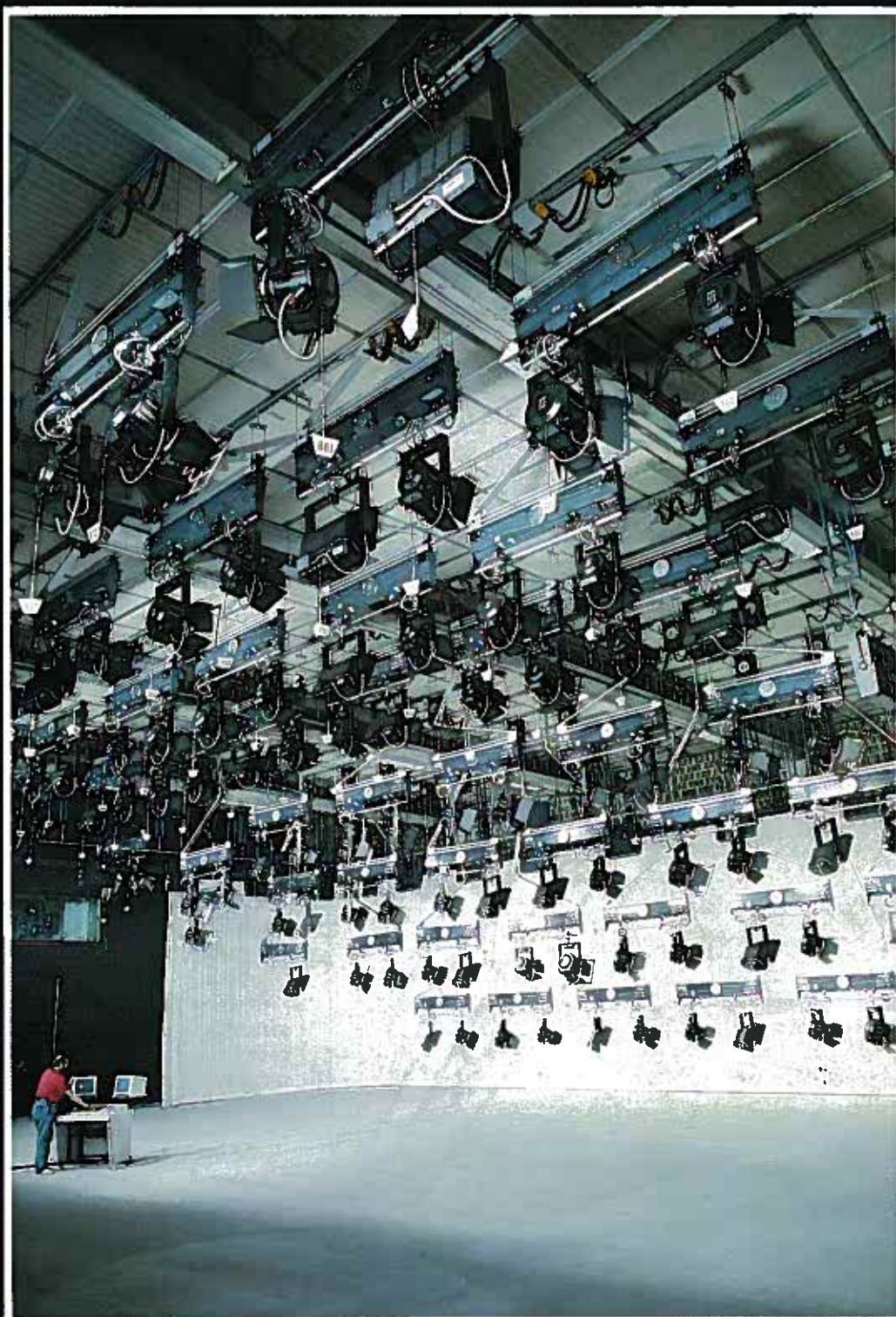


LIGHTING+SOUND *International*



One man control - a first in fully automated studio lighting at VTO in Hannover.
(see major feature in this issue)

