West End opening of 'Fiddler on the Roof' in 1967, he as producer and lighting designer, I as a showman revolve operator. Thank goodness Richard wasn't there the night I caused chaos on one scene change by rotation in the wrong direction! With Iain Mackintosh, it was he as administrative director of the Prospect Theatre Company and I as an inexperienced production electrician (to Iain, at least, I still remain 'young Derek'). With Alan Russell (Birmingham Rep), Jerry Godden (Bristol Old Vic) and David Staples (Little Theatre, Middlesborough) too, our relationships germinated in our respective previous careers, in my case with Thorn's deceased theatre lighting division.

Production lighting systems for the Sheffield Crucible and Birmingham Repertory Theatres, in 1970/71 were my own first two contracts working as a contractor to the young TPC, with Richard Pilbrow as principal consultant for both. Richard's contributions were immense, particularly at the Crucible, with design thinking, specification standards and attention to detail leaping ahead for the established norms of the time.

At a time when the country's stage lighting industry was dominated by one manufacturer, Strand Electric, then newly acquired by the Rank Organisation, (will there soon be 25 year celebrations at Isleworth?), Richard displayed great vision and boldness in specifying Thorn Q-File lighting control, a system written-off by some as being suitable only for television studios. TPC and their clients were rewarded with two of Britain's first reliable and successful memory system installations. The audio installations specified by TPC for both theatres similarly showed great forward progress with stage management and communications systems being properly addressed.

My first overseas contract with TPC came in Spain a couple of years later at Scala Barcelona with another Thorn control and dimming installation. Here one could not fail to be impressed by the way that TPC adapted their working methods so successfully to satisfy the differing expectations, standards and operational practices of a demanding foreign client.

Next we jump forward to 1977/78 and Iran. The late Shah had instituted a massive cultural development programme involving 10 major arts centres: Theatre Projects were appointed consultants and set up a Tehran office led by David Staples. Only one Iranian project got built before revolution struck - the Gorgan Cultural Centre, remotely located on the Caspian Sea. TPC decided that with only 22 weeks to completion, lighting, sound and rigging must be handled by a single contractor. My new employer, Glantre Engineering, was appointed, a £0.75 million contract signed, two CL44 freighter aircraft chartered, 25 expatriates despatched to site and the deadline met. This was only achieved through close co-operation and trust between consultant and contractor, with some short circuiting of normal formalities. One lasting memory from Gorgan is TPC's site agent Felix Mulholland heating his daily lunch of Irish stew over a paraffin stove in their site office.

Revolution closed down operations in Iran, but always game for excitement, TPC dodged around Lebanon's civil war to complete two more theatrical contracts at Beirut University



Together again: David Collison, Robert Ormbo and Richard Pilbrow at the Royal National Theatre in September this year.

College and Sidon NSS Auditorium in subsequent years with Glantre as contractors for both. There too, pragmatism determined that the usual rule book be discarded.

Moving to the present, with Richard Pilbrow resident in Connecticut and with the emergence of a dynamic TPC younger generation on both sides of the Atlantic epitomised by Duncan Webb, Ben Boltin, Curtis Kasefang (USA) and David Taylor (UK), Theatre Projects are now achieving tremendous success in the United States. While Glantre's recent stage lighting, sound and rigging contracts for TPC have been carried out in the United Kingdom, we are regular visitors to the States. It has not escaped our notice therefore, that TPC have distinguished themselves through a unique double in that they have imparted the best of British theatrical know-how and technology to America, and the best of American to Britain.

Their word processor's tendency to deliver 'mid Atlantic' specifications (engraving in Icelandic at Canary Wharf - David?!) can perhaps be fully excused. The next 25 years should bring lots more challenge and achievement for TPC with the performing arts as beneficiary. I shall feel privileged if I can share in a small part of it.

Derek Gilbert

A Dream Come True

There is a saying that 'pride comes before a fall'. Well, on Thursday 24th September last, a celebration of Theatre Projects' 35 years, there were many proud LDs who we hope have not yet fallen - not too far anyway! We were extremely proud to have been part of the TP lighting team, too many years ago. Proudest of all must have been Richard Pilbrow who has seen a dream come true; that of establishing an in-house lighting team at TP. Sadly, that is now defunct but the legacy is ever present. All LDs owe him a debt, not only those who were there but all future LDs, since the recognition of our profession, in all its ramifications, came about largely as a result of Richard's foresight, tenacity and above all his inspirational talent. I was about the fifth member of the TP team to join and in spite of career developments, career shifts and the like, that team and subsequent teams have remained and always will remain very firm friends. I remember David Hersey saying in his early days that such a company could not exist (then) in the USA. The degree of co-operation between LDs - sharing jobs, sharing ideas, constructive criticism - was quite unique. I think to a certain degree that attitude has filtered down through our profession to the present day. Thank you Richard.

Bob Bryan

TP People Today

(see advertisement on pages 45 and 48 for contact information)

THEATRE PROJECTS

Alan Thompson, director/general manager
Peter Marshall, customer operations manager
Carole Welsh, customer production manager
Dave Keighley, customer production manager
Ian Bagshaw, production manager
Fiona Thomas, general manager, sound

Brian Croft - general manager,
Vari-Lite (Europe) Ltd

Roger Dix - managing director of the Lighting
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David Staples
Iain Mackintosh
Anthony Field
Lou Fleming
Alan Russell
Jerry Godden
Duncan Webb
Mark Wignall

Principal Consultants

London
George Ellerington
Richard Borkum
Anne Minors, architect
David Taylor
Connecticut
Bob Scales
Robert Long
Curtis Kasefang
Ben Boltin
Peter Lucking, architect

Theatre Projects Sound Hire

Theatre Projects has had a dedicated sound rental department since the early 70s supplying sound systems to many West End productions (notably those designed by David Collison) and to theatre and concert tours throughout the UK. During the late seventies and early eighties they were also designing and building sound equipment. Many of their designs for processing and communications equipment, notably a large mixing desk for the dubbing suite at Pinewood Studios and the forerunner of the Techpro intercom now marketed by Canford Audio, are still in use today.

Over the following years, an increasing volume of business was coming from the relatively young corporate presentation market, where the same standards and the same disciplines of theatre work ideally suited the type of spectacular trade launches that were to

become more common.

By 1980, the core business of TP Sound Hire had made a noticeable shift away from the theatre to these new areas as companies such as Imagination, Caribiner, Commercial Presentation and MMA (now HPICM) were exploring venues all over the world, with new forms of presentation to larger and more discerning audiences.

The acquisition of TFA ElectroSound by Theatre Projects late in 1982 precipitated a move for the now enlarged lighting department from the original Covent Garden location to new premises at Nine Elms in Battersea. The sound department joined them there early in 1984 and with more space, and infinitely better access for the 40 foot trailers that had become a regular sight in the loading bays, the operation continued to expand.

The acquisition of Theatre Projects Services by the Samuelson Group at the end of 1984 provided new capital investment and a new home. The company moved to Blundell Street, N1 in May 1986, after some £75,000 had been invested in refurbishment of the new premises and a programme of computerising the rental of equipment was begun.

Throughout the early eighties, the concentration upon 'industrial theatre' had diverted the department from more traditional theatre. The growth of the Samuelson Group and the eventual move to Greenford offered the opportunity of re-investment in West End productions and as TP no longer had existing equipment loyalties, they were excellently placed to assist when Martin Levan designed a radically different sound system for 'The Phantom of the Opera' at Her Majesty's Theatre. The company faced stiff competition having been out of the mainstream of theatre supply for a few years, but a willingness to experiment with unusual equipment for that environment (notably Tannoy loudspeakers and Sennheiser radio mics) eventually clinched the deal.

Today, Theatre Projects Sound is headed by general manager Fiona Thomas with customer production managers Jennifer Cooney and Dave Perry and a team of 10 full time staff. Among current projects are 'Carousel' at the Royal National Theatre and 'Annie Get Your Gun' at the Prince of Wales Theatre, alongside a host of work for conferences and presentations. Equipment in stock includes Meyer, EV, Community and Turbosound speakers and Yamaha, Cadac and Soundcraft desks. Processing equipment is all 'state-of-the-art'. They are currently developing further software for the Multi-Art MIDI control system.



Sound control set-up for Phantom of the Opera.



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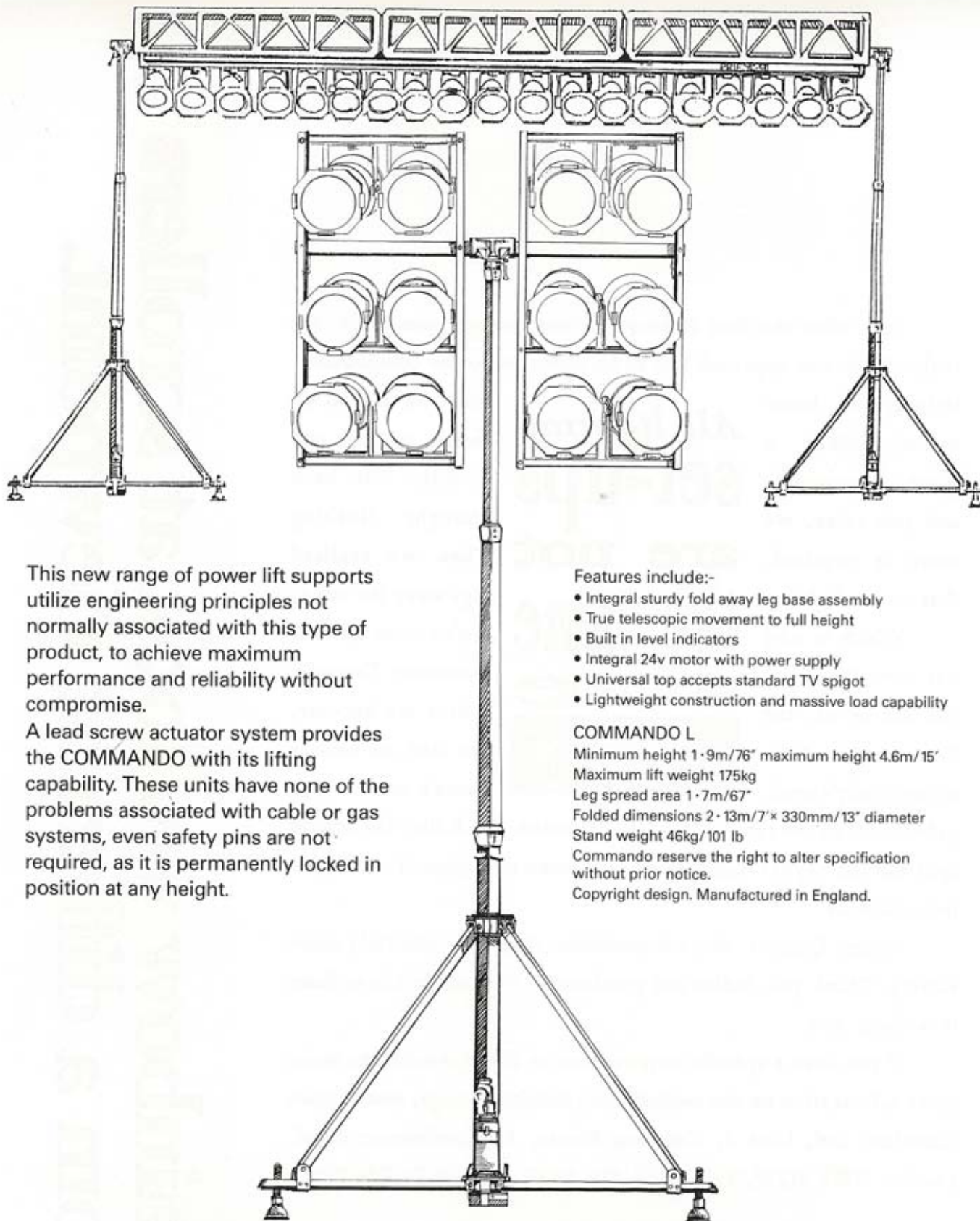
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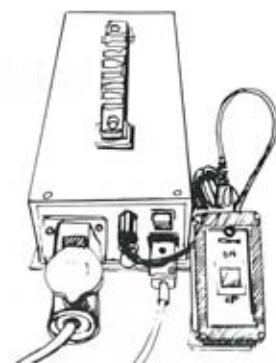


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THE NATIONAL YOUTH THEATRE

Robert Halliday looks at the NYT's Training Structure

There is a theatre company in Britain which is older than the National and the RSC; which has received untold critical acclaim in London and throughout Britain; which has toured abroad to countries including Germany, Belgium, Holland, Denmark, USA, Spain and Russia where Pravda said: "no other theatre company could have staged such a performance . . . the main merits were the feelings of harmony, beauty, classical simplicity and clarity in the portrayal of the most complex and tragic events". And whose membership has included such people as Helen Mirren, Simon Ward and Timothy Dalton on the stage, plus Edwin Shirley, Bill Kenwright, Tim Burnham and Brian Croft behind the scenes.

The company is the National Youth Theatre of Great Britain, whose annual summer seasons have become a regular part of British theatre in the 36 years since the company was founded by Michael Croft. Then, a 'youth theatre' was unheard of, and Croft had a hard fight getting the company accepted. Now, practically every town in the UK offers some chance for young people to perform, and there are also Scottish and Welsh Youth Theatres.

The NYT remains a flagship organisation, however. Under the artistic direction of Edward Wilson, who took over after Michael Croft's death in 1986 the company has expanded once again, producing a sell-out production of the musical 'Blitz!' in 1990, a superb 'Coriolanus' in Glasgow and London and some exciting experimental work on the London fringe.

As always with theatre, to the press and public, the 'stars of tomorrow' of the NYT are what draws attention to the company. Yet NYT members also work on all of the backstage areas on a show, in departments covering design, costume, stage management, electrics and administration.

This year, the season was quite a short one due, in part, to a lack of sponsorship. The main show was a revival of Lionel Bart's 'Maggie May' at the Royalty Theatre, preceded by 'Maps for Lost Lovers', a devised piece at The Place, and followed by 'Cold Comfort Farm' at the Greenwich Theatre. The season started about a month before the opening of the first show, with the actors for that show coming in to the company's base on London's Holloway Road to rehearse. At the same time, the stage management, design and wardrobe teams joined. All of the technical crews, like the actors, are young people aged 14-24, who have



The National Youth Theatre's headquarters on London's Holloway Road.

applied to work with the company, and been selected by interviews during the year - some were veterans of previous years, many were new. Their work was organised by a number of highly experienced professional staff, this year including production manager Paul Cockle and stage managers Linda Balfour and Martin Jady. Electrics, led by chief electrician Ian O'Donaghue and deputy Joanna Joelson, joined a couple of weeks later.

The emphasis is very much on practical training on-the-job - the company has never seen itself as any kind of training institute or drama school, and the crews are largely there to get the shows on; the company's tight schedules and budgets preclude much else. Funding is a perennial problem, with members having to meet the costs of living and working in London, although many succeed in attracting bursaries from the Prince's Trust and similar organisations.

Despite the excellent learning opportunity of working with the professional directors, designers and other staff during the summer, the company itself receives little money to cover training costs - the small Arts Council grant is specifically for auditioning, and commercial sponsors, when any are found,

tend to be more interested in the shows themselves.

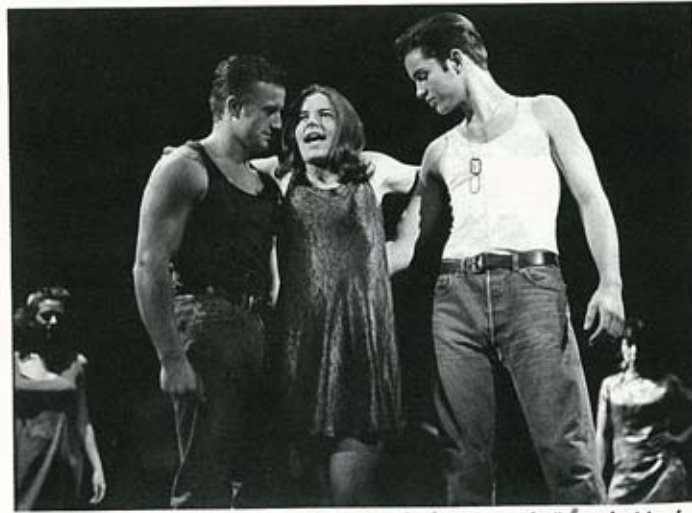
So there are short introductory courses in all departments, and then it's straight down to work. The Holloway base provides a large rehearsal room on the first floor below which sits a workshop space affectionately known as 'the swamp'. This combines work areas for all of the stage departments with storage for a huge assortment of old sets and props. For the all-too-short weeks before the shows move into the theatre, the swamp becomes the main meeting point for the new colleagues and friends in the company.

In the past, when the NYT was based at the Shaw Theatre in London, the tightly packed schedules, with several shows fitting up at the same time, meant the young crews were worked very hard indeed. This season, there were fewer shows, but their challenges made them equally demanding. 'Maps for Lost Lovers' was billed as a multi-media show, and presented the traditional difficulties of shows making that claim - moving and still projection onto moving and still surfaces as the cast explored the different meanings of 'love' given out by their elders and the media.

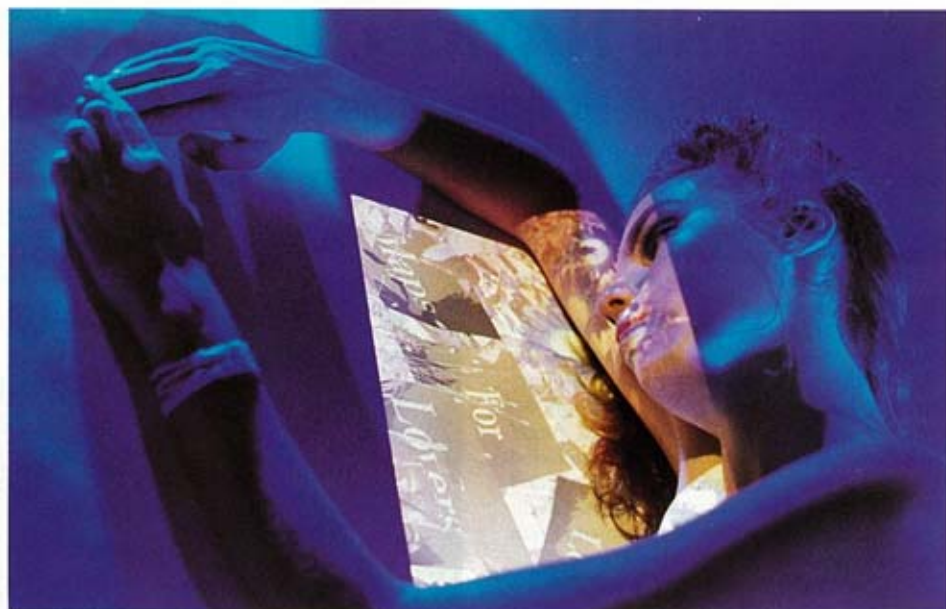
'Maggie May' was up several scales, a West



The 'swamp' workshop area in the NYT's headquarters.



The NYT's production of Lionel Bart and Alun Owen's 'Maggie May'.



Scenes from the NYT productions of 'Cold Comfort Farm' at the Greenwich Theatre (left), and 'Maps for Lost Lovers' at The Place theatre (above).

End musical directed by Edward Wilson and designed by Brian Lee, the NYT's head of design. As with his earlier work on 'Blitz!' Lee took a different approach from Sean Kenny's original, with a skeletal metal framework fixed for the whole show, but transformed by flown gauzes, fences and doorways, and small trucks for the various bars and bedrooms that the tart-with-a-heart story demanded. Kevin Fitz-Simons' compact lighting rig fitted into the remaining space, but the use of Lightpaint scrollers and R&V beamlight followspots front of house and on the set's towers gave a wide range of looks to the show. The electric crew's main challenge was the wiring of the myriad of pea-bulbs into the distant cityscape upstage, and of the huge lengths of rope-light used to create the dazzling fairground in one of the show's later scenes.

The design department's main challenge came with the last show, 'Cold Comfort Farm'. Gill Shaw's design for Deborah Seymour's production made full use of the height of the thrust stage at Greenwich in a twisting set covered in creeping vines and exploding clocks, and populated by a hugely diverse range of costumes - all successfully up and working in a very tight fit-up period indeed.

So, at the end of the season, three months on, new friends, all with new experiences, parted. Few of them had ever worked on a large scale show before - Youth Theatre members are generally people who have worked on school shows, or with smaller youth theatres and enjoyed the experience. Over the summer, they put on a complicated fringe show, a funny,

enjoyable comedy and a West End musical. Design people learnt about building sets, getting them in and out of theatres; wardrobe about the demands of period costume; electricians about putting up big rigs and operating large lighting desks, or the mixing of a big musical's sound; stage management about setting up and running shows, and the perils and delights of flying. Three people who'd never run a prompt-copy before successfully ran difficult, complicated shows.

More importantly, perhaps, they all learnt from the dedicated professional they worked with about the hard work, self-discipline, teamwork and commitment required when working in theatre which, despite what many of the pundits of formal training try to say, is still the most important requirement of any theatre job.

Which isn't to say that everyone who joins the National Youth Theatre will go on to work in theatre or the entertainment business. Many will go into other walks of life, through perhaps with greater appreciation of teamwork than people who spent their summers working simply to build up their bank balance - and certainly with a greater appreciation of the work that's been going on behind the scenes when they come to see a show! That attempt to 'combine creative ensemble work for young people and their right to opportunity and expression regardless of background' has long been the Youth Theatre's aim.

Some, of course, will go into this crazy business, and, as the list of ex-members shows, their experiences in their formative years

obviously serve them well for the rest of their careers. The press reviews harp on about the 'names to watch' on the stage; the next Nichola McAuliffe or Daniel Day-Lewis. The same is true backstage, whether they then take a route through drama school or plunge straight into work. Look out for them!

The National Youth Theatre of Great Britain 1992 Season:

Maps for Lost Lovers - The Place, London

Directed and devised by Dean Byfield. Designed by Laura Hopkins. Original music by Andy Price

Maggie May - Royalty Theatre, London

Music and lyrics by Lionel Bart, book by Alun Owen
Directed by Edward Wilson. Designed by Brian Lee. Musical staging by David Toguri. Lighting by Kevin Fitz-Simons. Sound by Rod Mead for Farrahs. Musical direction by Timothy Higgs

Cold Comfort Farm - Greenwich Theatre, London

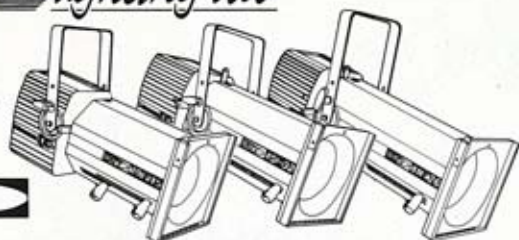
Adapted by Paul Doust from the novel by Stella Gibbons. Directed by Deborah Seymour. Designed by Gill Shaw. Lighting by Kevin Fitz-Simons.