PLASA

Published by the Professional Lighting and Sound Association

May 1988

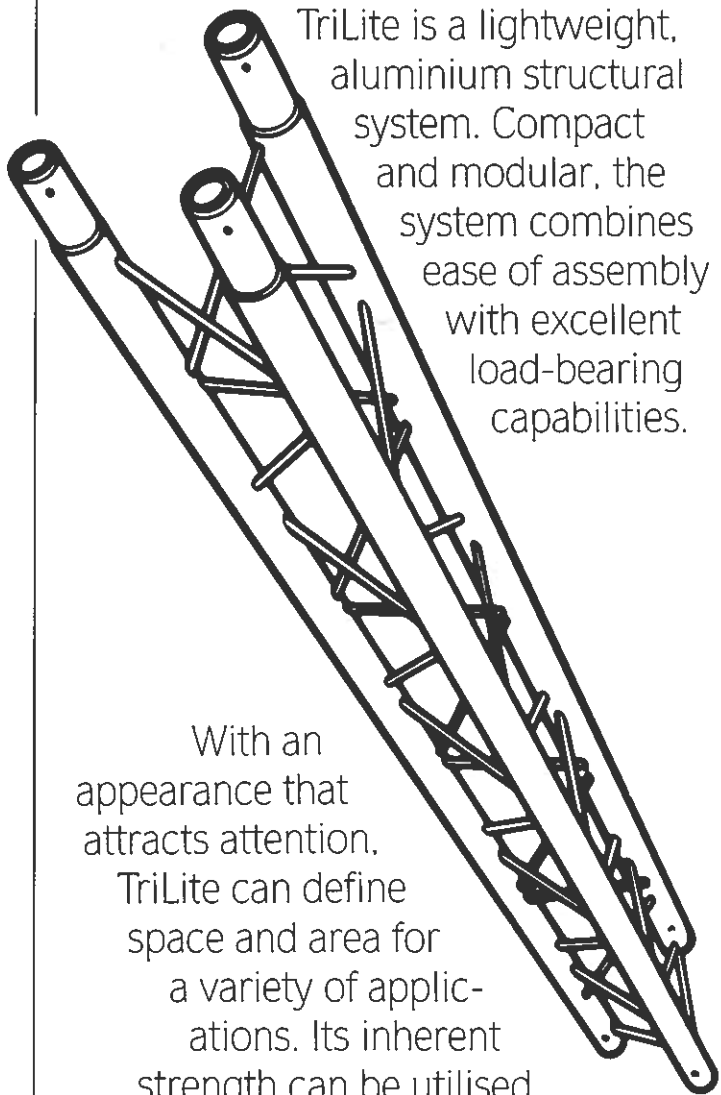
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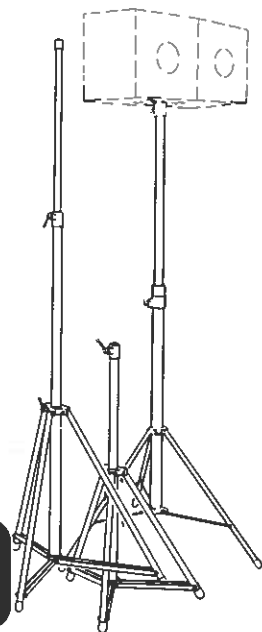
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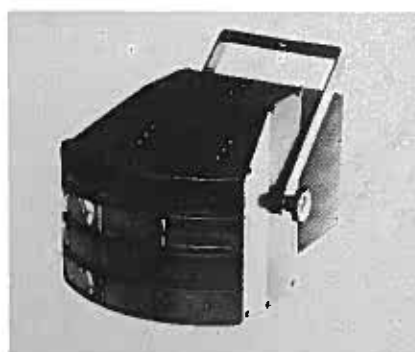
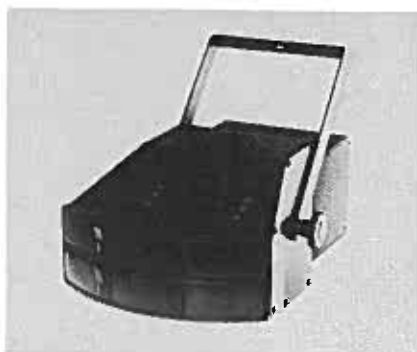
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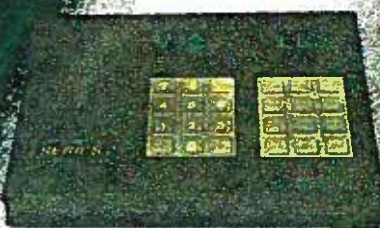
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LIGHTING+SOUND *International*