Summer Season staff:

Production manager: Paul Cockle; stage manager Linda Balfour, Martin Jady; chief electrician Ian O'Donoghue; deputy electrician Joanna Joelson; costume supervisor Virginia Dando; deputy costume supervisor Alison Heyes; properties supervisor Helen Morlewska.

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KISS OF THE SPIDER WOMAN

John Offord researches the basic technical background and headlines a London-New York collaboration on the Showtrak automatic scenic control system

Substitute a spider's web with an intricate system of jail bar grilles and replace its ordained design abilities with man's current best in computer control and you get an idea of how much 'Kiss of the Spider Woman' relies on the dynamic of scenic form.

In the words of Robert Hewison in the *Sunday Times*, London's latest opening has as its principal assets the director Harold Prince ('brutal energy and technical skill'), a highly mobile design of steel grilles, and slide projections by Jerome Sirlin.

Straying away from our more usual main 'lighting and sound' theme (although basic information and some more detail on the projection is included later in this piece), I took advantage of the opportunity of a backstage visit to the Shaftesbury Theatre to see the mechanics and trace the source of the imagery.

The contract for the automation was awarded to PLASA members Triple E Ltd, the London-based track and linear motor experts and regular equipment award winners, and it marked the first major UK cooperation between them and Feller Precision of New York. Previously 'workshopped' in New York, the show premiered in Toronto where Feller provided the automation using its Showtrak computer system along with Triple E's Unitrack. In London, Triple E are using the same equipment following an exchange of information and data from the original show.

David Edelstein of Triple E explained: "Collectively, Peter Feller and I have an enormous amount of experience of automating



Complex Jailbar panels and central stage truck that make up the constantly moving set for Kiss.

and producing effects for theatre productions. Our companies have both developed complementary systems and by working together we can offer the producers of shows not just one-off set solutions to a show, but an on-going relationship where original production arrangements can be easily produced, saving both time and money."

In fact, Triple E and Feller Precision have already worked together on a number of shows including *Miss Saigon* in New York. "Peter's system has a tremendous reliability record and a first class reputation," continued David Edelstein. "Basically it's a touring system. All the winches come on wheeled frames and the slave racks and master control are all flight-cased. The system is designed as a complete 'ready-to-go' package, with cabling all prepared. It's a fraction of the size of other American systems I've seen and I think it also

offers tremendous competition for UK systems. However, it doesn't lend itself to concert work; it is more technically appropriate for a show that's going to have a run. It can be broken down into small parts and used independently, but it is designed for multi-channel theatre work."

So, to the detail, and what was tracking where, and a run-down on how no less than 24 winches got involved in the act. "There are four tracks 18 metres long, and on each there are four jail bar panels which individually weigh approximately 150 kilos," explained David Edelstein. "We have four winches per track - one for each panel - giving 16 winches dedicated

to the 16 panels. In addition there are three pairs of tracks with black travellers on which can move over centre. Each pair has two winches, making a total of six, bringing the total up to 22. Additionally, upstage there are a pair of centre overlapping curtains involving one winch. This group of 23 winches are all mounted within a purpose-built steel frame on the stage right fly floor. The 24th element is the centre stage truck, and the winch for that is located understage in the basement."

One of the main problems at the Shaftesbury is lack of wing space. In Toronto all the winches were mounted on stage, but in London it was a different story. "Fortunately there was just enough space on the fly floor, but we had to drill 6" diameter holes through 9" of concrete to enable all our wire ropes to pass through to the framework above," said David Edelstein.

Some very complicated diversion pulleys



David Edelstein at the Showtrak control desk.



The flight-cased Showtrak and one slave rack set up in the Triple E showroom.



View on the fly floor between the double stacked rows of 23 winches.

were employed to overcome the problems, and it took many hours on Triple E's CAD drawing system to work out the necessary routes. All the tracks are hung from chains from steels in the grid, and Triple E employed a Unistrut structure underneath the fly floor so that the tracks could be fixed in a rigid situation, as flexing of the tracks could have caused major problems.

Control lines are taken up to a specially built platform, high up stage right and just below the fly floor, where the Showtrack master panel and three slave racks are located. From here, high up in the Shaftesbury, David Edelstein explained features of the Showtrack system.

"Each of the three slave racks takes eight control channels. Each one has a three-position switch: computer, manual and automatic. On 'computer' it obviously runs on the computer master. On 'manual' you are able to control it from the front of the rack and you have five forward and five reverse limits you can run to. You then have speed controls (0-10) which can be controlled individually. The F1 and R1 limits are always at the extreme end of travel and whatever happens the motor will always stop at one or other of these limits. There are also intermediate limits which can be set on the winch itself to emulate computer positions during the show so that should there be a computer failure or some other problem, you can run the show on the manual limits.

"If you set the switch to automatic, you can set the eight winches to different limit settings and then use the master buttons on each slave rack to control eight winches at a time with the local controls. What usually happens is that a system is worked out so that should there be a computer failure, intermediate limits can be used in the case of an emergency. These don't necessarily correspond exactly to the ones in the show but are quite sufficient given the situation. Fortunately, in the 10 years this system's been in existence - it's done 15,000 performances and 50 shows.

"On most occasions the manual system is used while the show is being set up so that while the computer operator is working on something else we can run the winches manually for testing purposes to make sure the wire ropes are satisfactorily set up and not snagging, for instance. But you've got full control, full override, and that's one of the beauties of the system.

"The other tremendous advantage with Showtrack is that each winch uses a revolver system which means that the winch position is absolute. If the power failed in the middle of a show, when it is restored everything knows where it is - you don't have to go through a marker point. The other possibility is that you could disconnect the gearbox from the chain drive to the winch drum with two pins to enable you to turn the winch with a manual handle and without losing position."

For the London show Triple E had six weeks notice of the production and three weeks available to set up the full system. "It was just about enough time," explained David Edelstein. "We brought over Chris Smith and Andy Helck from Feller Precision, who were both involved in the Toronto production, and they handed over to our UK operator Gavin Wetherall."

Another effort in company co-operation came with Triple E working hand-in-hand with Gerriets, one of the leading suppliers of curtain, projection and screen materials. The two have worked closely for many years, in the UK and overseas, and both are located in the Tower Bridge Business complex in London. Stewart Crosbie of Gerriets (also British production manager for Kiss of the Spider Woman) explained how they had come up with two new products for theatre after diligent sourcing of materials: one to aid the projection artist, the other of equal importance to the acoustician.

"Ariadne is a 100% bobbinet gauze of high quality, a fine material ideal for projection effects, and it suited the demands of Jerome Sirlin to perfection. I found the material after a lot of searching and was lucky to find a mill making it in sufficient widths for our purposes.

"Echovelour G is a synthetic sheeting with velour coating on one side and it has useful acoustic properties. It is the first time the fabric has been used in a theatre production. Sound designer for Kiss, Martin Levan, was so impressed by its sound reflection qualities that he immediately specified it for the show. It resolves the concern of actors and singers about acoustics when traditional stage velours absorb large amounts of sound energy or let it pass through, making music and speech unclear.

"The fabric has been developed to deal with these problems and is versatile because it has differing reflecting qualities on each side. The 'front' is a high quality stage velour, whilst the reverse is made of soundproof synthetic sheeting. It has been used throughout the orchestra pit to change the sound effects as necessary. Tested at the Institut Mueller in Munich, Echovelour achieved a reflection ratio of 82% compared to 43% for the usual velour, whilst the reflection intensity scored -0.9dB against the traditional velour which dampened the sound energy by -4.2dB on average."

At which point it is appropriate to stray back to our more usual role and tell you that sound equipment for Kiss of the Spider Woman was supplied by Autograph with design by Martin Levan Sound Design. The show's system features a two-part loudspeaker system, with one 'open ambient' section consisting of six Tannoy dual concentric drivers without cabinets, whilst the other utilises six UPA and two USW loudspeakers from Meyer Sound. Both sections are powered by Yamaha PC2602 and PC4002 amplifiers. Mixing is via a 61-input

Cadac J-type console, with the mixer's automated assignment facilities controlling the 24 orchestra mics and the 21 Sennheiser SK2012 body-pack transmitters. The radiomic complement includes Sennheiser MKE 2R 'Red Dot' miniature mics and Sanken COS11 units. The EM 1036 true-diversity receivers are interfaced with Sennheiser's remote monitoring software, running on the Amega A500 to allow AF and RF levels for all channels to be monitored FOH.

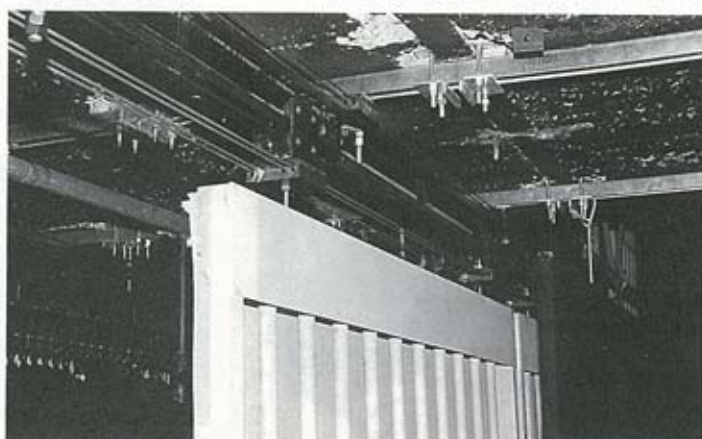
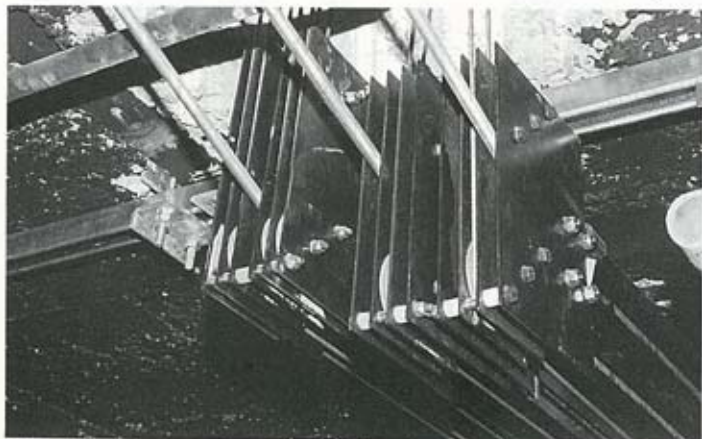
Autograph's Duncan Bell, who was responsible for their element of the installation, told L+SI: "We have had previous experience of the Shaftesbury Theatre and the venue did not present any serious problems. However, the size of the orchestra pit did result in some drastic re-building to accommodate the enormous percussion section. A wall had to be removed and a separate booth installed at the rear of the pit to house the drum kit and the vast array of percussion instruments."

All sound effects for the show are stored on CD, with the replay system using two machines working in tandem. The effects are routed around the stage and auditorium via the Cadac J-type's programmable routing section, in conjunction with a Yamaha DMP11 mixer.

As mentioned in the introduction to this article, in addition to the jail bar grilles, the principal scenic element of the production is composed of projected images designed by Jerome Sirlin. For the transfer from Toronto, Visual Techniques of London were recommended as consultants and suppliers for the projection work. Largely, no doubt, for their work in the field of high-powered projection.

Visual Techniques' Martin Lindsay told L+SI that they arranged an introduction of the Hardware for Xenon 500W projector to Jeremy Sirlin who had previously used Pani in the original production in Toronto. Obviously Sirlin was suitably impressed as three units with automatic slide changers, purchased by Visual Techniques, were used on the production.

The position of the various projection surfaces from the rear cyc to the pros arch required a lens which possessed a large depth of field to avoid difference in focus and the Reichmann 180mm lenses employed offered sharp focus through the entire depth of the stage. The projection surfaces range from a metallic surface through to conventional black and white gauzes. "The result on black gauze was of significance as the 5k achieved excellent results on what is traditionally a difficult surface to project on to," explained the company's Dave Herd. "The requirements of a compact installation to avoid problems with audience sightlines on the circle front was achieved by cutting out the centre rows of the seating risers to provide a level to build a platform supporting the projectors, with power supplies positioned below the platform but accessible for



Above, the diverter pulleys to guide the wire ropes through the concrete floor and up to the winches, and right, the jailbar panels attached to Unistrut.



The Cadac J-Type console in situ at the Shaftesbury Theatre.

maintenance. Due to the noise of the cooling fans of the 5ks, a sound-proof housing was required to cover the units which meant that forced air conditioning to cool the projectors had to be installed."

The original production was controlled from a lighting desk but Visual Techniques decided to use AVL 2.14 software to offer more control over the dissolve ramps and timings, allowing the director to achieve smooth transition of images in context with the action. Other equipment supplied by Visual Techniques included three AVL Dove x 2 dissolve units.

Vari*Lites came, quite naturally, from Vari-Lite Europe Ltd. with 12 VL2B's and six VL4's involved and with a dimmer interface for the Rainbow scrolling colour changers. The conventional lighting equipment was supplied by Theatre Projects Services Ltd and included a veritable array of bits and pieces to cover the rather interesting demands of an unusual show. The list shows a total of 226 Altman ellipsoidals, seven CCT Minuette profiles and eight Starlite 1200W fresnels, 32 Par 64's, two Berkey 5 degree 1k profiles, 12 Strand Harmony 1k profiles, 13 Par 64's, 16 Birdies, 12 8' Altman M16 battens, one Redhead and a Great American Market Stik-Up 200W. Follow spots were Pani; two short throws and one 500W Beamlight. Control was via the house Arri Imagine 250 desk and Strand Permuss dimmers from Theatre Projects. Effects equipment, also from TP, included a Cirrus 'A' cracker system, 32 Rainbow Two 16 colour scrollers, and a total of six Patt 252 with various attachments.

Credits: Scenic design and projection: Jerome Sirlin; Lighting designer: Howell Binkley; Sound designer: Martin Levan; Technical director: Don Finlayson

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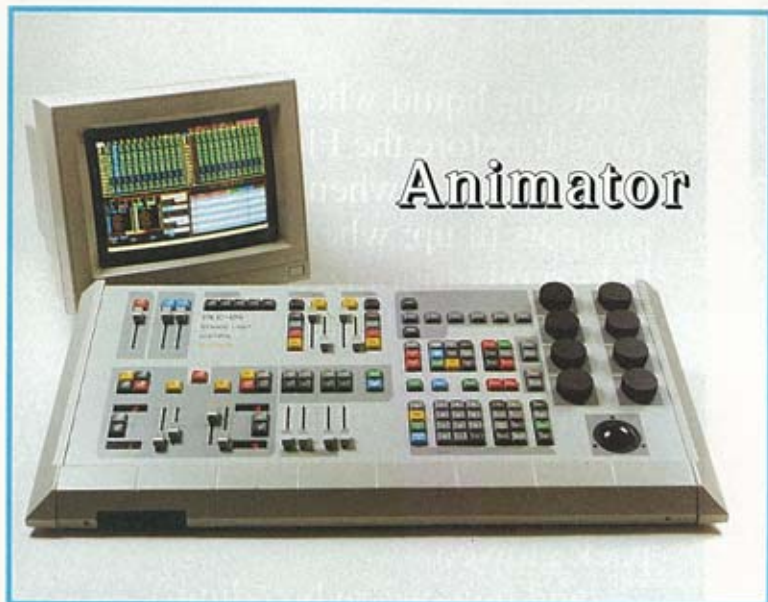
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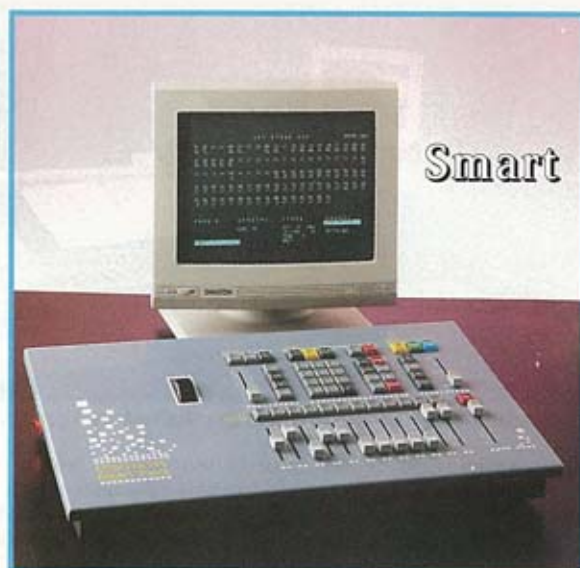
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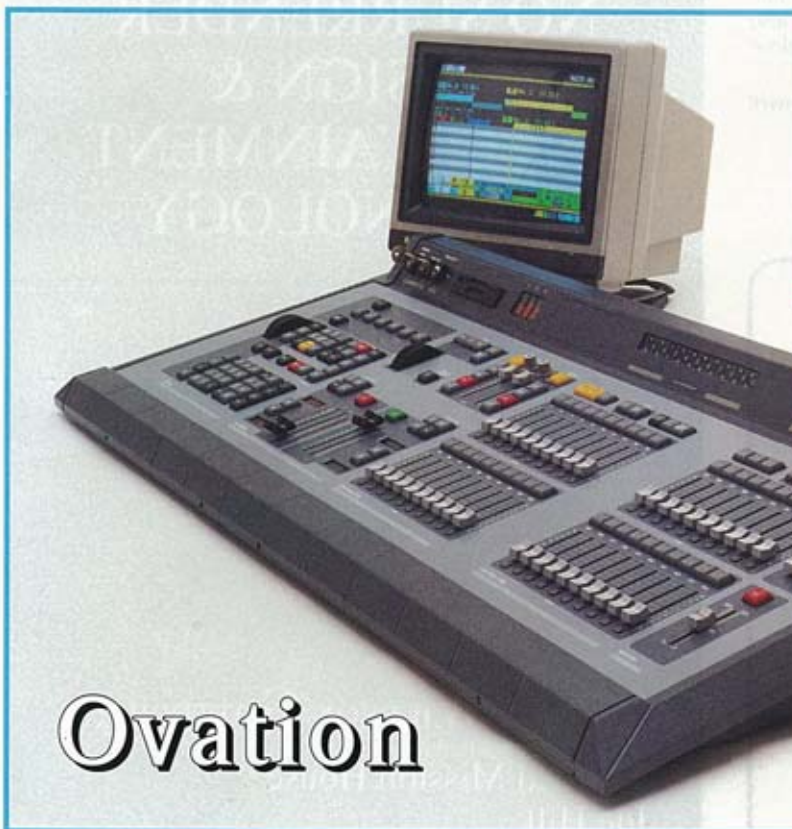


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AROUND THE WORLD SPECTACULAR

Imagination pull out the stops at the Royal Albert Hall

Briefed by Holiday Inn World-wide, the world's largest franchise hotel business, to conceive and create a series of London-based receptions, conferences, and business meetings over a three day period in September, design and communication specialists Imagination came up with a presentation programme that pushed the facilities of London's grand old Royal Albert Hall to the limit. This was the first time that the annual conference had been held outside the USA and was of particular importance as 1992 is the 40th anniversary of Holiday Inn.

Imagination's producer John Whittington summed it up: "We wrote, staged and produced a complete West End musical, and created a kind of 'Around the World in Eight Days' featuring a cast of approximately 400, a 40 piece orchestra and possibly the largest staging and technical rig The Albert Hall has ever seen."

Reflecting the global theme of the conference, the performance starred Robert Lindsay in the lead as a theatrical agent whose task was to unite acts from all over the world in global celebration. Imagination successfully sourced the extraordinary performers, which included acts as diverse as the Chinese State Circus, Flamenco dancers, the Regimental Band of the Coldstream Guards, as well as a core cast of 80 professional singers and dancers.

The design team led by Martin Grant worked with production manager David James to re-design the entire staging area of the Royal Albert Hall to create a 'theatre-in-the-round'. A new stage level was built nine feet above the arena to create a triple-revolving floor, which also incorporated a series of hydraulic rams which effected a birthday cake transformation in the finale. Rising up from the stage, three terrace levels were built over the existing stall seating. The flown scenic items were suspended by Unusual Rigging's Vari-Speed cable winches which were positioned throughout the roof space.

The lighting design team at Imagination felt that flexibility was vital. Hugh Vanstone told L+S: "I

opted for a large Vari*Lite rig to allow for last minute surprises. As with most live events the staging was not finalised until the day before the performance so a strong design team was crucial. This came in the form of Richard Knight, who programmed the Vari*Lites, and Fraser Hall, who supervised the lighting built into the scenery and called followspot cues for the show.

"The appearance of the rig in the air was an important part of the design with the majority of the lighting hung on three concentric circular trusses, the largest being 20 metres in diameter. Vari*Lites (56 VL4s and 28 VL2Bs) arranged in rings of eight lamps ensured that we were able to focus quickly using groups. The circular pattern of the rig worked extremely well and we were able to create some wonderful swirling chases."

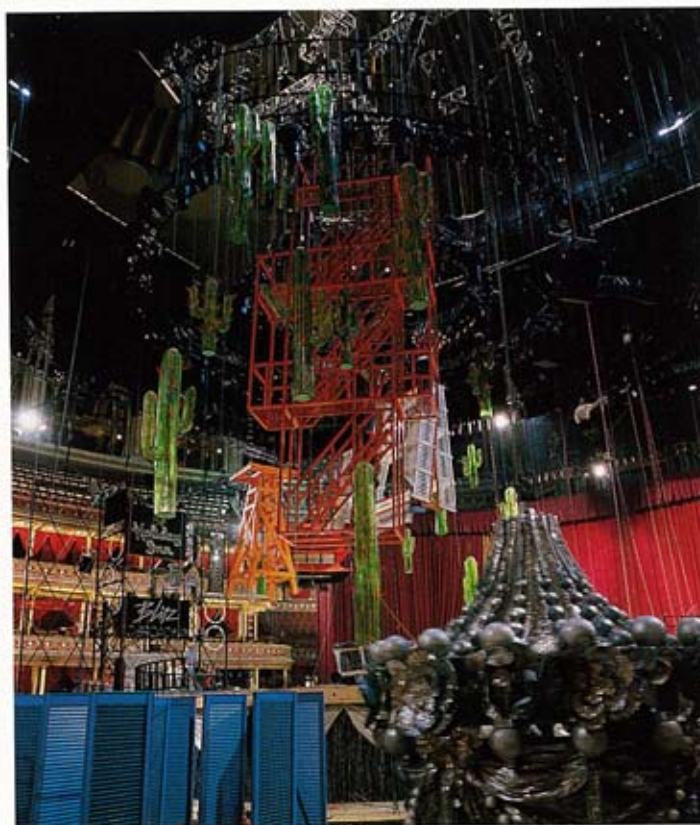
The conventional rig of around 600 lamps was used to provide basic colour washes for the stage and eight Pani long throw followspots were positioned on the balcony front arranged

in four pairs at 90 degrees to each other. Six Skywalker smoke machines were remoted to the desk with variable output via a 0-10v signal to ensure accurate control of the 'atmosphere'. An additional 30 circuits of lighting were built into the scenery to create such spectacular effects as neon signs, sparkling chandeliers, smoke guns in funnels, and 30 six feet highly illuminated cacti.