MAY 1988

7	NEWS in Lighting + Sound International
15	First Survey of the Professional Lighting & Sound Industry
17	At the Empire with OSKA
21	Hotel Discotheques: Creation and Installation with SuperVision
26	A World First: Fully Automatic Studio Lighting System installed in Hannover
33	The Hawth, Crawley: the Consultant's Story
36	The Arlington Leisure Mix
41	Spring Collection: A Trip Around the Trade Shows
58	Directory
62	PLASA Members



Fitted for a Prince

Designed by Mark Sibley of Sibbo Limited of Watford and Graham Whitcomb of Optikinetics, the discotheque rig pictured above was recently fitted on to the deck of a £10m yacht based in Cannes. It belongs to a Saudi Arabian prince.

The TriLite rig is finished in chrome and carries 64 pinspots and eight scanners, and its four legs locate into holes on the deck which are also used to anchor a helicopter. When not required the rig can be taken down and packed into three flight cases for storage on board the vessel.

So, next time you're thinking of doing an up-grade on your own boat . . .

LIGHTING+SOUND *International*

published by the
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THE FACTS

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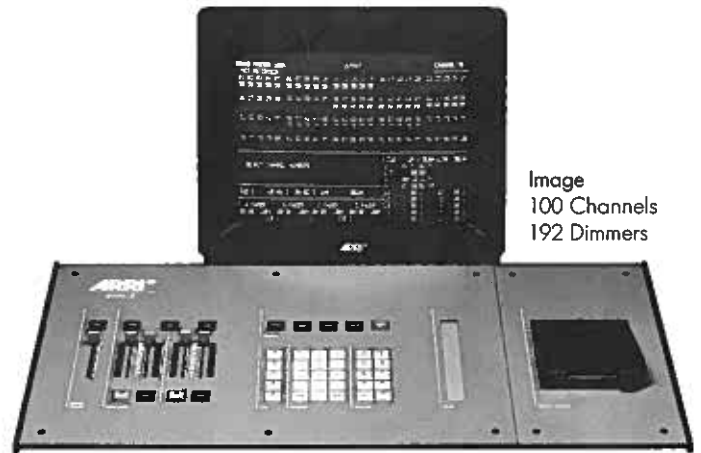
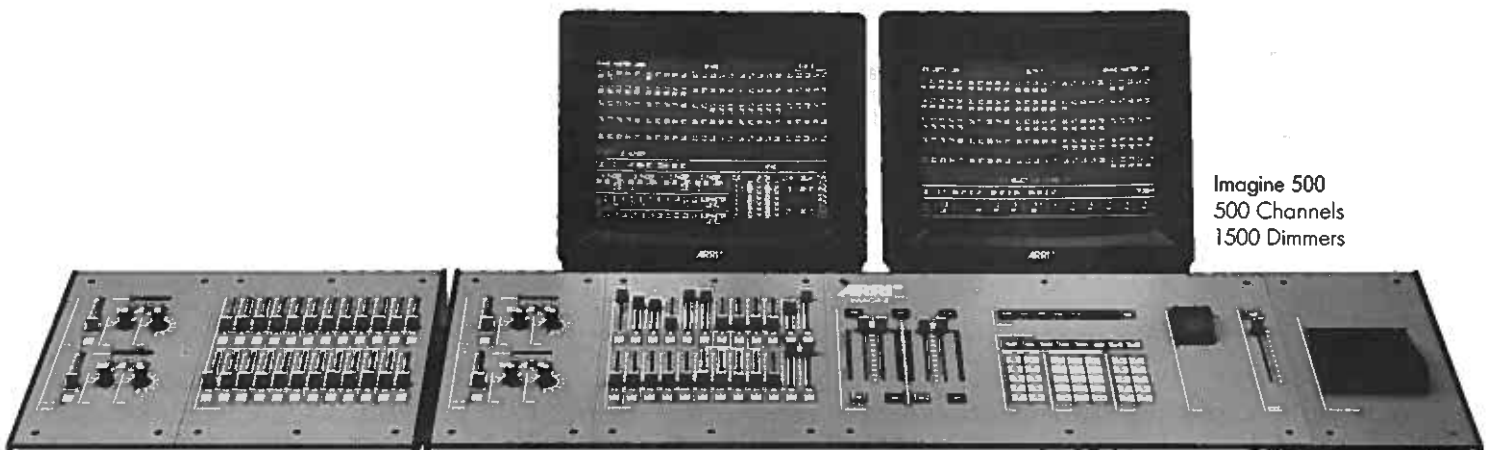


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250 Channels
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LIGHTING+*Sound* News

International

Marvin Altman leaves Strand Lighting



It has been announced that Marvin Altman has resigned as president and relinquished all his responsibilities for Strand worldwide as from May 1st. In the States, the small corporate office established at Long Beach will be closed down in due course and join the main US operation at Rancho Dominguez.

Oliver Hartree, only recently appointed as managing director of Strand Lighting Limited (UK) and who has responsibility for the organisation's European subsidiaries, will now have a wider brief. He will also be responsible for Strand Lighting Asia (from Hong Kong) and Strand Lighting in Australia.

We understand from a call to the office of Peter Blaxtan, divisional managing director of Rank Precision Industries, that the US operation will remain as it is, with Strand Lighting in Canada continuing to report to the US base.

Lee Colortran Wins BBC Contract

Lee Colortran International has announced that it has won the contract to supply and install production lighting luminaires and equipment for Studio

1 at BBC Television Centre, Wood Lane, London. TC1 - the largest of the studios at Television Centre - is undergoing a complete refit which is scheduled for completion by the end of September 1988.

The company won the contract to supply production lighting, which includes 274 multi-purpose dual source luminaires; 40 2.5/2.5kW studio spotlights; 25 5kW softlights; 40 4-colour groundrows; 20 1kW studio spotlights and 10 2kW variable profile spotlights. In addition, Lee will supply and install 267 new lighting winches and refurbish 168 existing winches; supply cyclorama track and winches, and provide a host of ancillary items including leads, spare lamps, studio doors and house lights.

Glasgow Concert Sound

Following the internationally acclaimed success of St David's Hall at Cardiff, Britain's Sandy Brown Associates have been commissioned by The City of Glasgow as acoustic consultants for the new Glasgow Concert Hall. Construction of the 2,850 seat auditorium is on target for a gala opening in 1990 when the City will be European 'City of Culture'. The entire structure is to be 'floated' on vibration isolating springs directly above Glasgow's underground rail system.

People

Camilla Aitchison, who joined Strand Lighting just nine months ago as a product manager to launch Strand into the filters business and who played one of the key roles in the 'Strand Spectacular' at Bristol last September, has been appointed marketing manager for Strand Lighting Europe.

She was previously with Courtaulds Chemicals where she provided a full marketing service from market research through to publicity and advertising.