The sound system for the performance was designed by Imagination's John Del'Nero. A Cadac 'E' type desk was used for the 45 piece orchestra and an extension 'G' type desk took care of the 24 Micron diversity lavalier radio microphones used on the show. A computerised desk was chosen as the team had only one chance to get it right - on the night itself. Set in the round, the 360 Meyer speaker system consisted of eight UPAs flown from an outer circular truss, four UMs flown from an inner truss and 14 UPMs concealed around the stage edge. A further four UPMs concealed within the stage structure provided on stage foldback for the actors. The closely miked orchestra were given foldback using Meyer UMs via a monitor desk, operated by Chris Ekers and a dedicated monitor desk was used allowing monitoring problems to be dealt with at source. 40 ways of communications, using a four channel RTS system with three private lines, linked together all the elements of this unique production.

The event closed on a high note for Imagination. Following the success of the show they have been awarded the contract for the next three years.

Producer: John Whittington
Choreographer: George May
Designer: Martin Grant
Technical director: David James
Lighting designer: Hugh Vanstone
Assistant: Fraser Hall
Vari*Lite programmer: Richard Knight
Lighting equipment: Theatre Projects Services Ltd
Sound designer: John Del'Nero
Sound operators: Tom Button, Chris Eckers
Sound equipment: Autograph Sound
Costume designer: David Blight



Above (left), the build for staging and rigging, (top) the rig during the build and (right), the grand finale, replete with Birthday Cake.

LETTERS

Dear Editor,

REPLY TO ALAN PAULUS - OCTOBER L+SI

Hoffend & Sons as manufacturers and Glantre as distributors were delighted to see last month's letter from Alan Paulus of Trafalgar Lighting.

"A self-erecting 20m" - yes! "Looked jolly good" - yes! "Lifting capacity excellent" - yes! "Lighting stand" - seldom!

Perhaps we failed to explain or Mr Paulus failed to ask. Our smaller Starlift 526 would be more than adequate for many lighting and sound lifting applications and costs approximately half the price of the Starlift 542 exhibited at PLASA. On both models, the bales of the scaffolding conveniently lift off making transportation simple.

In the entertainment world, the principal application of both models of Starlift is to provide a ground support system using four or six units connected to trusses.

We hope Mr Paulus will now see Starlift in a different light!

Francis Shillitoe
Product Manager - Starlift
Glantre Engineering

Dear Editor,

SELECON AND ISO9002: ON THE WAY

Thanks to L+SI and your correspondent Graham Walne for the backgrounder on Selecon included in your October PLASA Light & Sound Show write-up.

I wish to correct the statement that Selecon have secured accreditation to ISO9002, in fact we are working through implementing our quality assurance systems. I expect that we will be in a position to seek accreditation during the first quarter of next year.

Those involved or contemplating seeking accreditation to the International Quality Standard will be aware of the onerous requirements and costly nature of the investment. For Selecon, it is a commitment we have entered into wholeheartedly as an essential part of our development and manufacture of innovative, quality stage and display luminaires.

I will let you know when we have secured accreditation.

Jeremy Collins
Managing Director
Selecon NZ

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Dear Editor,

COMMENT ON PULSAR PMX - OCTOBER L+SI

I was surprised to read in the recent Pulsar article (L+SI October, 1992) that they are seriously looking at what they (rather pretentiously) call PMX. As far as I can see it is just good old RS232 as used in the Golden Scan 1! I really think it is time to nail a few facts down.

Speed: PMX is good for 20 (yes, 20) channels (note 1). Most people would accept that lighting needs to be updated at least 24 times a second (if not, ask yourself why old movies look jerky), less than this and you cannot have fast chases, smooth fades and there will be delays if a lot of channels are changed simultaneously.

Now you can try to tell lighting operators not to do dramatic 100 channel cross-fades (i.e. 50 down/50 up), or fast chases, but why shouldn't they? Because of an arbitrary bottle-neck? On our older Enigma systems that control GS1s, we insist that a separate RS232 output is used for each set of eight fixtures (48 channels). To suggest that 200 responsive channels would be viable is misleading; it would take almost half a second to do a black-out, and a two second cross-fade involving all channels would be in four crude jumps!

Compare this to DMX. Even with 512 channels, it allows every channel to be changed up to 40 times per second (note 2). This is comfortably above the 24 limit, and we use 30 updates per second in Enigma. For information, MIDI is at best three times the speed of PMX, so is good for around 60 channels. In practice, unless done carefully this can easily fall to 40 due to the way MIDI works (note 3). It is fine for scene control and command links between controllers, as is RS232, because a couple of codes can trigger control of hundreds of channels, but it really is not practical for individual channel control in large systems.

Bits, channels and cables: This is really a spurious argument. It is how data is encoded and decoded that matters.

There is no reason why four standard '8 bit' (i.e. 256 levels from 0-100%) DMX channels cannot be interpreted as $4 * 8$ giving . . . whooeey . . . '32 bit' (4 billion values) control. Hey presto, use it to control a laser beam position and you can do retinal eye surgery at 10 metres! If a controller manufacturer and receiver manufacturer agree how the data is interpreted, you can do what you want with the 512 'channels' in DMX. If the first 256 are encoded to give '16 bit' (64,000) mirror positions, '24 bit' (16 million) colours, checksums (so it can detect corruption), the text of a thank-you letter to your granny, whatever you like; the dimmer channels from 257-512 will not give a damn.

The critical thing is that data is sent within the DMX 'packet', otherwise you end up with complex hardware and software to control the separate outputs. It is important to understand that this does not mean it all has to be on one cable, you can have separately buffered lines, with the same data, so a short on one will not affect the others. It's a bit like mains supplies; all I'm asking is that everything should run on 240V. This does not mean you have to wire them all into the same plug! Enigma provides separately buffered signals on pins 4 and 5, driven with a separate chip so a fault on the primary output will not affect the secondary line.

Termination, hardware and backup: DMX is based on a hardware standard - RS485, and it is a well proven industrial datalink, but must be used properly. The termination issue can get complicated, but the rule is do it, have a maximum of 32 receivers and avoid branches. If you must have more receivers or do a branch, then use a repeater to buffer it, and give them their own termination. It's a small price to pay to get the performance benefits.

DMX is not that fast by today's standards (an office network typically runs at 40 times the speed, though it does need special hardware), and there are many cheap microprocessors that can handle receiving it in their stride, some even have the

circuitry built in. It is good to transmit because, on any modern computer, it can all be bundled up as 512 channels and waved goodbye to as it is handed over to dedicated hardware, allowing the main processor to get on with the important business of interfacing with the user.

The back-up issue is critical, but all it really needs is a little 'what if' planning and a simple back-up controller to take over in the unlikely event of a critical fault arising in the main system. The needs of this depends on the consequences - it is just the same as getting insurance cover. The question is whether you can accept the risk of a basic show once in a blue moon, or put up with a compromised show every night?

In summary can I please urge people to accept DMX as a sensible compromise, it has the speed to cater for the vast majority of installations. I certainly agree that having multiple feeds is wise in any case, so arguments that it is too slow are irrelevant, just add more outputs. And, 'intelligent' light manufacturers - please: no more mutually incompatible protocols!

I had a look through our records to see all the ones that Enigma has had to make special provision for (aside from software): Robots, Golden Scan 1, Jupiters, Brios, Intellabeam 400, Intellabeam 700 (both in native mode), Colorpro, PC-Beams, Pinpoints, Roboscans. Well done lads, a mere 10 all completely incompatible with each other or anything else!

But then hindsight is a wonderful thing; our ALS multiplex seemed like a good idea at the time! The difference is we accept that DMX should now be the standard.

Neil Munroe
Technical Director
Advanced Lighting Systems

Technical Notes:

Note 1: PMX uses 9600 baud - in simple terms this is the number of bits per second, with both PMX and MIDI there is a start bit, 8 data bits (a byte) and 1 stop bit, so 10 bits are needed to get the data and $9600/10 = 960$ bytes/second. It is encoded as a pair of bytes: channel number and level so it can update $960/2 = 480$ channels/second. If you want to change these 24 times a second then $480/24 = 20$ channels.

Note 2: DMX uses 250k (k=kilo=1000) baud with 1 start bit, 8 data and 2 stop bits giving $250k/11$ bits = 22k bytes/sec, but also a special BREAK and START CODE at the beginning of each 'packet' of 512 channels, which cuts it down to about 20k bytes/sec. It is encoded as a string of 512 sequential channels, so $20k/512 = 40$ updates per second.

Note 3: MIDI uses 31,250 baud = around 3,100 bytes per second. This is usually in similar format to PMX (the musical 'note' number being used for dimming 'channel' number), therefore $3,100/2 = 1,550$ 'channels' per second. With 24 changes per second, $1,550/24 = 64$ channels. However, if the MIDI channel changes, it needs 3 bytes to control each dimming channel (loss of MIDI running status), and there are various 'extras' that get sent now and then. If there is MIDI Time Code about, it knocks at least another 10% off the available time for data.

Incidentally, both PMX and MIDI only have 1/2 the resolution, so I am being quite generous. Specifically, for each nominal channel, DMX defines 256 levels, PMX and MIDI only 128.

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The spinning wheel: hypnotic element for the Red Hot Chili Peppers.



The prominent backdrop - a copy of the bass players shirt!

Red Hot Chili Peppers Sydney Ent's Centre LD: Ian MacEwan

Lighting designer Ian McEwan (Mac) spent his formative years with Chameleon Lighting before getting his first major break as a lighting designer on the recent EMF tour. The group's management were also responsible for the Red Hot Chili Peppers and, impressed with work for EMF, they offered him the design for the Peppers current world tour. The tour started in Europe last February with quite a small lighting system comprising nearly 200 lamps and just two crew. The tour then went to the USA where the band became the headlining act on the infamous 'Lollapalooza Tour' - a large touring American festival. Other acts which featured this year were The Jesus and Mary Chain and The Ministry.

A much larger lighting rig was required to accommodate the sheer scale of the tour which was playing to 20,000 plus arena. "It became so enormous, it was horrible, and I got it all wrong," admitted Mac. "I had this idea about arena lighting and I tried to change it, but it just didn't work. Consequently, seven shows in, I changed the whole system to create lots of light upstage because throughout the tour I was stuck with a stage depth of 26 feet and a trim of 28 feet. As a result, we had the problem of lights coming downwards and just bouncing straight back up again, as opposed to coming from upstaging point forward. I had to change everything around to make it less ambient and more directed as well as to get a much nicer shape. At the start I had six 'L' shapes and I had to change it into eight 'V' shapes.

"Some of the other acts at the festival used my rig. However, of those, only the Ministry were able to stretch it to its full potential as they were the only band, apart from the Red Hot Chili Peppers, that actually performed once night had fallen. Everyone else played in the daylight so it was hard for them to create much with the lights. The Jesus and Mary Chain had a lot of trouble because they were on at 4pm in brilliant daylight and their performance is not geared towards daytime concerts. In response, they flooded the stage with so much smoke it became a bit of a joke. The dominant feature of the stage was a stream of smoke instead of the band."