Leaving Strand Lighting for new pastures is **Rod Bartholomeusz**, who is due to join Cerebrum Lighting as international sales manager on May 16. After early experience as a shipping clerk, Rod joined Rank Strand Limited as a stores clerk at their Kennington factory, but soon moved to the export department at King Street in Covent Garden. His experience within the company continued on the export side continued until 1978 when he was promoted to become a UK sales representative, responsible for London and the South East. Due to his success in this area he was promoted again, and in 1984 became export regional sales manager, covering Italy, Spain, Belgium, Holland, Portugal, Israel, Scandinavia, and the Indian sub-continent. He had the responsibility to ensure large projects were taken through to a successful conclusion.

With Cerebrum's heavily export-orientated business, Rod's contacts and knowledge will prove invaluable in creating new business for the company.



Camilla Aitchison.

Janice Larking has joined Allen & Heath to handle the UK distribution of their range of mixers. She had previously sold the range for another company, and prior to that worked in her father's pro audio dealership.

Bose UK has appointed two new sales representatives to handle the increasing demand for their professional sound products. **Graham Walton** will be covering the North of England and Scotland, and **Graham Collyer** will look after the South and South-West of England. Another new appointment at Bose has seen **John Dodson** take over the position as sales manager of the professional audio products division.



Janice Larking.

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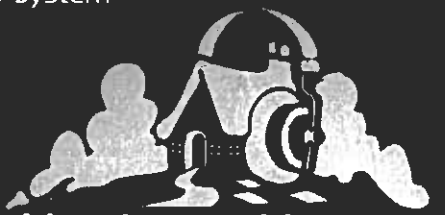
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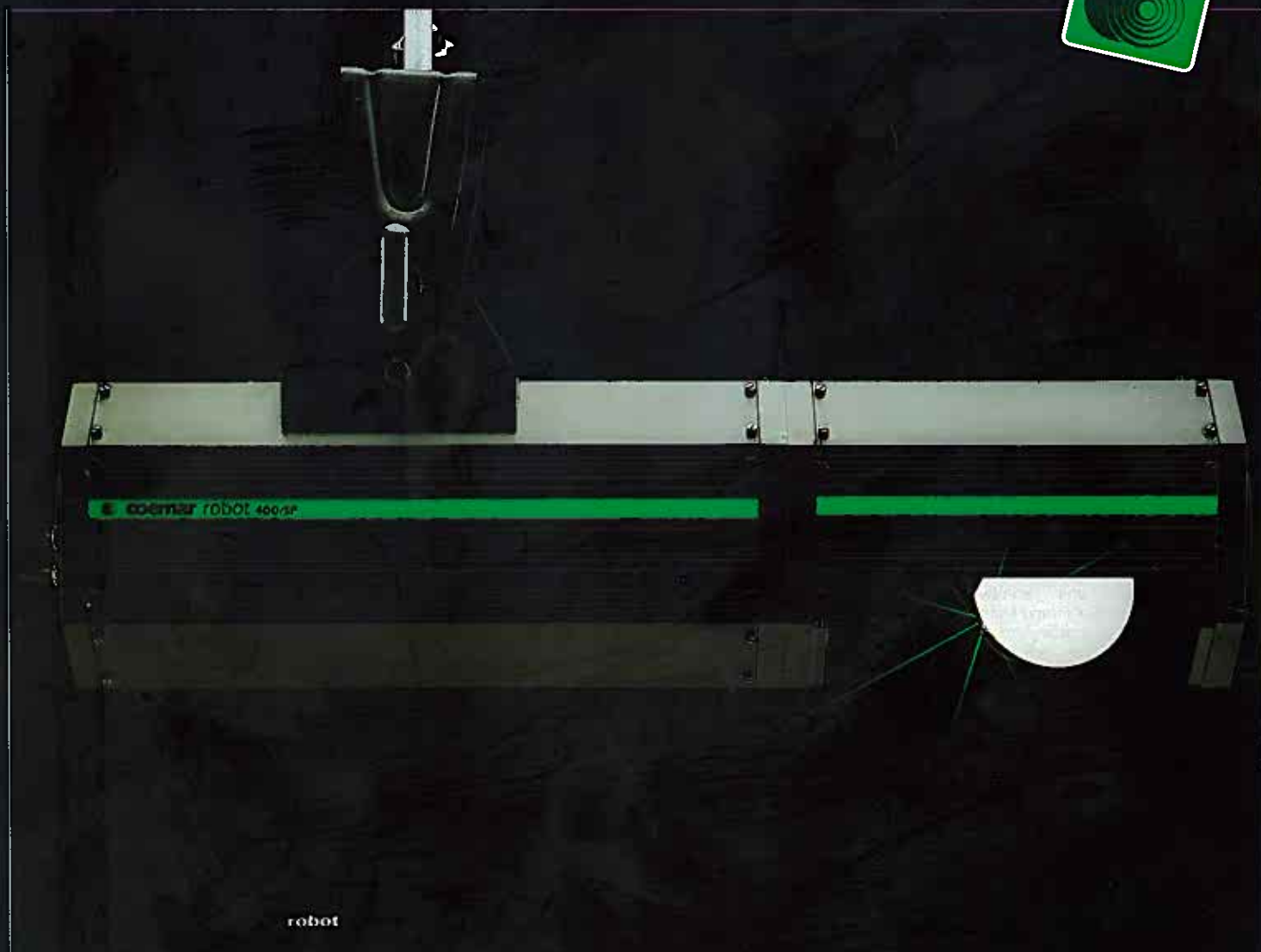
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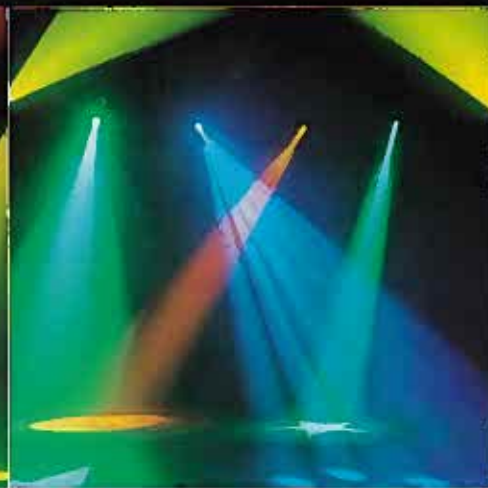
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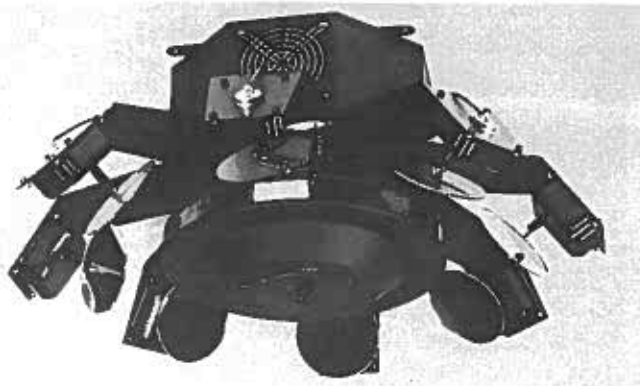
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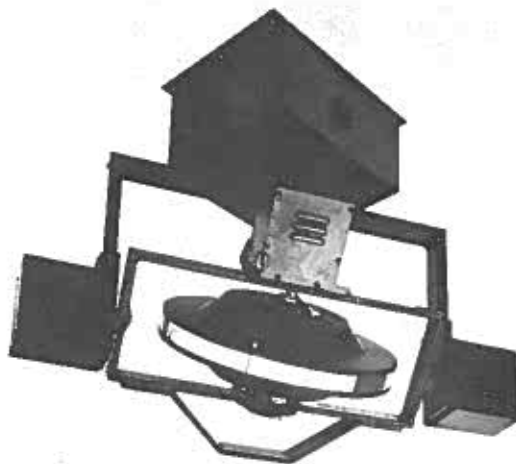
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coemar



The popular Sapro Surfer and (right) the Rainbow, now available in the UK from Jivelight following a new distribution deal.