The Red Hot Chili Peppers have no say in the lighting design and they claim not to care. For the entire show, they only requested that two cues be included, and not unsurprisingly, Mac finds them

very easy to work with. The design changed again for the Australasian tour because the money just wasn't there, and it was unnecessary to have a show that size for the venues concerned.

"The 'Lollapalooza Tour' was designed for 20,000 plus so whilst it's easy to get the show happening for the 5,000 in front of the mixer to the stage, you've got to remember the 15,000 people behind," explained Mac. "That is why the lighting rig for the tour was so big. At the entertainment centre in Sydney, we're doing all the indoor venues and our limit is about 13,000 so we can get away with a smaller show, although relatively speaking, it's still quite big. It's very primaries, all very basic. I tend to follow the work that Colin Jones and Peter Barnes have done in the past. It's very much a Chameleon type of design - very basic things, very basic colours, very basic moves. Quite simple. It's not like a big art show because they're a rock band. Without a doubt I'm very much influenced by Colin and Pete and obviously I feel a bit sad about Chameleon being bought up as I've been involved with them for so long. I'm glad they were bought out by Meteorlites, because at least they're still small enough to be friendly. I use Celco all the time as I like to work with them."

The show covers a broad spectrum of looks from very subtle, quite simple effects, to very jazzy looks with all the colours going. The show ranges through large multi-gobo backdrop looks to an intimate feel for the quieter numbers, as well as to some rave elements.

"It's a bit like doing a bigger version of EMF," said Mac. "I'm still doing my show, but applying it to another band." A main feature of the set is a large spinning wheel with a diameter of 20 feet. It's a big double spiral which semi-hypnotises the audience. The prominent backdrop is a copy of the bass players shirt and when he requested it to be used for the backdrop design, Mac admits he thought it was a joke. Despite the initial doubts, it actually works very well. The tour has had no other major problems other than Mac having to sack four followspot operators in the USA for being too slow! He states that they were really bad callers although his broad Scottish accent might have something to do with the problem!

The supply company used in Sydney was Arena Technical Services* and Mac was happy with their service and equipment. He was pleased that they were able to manufacture some special kit for him, including the kabukis, as well as trying hard to get the right sort of mirrorballs required. The lamps include a selection of Pars, ellipsoidals, groundrows, 5k barndoors and 8 lites, working

alongside eight Intellabeams.

"I've been using Intellabeams for about 18 months, in fact, since I became a professional designer. I like the product, the speed it moves and the controller that goes with it. They're very easy to use, and in some cases, preferable to the Golden Scans which have to be programmed from a separate board. Again, I get on well with the people at the company. I would like to learn to use Vari*Lite because there are a lot of instances when Intellabeams just don't hack it, such as doing set washes. Eventually, I'd like to use a combination of both units."

As he has recently married an Australian girl, Mac intends to be based in Sydney for a while. After the Red Hot Chili Peppers' tour he hopes to have short break but after that he's for sale! There are a couple of tours currently under negotiation as well as the possibility of involvement in a large Australian festival next January called The Big Day Out which visits the five major cities.

"I don't really want to go back to Britain as it's so depressed at the moment. I've got good contacts in the USA so I'd like to be able to spec most of my work outside Europe now."

Equipment List

- 78 x P64 ACL
- 108 x P64 VNSP
- 18 x P64 NSP
- 36 x P64 MF
- 8 x 8 Lite DWE
- 10 x 8 Lite ACL
- 4 x 6x16° ellipsoidals
- 4 x 5k c/w barndoors
- 12 x 1K 4cell groundrow
- 2 x cracked oil machine
- 2 x Smoke machines
- 4 x Lycian truss spots
- 4 x FOH Troupers
- 1 x Celco 90 + interface
- 1 x Celco 30 + interface
- 8 x Intellabeams

**On my last visit to Sydney I failed to mention ATS when reviewing hire companies based in Australia. I knew I would miss out someone! A gentle reprimand by Garry Brokenshire of ATS has resulted in this footnote. Arena Technical Services have been in business for three years and they specialise mainly in lighting hire but they also own substantial amount of sound gear. They also own video equipment and have the only road case touring system in Australia. Stock includes Avo QM500s, Celco Golds, an extensive range of lamps and a large selection of trussing including the only pre-rig truss in Australia. ATS build their own dimming systems and motor control systems.*

Torvill and Dean

UK Venues

LD: Doug Brimblecombe

Designer and Vari*Lite operator Doug Brimblecombe has his work cut out on the current Torvill and Dean UK tour. One of the first problems he encountered was the illumination of a 70 ft x 170 ft ice stage for the former Olympic medallists UK tour. His first objective was to illuminate the skaters which at times required absolutely pinpoint precision lighting for 60 skaters. Within the basic truss which was 128 ft long and 48 ft wide, and which featured an additional 196 ft of truss over the audience, he incorporated 71 Vari*Lite (34 x 2Bs and 29 x 4s) 552 Parcans with 60 Rainbow colour scrollers, 7 x 5k fresnels and six Lycian Starklight followspots.

Having determined the main lighting for the entourage of 79 skaters (72 of which are Ukrainian) Doug was able to add effects using 24 Dataflash units giving him the multiple, random flashes he wanted. 80 ft of Arcline, four ZR401s, two slow moving mirror balls and five custom-built Vari*Lite gobos (including cactus and lightning) combined to create the various moods of the show: from the fairytale like scenes of over 60 skaters in long flowing lacy dresses gliding across a dream-like wash of pale pinks to the tremendous storm, cut with flashing lightning effects, but still retaining the light needed to illuminate the skaters. Doug also incorporated a water effect designed by Wayne Stevens to produce a cascade of



On UK Tour: Torvill and Dean.

stunningly lit rain 128 ft long on either side of the stage tumbling on to the Mackintosh and umbrella-clad skaters. The conventional lighting and effects were hired from Samuelsons Concert

Productions with Dave Farmer, Paul Birch and Mark Rusk touring with the equipment, and 'Sparky' as the Vari*Lite technician.

Mary Webb



The photograph above shows Clive Banks, Mike Oldfield's manager (left) Mark Fisher (centre) and a kilt-bedecked Patrick Woodroffe.

Mike Oldfield

Edinburgh Festival

LD: Patrick Woodroffe

Mike Oldfield presented a one-off performance at Edinburgh Castle in early September. Organised by Unique Events of Edinburgh, the show provided the finale weekend for the Edinburgh Festival.

The open stage, with the Castle as backdrop, played host to Nigel Kennedy, Wet Wet Wet, and Mike Oldfield - making his first stage appearance since the release of Tubular Bells II. The lighting was designed by Patrick Woodroffe, with Dave Hill operating the Vari*Lite, and Neg Earth supplying the conventional lighting.

Control was provided by the Celco 90 Gold and Navigator, with Avo dimmers, Pani projectors, Rainbow colourchangers and Strong Supertroopers all playing a part. Sound wise SSE provided an ElectroVoice MT2 system, with FOH a TAC SR9000. On stage two Midas XL3s provided the mix, together with a large percentage of TC EQ with remotes. Mark Fisher of Fisher Park designed the stage. The live show was broadcast to Germany and also shown on British television later that evening. Rumours of a Tubular Bells II tour are currently being whispered.

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The National Museum of Photography, Film & Television
Bradford, West Yorkshire, England
April 19th, 20th & 21st, 1993

COLLOQUIUM

Full details of papers, speakers, visits and social events
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Showlight 93 Organiser: John Smith

*Showlight 93 is organised by the NIC of Great Britain on behalf of the CIE
in association Yorkshire Television and PLASA*

*Showlight 93 Administration: Ruth Rossington/John Offord
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CONCERT LIGHTING

Techniques, Art and Business

James L Moody

Focal Press

ISBN 0 240 80010 9

1989 240pp hardcover

Price: £32.50

For the first time, get a complete primer on concert lighting, plus thorough explanations of applications to TV, film and theatre. Written by a designer experienced in these areas, the book details the kinds of equipment used, common problems confronted, practical business concerns and 'life on the road' for a touring professional. Several chapters on applications to other media demonstrate the versatility of today's lighting designers in crossing over to other design areas.

CONCERT SOUND AND LIGHTING SYSTEMS

John Vasey

Focal Press

ISBN 0 240 51798 9

1988 178pp hardcover

Price: £26.50

This unique book shows how to set up, maintain and operate sound and lighting equipment for the performance of amplified music or any kind of touring production.

An excellent reference and/or guide to procedure, the book provides descriptions of all the components that make up a system, explanations of how they all work together, and photographs and illustrations that show specific equipment and proper stage set-up. A must for anyone interested in working with today's sophisticated production technologies.

THE STAGE LIGHTING HANDBOOK

(4th edition)

Francis Reid

A & C Black

ISBN 0 7136 343 91

208pp illus 227x163mm paper

Price: £11.99

A new fully revised and enlarged edition of this standard introduction to stage lighting, an excellent source of advice and information for everyone involved in lighting design and practice. New chapters cover lighting dance, new technologies and more on organisation and planning.

THE ABC OF STAGE LIGHTING

Francis Reid

A & C Black

ISBN 0 7136 3609 2

September 1992 136pp paperback

Price: £9.99

This glossary of lighting terms is for both amateur and professional theatre workers. It assembles all the key current words and phrases and explains them simply and clearly, allowing a deeper understanding of terms and facilitating better communication between specialists and non-specialists.

SIXTY YEARS OF LIGHT WORK

Fred Bentham - an autobiography

published by Strand Lighting

ISBN 0 902277 02 2

September 1992 266pp hardcover

Price: £12.95

Fred Bentham is a rare combination of artist and engineer whose life's work has been devoted to theatre, cinema and TV. During his 42 years with Strand Electric, he not only invented and initiated equipment, but pioneered ways of using it. Bentham's career has spanned an important era of technical and artistic development in which he played a leading role.

This book charts his apprenticeship, starting with a model theatre and amateur dramatics and on to his first job in the world of 'talkies' and the cinema theatres of the early 30s. A unique vacancy at Strand Electric provided the ideal environment for his theatrical career to grow. The book contains only minimal doses of engineering and technology, mixed with many funny and enjoyable experiences - the factors in his career that has made it sixty years of light work!

LIGHTING BY DESIGN

A Technical Guide

Brian Fitt & Joe Thornley

Focal Press

ISBN 0 240 51331 2

September 1992 352pp hardback

Price: £29.95

A full technical guide to basic theory and practice of colour lighting. It contains unique colour filter comparison tables - 1,000 colour filters compared with each other using 70 reference colours from eight filter manufacturers and covers a range of subjects including luminaires, dimming, control, tendering, maintenance and safety.

THE CONTROL OF LIGHT

Brain Fitt & Joe Thornley

Focal Press

ISBN 0 240 51346 0

September 1992 192pp paperback

Price: £14.95

This book covers everything to do with the control of light from light measurement through to safety. A handy reference for electricians, lighting engineers in television, film and theatre, plus students and newcomers to the industry.