Jivelight to Distribute Sapro Products in UK

Jivelight have announced that negotiations for the exclusive UK distribution of French-manufactured Sapro products were finalised at the recent SIB show in Rimini.

"I can foresee a good future for the Sapro range in the UK now that it can be offered generally to the trade at competitive prices through our nationwide distribution set-up," Jivelight's Dave Winfield told L+S. "The centre-piece range offered by Sapro fills a gap in Jivelight's ever-expanding range, and the new Magic range of flat beam effects is what the trade has been asking for for some considerable time. The future for both Jivelight and Sapro looks very exciting."

Pulsar Announce Exclusive Clay Paky Deal for UK/France

Pulsar Light of Cambridge and Pulsar France have agreed an exclusive deal for distribution of Italian Clay Paky products for both countries, director Ken Sewell told L+S. It follows close co-operation between Clay Paky and Pulsar whereby the complete electronics sub-assembly for the newly-launched Golden Scan is manufactured in Cambridge and then shipped to Italy. This is only one instance where both companies are planning closer involvement to make best use of each operations' specialist capabilities.

**FOR SPEEDY INFORMATION
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Lee Colortran USSR Exhibition Debut

Lee Colortran took part in 'Kultur 88' at the recently-opened Expocentr near Moscow, and showed the broadest range of products ever displayed by the company at any exhibition. It included lighting and dimming equipment, theatre

products, Lee filters, and the Mitchell range of cameras.

Head of marketing Steve Hall told L+S: "A number of very important contacts were established, including Mosfilms, the country's largest film studio complex, and a number of well known theatres including the Bolshoi."



Playlight's new illustrated Hire Catalogue was launched in April - details 061-793 5848.

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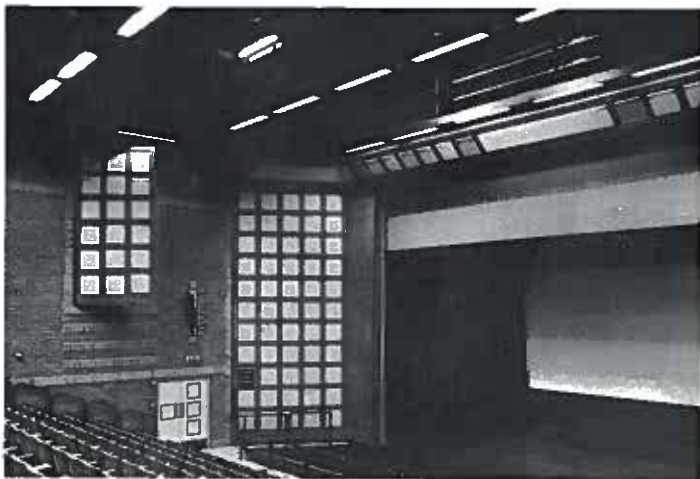


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The Harlequin at Redhill, with Bose Acoustic Cannons above prosc arch.



Tom Simpson of Pyramid makes final adjustments.

Two Cannons for the Harlequin Theatre

The Harlequin Theatre in Redhill has just commissioned a new Bose sound system for its multi-

purpose auditorium, featuring two Bose Acoustic Cannons. The installation was completed in just one day by Pyramid Light & Sound, after the East Grinstead company won the order in the face of stiff competition.

The Harlequin is a relatively new venue, pro-

viding stage, screen, conference and concert facilities, and the Bose sound system, which includes three pairs of 802s in addition to the Acoustic Cannons, will be used in all these applications.

The design for the audio system for this 460-seater auditorium was prepared on the Bose CAD Modeler system, a facility which proved particularly useful because the venue changes in character from one week to the next.