LIGHTING AND SOUND

Neil Fraser

Phaidon Press

ISBN 0 7148 2514 X

128pp 160 illus 210x145mm

Price: £8.95

One of five inter-related volumes designed to help amateurs develop their theatre skills. The author shows how, by careful planning and a creative use of often limited amounts of time, money and energy, truly outstanding results can be achieved. The manual offers new and imaginative approaches to classical plays whilst also tackling less conventional outdoor shows and productions in unusual settings. *

THE TECHNIQUE OF LIGHTING FOR TELEVISION AND FILM

(3rd edition)

Gerald Millerson

Focal Press

ISBN 0 240 51299 5

March 1991 448pp hardcover

Price: £29.95

This widely-used textbook provides a detailed discourse on the mechanics, the techniques and the aesthetics of lighting for television, video and film camera. It covers the field in depth, from first principles to the highest professional levels. Whatever the project, the reader will find here generous and systematic guidance, accompanied by an unparalleled wealth of helpful illustrations, conceived and executed by the author himself.

LIGHTING FOR VIDEO

(3rd edition)

Gerald Millerson

Focal Press

ISBN 0 240 51303 7

June 1991 176pp softcover

Price: £14.95

Enables readers to produce top-grade results whether lighting off-the-cuff with a portable compact kit or tackling a major project with an extensive heavy-duty rig. It does not assume technical knowledge or previous experience and after covering basics it guides readers towards the most effective ways of handling projects, and shows typical professional solutions to everyday situations.

PROFESSIONAL LIGHTING HANDBOOK

(2nd edition)

Verne and Sylvia Carlson

Focal Press

ISBN 0 240 80020 6

September 1991 256pp hardcover

Price: £26.50

Handy, yet thorough, this manual contains description and discussion of hardware functions as well as advanced lighting techniques, giving guidelines to the proper use and operation of all kinds of lighting equipment, primarily for film and TV. It features illustrated details of different types of lamps, fixtures, lenses, reflectors and filters. It also covers controllers, powerlines, modifiers and generators.

SOUND FOR THE THEATRE

Graham Walne

A & C Black

ISBN 0 7136 3135 X

152pp illus 245x190mm paper

Price: £12.95

This definitive manual explains the key points of theory and practice from elementary acoustics to the use and potential of the latest equipment. Fully up to date, it includes information on all the new technology and techniques.

Particular attention is given to the problems of open air productions and buildings not designed for dramatic purposes.

SOUND & MUSIC FOR THE THEATRE

A Guide to Aesthetics and Techniques

Deena Kaye and James LeBrecht

Phaidon Press

ISBN 0 8230 7664 4

1992 256pp paperback

Price: £16.95

Sound design has come into its own as an important aspect of theatrical production.

This book is the first to discuss both the technical and aesthetic side or preparing music and sound for the theatre and its principles applicable also to preparation of soundtracks for film, TV and radio. Deena Kaye has composed and designed for the Public Theatre, Lincoln Centre and National Shakespeare Company, whilst James LeBrecht has designed for the Berkeley Repertory Theatre and received many awards for his work.

SOUND RECORDING AND REPRODUCTION

(2nd edition)

Glyn Alkin

Focal Press

ISBN 0 240 51304 5

September 1991 264pp softcover

Price: £17.95

In this new edition the latest developments in the recording field have been incorporated eg. WORM disks, and thermomagnetic optics, which are still in the development stage. More information about current operational practices is included as well as expanded material on the treatment of CDs, RDAT and SDAT.

SOUND REINFORCEMENT HANDBOOK

Gary Davies and Ralph Jones for

YAMAHA (Hal Leonard)

ISBN 0 88188 900 8

1987 384pp illus paper

Price: £20.00

A thoroughly useful reference for anyone who is interested in learning the basics of sound reinforcement. Each page is dated and as technology advances each subscriber will be provided with periodic updates.

SOUND EFFECTS: Radio, TV and Film

Robert L Mott

Focal Press

ISBN 0 240 80029 X

January 1990 236pp hardcover

Price: £27.50

Newcomers to the field of audio/sound production, or producers, directors and other production personnel who need background on sound effects, could find no better resource than this new book. It provides the first comprehensive treatment of sound effects - their history, make-up, equipment and applications in radio, TV and film. Written by a veteran versed in these different media, the book offers insights into the unique problems presented by each medium and the diverse hi-tech applications in everything from news to commercials to dramas.

SOUND TECHNIQUES FOR VIDEO & TV

(2nd edition)

Glyn Alkin

Focal Press

ISBN 0 240 51277 4

1989 240pp softcover

Price: £16.95

This new edition is a completely updated version of TV Sound Operations, a widely used instruction manual. The new book describes in detail the essential techniques for producing effective sound in conjunction with visuals. It also covers the basics of audio theory and equipment in straightforward, non-mathematical terms. Of interest to anyone who makes video recordings or telecasts, whether amateur productions or complex operations employing a professional studio.

THE ART OF THE SOUND EFFECTS EDITOR

Marvin M Kerner

Focal Press

ISBN 0 240 80008 7

1989 118pp softcover

Price: £14.95

A unique look at the responsibilities of the Hollywood sound editor. Written by a veteran of both TV and film, the book relates through personal anecdotes and procedures the production of sound tracks, including backgrounds, dialogue, special sound effects and dubbing. It also deals with other issues important to any editor - the proper organisation of an effects library, the preparation of films for foreign distribution and critiquing for overall effectiveness.

THE ARCHITECTURE OF SOUND

Peter Lord and Duncan Templeton

Butterworth Architecture

ISBN 0 85139 726 3

1986 320pp illus 297x210mm hardcover

Price: £65.00

Acoustic spaces such as concert halls and theatres have always lent themselves to dramatic architecture. At the same time they pose extremely demanding functional design problems. This book examines numerous building types and in each case the technical criteria are established, design guidance is given, and successful examples from all over the world are illustrated.

COLOUR TEMPERATURE

COLOUR TEMPERATURE CORRECTION
AND NEUTRAL DENSITY FILTERS IN
TELEVISION LIGHTING

Alan Bermingham

Society of Television Lighting Directors

1989 paper

Price: £6.00

The author presents the subject clearly and completely as he judges it relates to television as practised by the BBC and other large organisations. He is well qualified for the job having spent many years teaching lighting at the BBC's own training school near Evesham.

REGULATIONS FOR ELECTRICAL INSTALLATIONS

(16th edition of the IEE Wiring Regulations)

Institute of Electrical Engineers
ISBN 0 85296 510 9
1991

Price: £32.00 paper

Price: £42.00 loose leaf binder

This edition supersedes all earlier editions and is recognised as the UK National Code for the safety of Electrical Installations. It is based on international rules set by the world-wide International Electrotechnical Commission (IEC) and the European Committee for Electrotechnical Standardisation (CENELEC). Extensive appendices provide ready reference data with standard circuits included to minimise design work.

THE IEE WIRING REGULATIONS EXPLAINED AND ILLUSTRATED

(2nd edition)

Brian Scaddan
Focal Press

ISBN 0 7506 03143

September 1991 209x147mm illus softcover

Price: £8.95

This new edition brings this popular and practical book into line with the 16th edition of the IEE Wiring Regulations published in May 1991. Brian Scaddan is the author of Wiring Systems and Fault Finding for Installation Electricians. The book covers fundamental requirements for safety, protection, control, circuit design, testing, inspection and problem solving.

PUBLIC ADDRESS SYSTEMS

Vivian Capel

Butterworth Heineman

ISBN 7506 0732 7

August 1992 256pp hardback

Price: £25.00

Vivian Capel trained as a radio engineer and through his work has gained extensive knowledge of audio and public address equipment and has worked on many P A installations from small halls to large sports stadia. He is well known as a contributor to electronics magazine and as the author of a number of successful books.

Aimed at audio engineers and P A installers, the book covers suitability of equipment, installation and operation, as well as offering many practical tips and fault-finding techniques.

SAFETY IN LIVE PERFORMANCE

George Thompson

Focal Press

ISBN 0 240 51319 3

December 1992 256pp paperback

Price: £19.95

In 1992, European standards for all aspects of safety will be put into effect and everyone connected with all forms of live entertainment will need to be increasingly aware of safety. As yet, no book exists which covers, in a digestible form, safety hazards which can be encountered in live performances. This book fulfils that need.

ROCK SETS

The Astonishing Art of Rock Concert Design

Sutherland Lyall

Thames and Hudson

ISBN 0 500 276978

November 1992 96pp paperback

Price: £10.95

Rock Sets presents the most dramatic inventions of this kind ever made, namely those created by Fisher Park, one of the best-known rock concert design companies in the world. Among their clients are The Rolling Stones, Stevie Wonder and Tina Turner. The results of their rock architecture are chronicled here with photography set against original scale drawings. Sutherland Lyall, former editor of Building Design has written extensively on modern architecture and has created with Rock Sets a permanent record of these short-lived works of art.

LOUDSPEAKER AND HEADPHONE HANDBOOK

John Borwick, editor

Butterworth

ISBN 0 408 01387 7

1988 224pp hardcover

Price: £75.00

Written by a team of international experts to provide a comprehensive technical reference on the theoretical and practical aspects of loudspeaker and headphone performance, design and operation.

Tables, graphs and diagrams provide convenient reference material for students and professionals alike. Special treatments of electrostatic loudspeakers and headphones provide detailed information not available elsewhere. The latest techniques for the computer-aided design of drive units, crossover networks and enclosures are also discussed.

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THE ART OF DIGITAL AUDIO

John Watkinson

Focal Press

ISBN 0 240 51270 7

1988 490pp hardcover

Price: £49.50

A digital audio system involves concepts and technology from many different areas: laser optics, channel coding, error correction, and digital filtering among them. This book is the first to pull all these technologies together as they relate to audio. It's the first major work to go beyond the introductory stage to deal with advanced topics, theory, and a whole new world of practical implementation.

STEREO MICROPHONE TECHNIQUES

Bruce Bartlett

Focal Press

ISBN 0 240 80076 1

April 1991 192pp softcover

Price: £21.95

This book tells how to position the correct microphones in the proper locations in order to record optimal quality stereo sound. It is the first fully comprehensive handbook devoted exclusively to stereo miking. The many illustrations and clear organisation easily explain the theory behind stereo miking methods and describe specific techniques, including comparative evaluations. In addition, Stereo Microphone Techniques offers suggestions on session procedures and stereo troubleshooting as well as recent developments in binaural and transaural stereo and stereo boundary arrays.

MICROPHONES: Technology and Technique

(3rd edition)

John Borwick

Focal Press

ISBN 0 240 51279 0

March 1990 256pp softcover

Price: £27.50

This complete microphone handbook integrates engineering design and theory with musical/artistic applications. This new volume begins with a brief history of microphone technology and then explains the basic theory of acoustics, electricity and magnetism. The working principles and design of all types of microphones, including the most popular models and accessories, are described in detail. The second half of the book provides guidelines on the creative balance techniques used for musical instruments, voices and ensembles of all kinds from classical to pop. Production methods in studios, on location, on public address systems and for live shows are also outlined.

THE USE OF MICROPHONES

(3rd edition)

Alec Nisbett

Focal Press

ISBN 0 240 51291 X

1989 184pp softcover

Price: £16.95

How to select position, balance and control microphones. Includes speech/music balance, simultaneous sound/picture recording, and performance control.

VIDEOWALLS

Robert Simpson

Focal Press

ISBN 0 240 51294 4

November 1990 208pp softcover

Price: £17.95

Keeping mathematics and technicalities to a minimum, this book assumes that the reader has some knowledge of video. The book clearly sets out how videowalls work, how to use them, and how to programme them. The subject is broken down into about a hundred units, with a detailed table of contents attached.

EFFECTIVE AUDIO-VISUAL - A User's Handbook

(2nd edition)

Robert S Simpson

Focal Press

ISBN 0 240 51327 4

June 1992 224pp hardcover

Price: £29.50

For anyone concerned with using A-V media, particularly managers in business communications, this practical guide provides both advice and facts. Effective Audio-Visual compares different types of presentations, from traditional flip charts to the latest in interactive and computer-aided technology. Part One reviews the different applications of A-V, while Part Two surveys the various systems of delivery, including a look at all the necessary equipment and how it functions.

THE TECHNIQUE OF SPECIAL EFFECTS IN TELEVISION

(2nd edition)

Bernard Wilkie

Focal Press

ISBN 0 240 51284 7

1989 282pp hardcover

Price: £29.50

This new edition of a respected reference guide is essential reading for anyone involved in TV special effects, from effects assistants to more experienced directors and production staff. Designed to eliminate time consuming and costly trial and error, the book offers practical solutions to problems most often encountered by effects personnel. It provides full descriptions of equipment, working principles, and types of effects achieved. It also includes up-to-date information on such areas as chroma key, smoke makers, light projectors, electronic matting, robot motion control and 'animatronics' box frames.

THE NEW LET THERE BE NEON

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This is the only book in which neon is studied as a unique handcraft and as an artistic medium with its own expressive potential. In a spectacular visual presentation Stearn explores the 'light of the American Dream' in all its razzle-dazzle, sinuous beauty and raucous glory. This enlarged and updated edition adds the latest developments and innovations to what has become the standard work on neon.

NEON - A Practical Handbook

Peter J Mason

Masonlite Ltd

23pp A4 Paper

Price: £6.50

Technical information on the manufacture and installation of neon tubes and cold cathode lamps. The book is aimed at the glass blower and pumper as well as the installation engineer and maintenance man.

NEON LOVERS GLOW IN THE DARK

Lili Lakich

Museum of Neon Art

ISBN 09615240 1 4

96pp cloth illus 11"x 8"

Price: £16.00

Lili Lakich was born in Washington DC, USA and studied art at The Pratt Institute, College of Art, New York. The book is lavishly illustrated with excellent colour photos of Neon, the subjects being mainly art and sculpture.

MULTI-IMAGE DESIGN AND PRODUCTION

Phiz Mezey

Focal Press

ISBN 0 240 51740 7

1988 176pp softcover

Price: £22.95

This book tells you everything you need to know to create one, two and three projector productions, and prepares you to tackle larger projects. It leads you through the production process, from planning and preparing scripts, visuals and soundtracks to final editing and programming. It shows aesthetic and technical considerations and outlines methods with step-by-step directions.

MIDI SYSTEMS AND CONTROL

Francis Rumsey

Focal Press

ISBN 0 240 51300 2

1990 142pp softcover

Price: £15.95

This new book covers theoretical aspects of MIDI control and implementation in a number of different device types. It investigates the topology of a complete MIDI system and the technical problems to be solved. Recent revisions to the standard-sample dump, MIDI timecode, and MIDI files - are also considered, along with MIDI - controlled mixer automation.

Although highly technical, the book explains terms and concepts clearly and supports its discussions with instructive diagrams and tables.

THE STAGING HANDBOOK

Francis Reid

A & C Black

ISBN 0 7136 2324 1

160pp illus 225x160mm paper

Price: £9.95

Shows how a thorough understanding of the staging process can eliminate many of the problems of putting on a play. Reid outlines the basics of budgeting and scheduling, and describes the various types of staging organisations, their personnel, and the work of the different stage departments for all forms of amateur and professional performance.

THEATRES - Planning Guidance for Design Adaption

Roderick Ham

Butterworth Architecture

ISBN 0 85139 418 3

1988 224pp over 170 illus hardcover

Price: £65.00

No city, town or college is complete without its places of assembly. Although the form these may take greatly varies, they all have principles in common.

Drawing on a wealth of expertise, this book, produced in tandem with the ABTT, examines each function and requirement of a theatre building and gives technical guidance on achieving the best results.

DESIGNING FOR THE THEATRE

Francis Reid

A & C Black

ISBN 0 7136 3136 8

96pp illus 225x160mm softcover

Price: £8.95

A complete introduction to the possibilities and processes of theatrical design, covering costumes, settings, props and lighting. Reid pinpoints the practicalities which govern the designer's scope whilst describing methods and effects available.

STAGE MANAGEMENT

A gentle art

Daniel Bond

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ISBN 0 7136 3463 4

144pp 226x160mm softcover

Price: £10.99

This book provides professionals and amateurs with a solid grounding in stage management practices and procedures.

From beginning to end, the author discusses the complete production of a play. Main emphasis is on the management and liaising of various departments: lighting, sound, costume etc. The book includes appendices on fire, copyright, animals and weapons, with helpful checklists and a full glossary.

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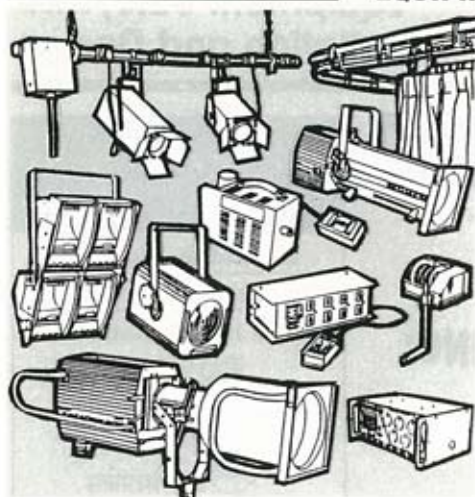
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VIEWPOINT

Robert Halliday says

Why Waste Good Technology?

There are many joys and delights which come from attending the PLASA show - meeting old friends and new, and playing with all the expensive toys for example. And there are some which are mixed blessings, such as the deluge of mail that tends to follow.

It was while reading one of these mailings that I came across a price list from Strand, showing that an M24 computer lighting desk, complete with effects/back-up unit, could be mine for a mere £8,000. There was a brief pause as there tends to be when I'm confronted by numbers followed by a series of zeros. £800. They'd finally reduced the price. Almost good value.

Hang on. *Eight thousand pounds?* For what? I don't want to knock Strand or that desk, or any of the other major manufacturers to whom my comments might equally apply. Strand's was, after all, the first computer board I ever used. But if memory serves me correctly, it contains a level of technology not that much greater than the microcomputers of about five years ago - and they sold for about £400 then. £8,000 would buy you a pretty good car. More importantly, it could buy you a very powerful computer - a top-of-the-range 486 PC or an Apple Macintosh Quadra. The £30,000 (thirty thousand pounds!) or so for a new Galaxy would buy you a very powerful workstation. Or a Jaguar, if you could persuade the administrator it would improve the lighting.

Why so much? There's a line of argument which says the costs are so high because lighting desks are not mass-market products and so involve high research, development and manufacturing costs for comparatively few sales. Added to which you're paying for the reliability of the desk and the back-up service offered by the manufacturer.

Cynic that I am, I'm not entirely convinced by either. I know a great deal of specialist computer software that gets sold for a lot less than £30,000, and of computer manufacturers who are still in business, when certain lighting control manufacturers aren't. And I've crashed my Macintosh a lot less often than I've had various lighting desks die on me.

In the pioneering days of memory control, the computers of the time were stretched as lighting boards. Richard Pilbrow's Lightboards at the National used PDP-11 minicomputers, bastions of universities and office payrolls, to keep track of what was going on. There was then no standard way of communicating with computers - most people had never even seen one, let alone used one, so the specially designed control surfaces with faders offering at least some resemblance to the old manual desks were essential.

A decade or more on, computers have grown in power and shrunk in price and size, while the task of recording the lighting for a show has hardly changed at all. For all the creative effort involved, it basically still boils down to recording a large set of numbers and playing them back in the right order. And people do not know how to use the

machines - a generation have been brought up with them, the previous generation have largely been forced to learn to keep up. In terms of operation, the lighting boards are now the oddities, because they don't work like PCs. So there's now no need to go to great lengths to create special hardware. A Mac or PC has the power to do it. You need an interface, yes. And some software. But the whole thing shouldn't come to anything like 30 grand. Make the software work in the usual way, and the operators will already have the basics. Add an extension box with a wheel or some faders to give more precise 'hands on' control. Test the software thoroughly, and use a mains conditioner, and you have no more chance of a crash than with any other board. And if it does break, plug in the spare that came in the price.

Suddenly, you're not limited by the buttons available. Need a complex special effects system? Add an extra module to the programme. Don't like the way something operates? Customise it, as you do with your word processor. Draw your plan in AutoLight, transfer it to the lighting programme and then use that to light the show from, picking the lamps on-screen rather than printing a paper copy of the plan. All with the benefits of using a standard machine. If a lighting desk does go wrong - and they do, whatever the manufacturers claim - and corrupts a disk written in its own private format, than that data is lost. If a Mac file gets corrupted, or even if accidentally deleted, most of

it can usually be recovered using a standard utility programme. It's not a new idea, I admit. Pulsar had a system in the mid-eighties that used a BBC computer with an interface box. It never seemed to catch on. Perhaps the real lighting boards did still have the edge then, though at a price.

I don't believe they do anymore. For once, the sound people are leading the way, using standard computers with custom additions quite happily, and so showing that they can survive in a demanding environment. A few lighting tasks have followed with Macs controlling DHA's moving light curtains, and PCs displaying the data from Strand's new baby desks. The Galaxies of the world continue to sell. But, as computer prices fall and budgetary restrictions tighten, one can't help wondering for how much longer.

Robert Halliday became interested in technical theatre while at school, first in sound and then in lighting. He subsequently joined the National Youth Theatre, working on shows in London, Edinburgh, Moscow and on tour in the UK during the summer, while completing a computing degree and lighting student shows for the rest of the year. He now divides his time between working as an electrician, currently for the English Shakespeare Company, and as a writer on theatre and other subjects. His article on the National Youth Theatre appears in this issue and he has written for L+SI on previous occasions.

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Bovis Construction 43

Camelont 53
Cerebrum 15/20
Celco 43/OBC
Clay Paky 3
Compulite 60
Doughty Engineering 56
ETR 12
Formula Sound 27
Glantre Engineering 42
Gradav 43
Hardware Xenon 33
Hayden Pro-Audio 20

Hoist Supplies 50
Jands 18/19
Lee Filters 8/9
Le Maitre 82
Lighting Technology 6
London Laser Company 9
Ludwig Pani 5
Mainstage 15
Marquee 19
Martin Professional 16/17
Mec Systems 27
Midland Theatre Svcs 24

Modelbox 13
Multi-Lite 25
Northern Light 43
Optex 15/26
Par Opti Projects Ltd 65
Philips 10
Pulsar 7
R B Lighting 56
Secoa 34
Selecon 21
Sofiscotech 22
Southams & Sons 59

Tele-Stage Associates 52
Theatre Projects 45
Theatre Projects Consultants 48
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Unusual Rigging 19/38
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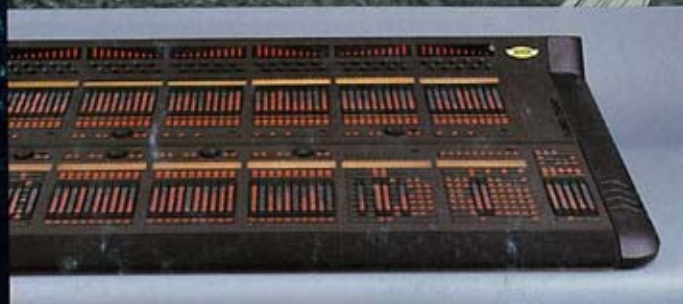
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