Tom Simpson and Ken Bereen of Pyramid see the Harlequin installation as a key project in attracting other local authority business. "There are a number of very good local theatres in the Surrey/Sussex area, and already they are showing a lot of interest in what we have done here at the Harlequin," they told L+SI. "The Cannons provide an excellent bass dimension, which makes for a very exciting cinema soundtrack. We've flown them above the proscenium in this instance, but there are a lot of possibilities with this combination of speakers."

Lee Test Chamber

Lee Colortran International has installed a new environmental testing chamber at its Kearsley, Bolton plant for rigorous testing of its range of luminaires. The two cubic metre chamber provides a wide spectrum of conditions - from 0% to 90% humidity, and from -30° to +45°C. All Lee Colortran luminaires and electronic control equipment, such as ballasts for the award-winning 'Super' daylight fresnel spotlight range, are now cycle tested at all temperature and humidity ranges to ensure that they will perform faultlessly in the many different climatic conditions encountered in use.

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1988 Spring Sale

Ex-demonstration **Phoebus Ultra Arc Series II** long throw followspot with auto zoom. Features the Halomet H.T.I. lamp which can be compared with other 2kW to 2.5kW discharge units. Designed for 100-300 foot throw. **£3000 + VAT**

Ex-demonstration **Phoebus Ultra Arc Series II** short throw followspot - details as above but designed for 25-150 foot throw. **£2500 + VAT**

Ex-Hire (but very little used!!) **Soundtracs M24** 'Live Audio' Mixer - 24 way into 8 into 2. Price includes stand, flight case, power supply and spare module. **£3400 + VAT**

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Trade Shows Special

L+SI features four trade shows this month - not least the ABTT event at London's Riverside Studios in April, reviewed by Jim Laws. As always, John Offord had his camera handy, and on this page is a glimpse of the activity fully reported and illustrated later in this issue.

Immediate right Strand Lighting's Alan Luxford (left) shares a joke with Martin Moore of Jules Fisher Inc. of New York. Also on the Strand stand (far right) were Heinz Fritz of Strand Lighting Germany and Light Works' Charlie Paton (see front cover feature). Below is Triple E's Cyberdescence-designed stand in the Riverside foyer. Below right is the Award-Winner line-up, with best product going to Triple E's David Edelstein (for their curved linear motor track - what else?), technician of the year David Ayliff, Frank Comerford of The Stage who gave them away, and Tony Bond who chaired the selection team.



Richard York congratulates Bob Massey.

Who's A Lucky Boy Then?

At the recent ABTT Exhibition, Zero 88 offered all visitors to their stand the chance to enter a daily free draw with the prizes being their new Sirius lighting desk. Each visitor had to participate in a hands-on demonstration, and then fill in a questionnaire. The questionnaires were then placed into a Tombola drum and drawn each evening.

The first draw was made by Richard York, chairman of the ABTT and was won by Bob Massey of Lee Colortran. The second draw was made by Fred Bentham and was won by Henny G. Kuit from Enschede in Holland.



Zero 88's Freddy Lloyd (left) with Fred Bentham.

Harman International Acquires Soundcraft

Harman International Industries Inc of Washington DC and Soundcraft Electronics Limited of Borehamwood, England, have announced that Harman has signed an agreement to purchase Soundcraft.

Soundcraft, founded in 1973 by Philip Dud-deridge (chairman) and Graham Blyth (technical

director), has become one of the world's leading manufacturers of professional sound mixing consoles with a product range extending from automated master recording consoles and smaller mixers for personal studios, to consoles for every sound reinforcement application, for video post production and for radio broadcasting.

Teatro Announces First UK Dealers

Teatro, the new stage lighting company based in northern Italy, has followed its successful UK debut at the recent ABTT Trade Show with the announcement of a dealer network which is to be set up throughout the country.

"Teatro's advertised request for dealers was met with a flood of applications before and during the Trade Show," managing director Mike Lowe told L+SI. "Careful attention is being paid to the location of each dealer in the country, and the selection process has now started," he said.

The first dealers to have been appointed are situated in London: **Action Lighting** in Acton, **Benco** in Wandsworth, and **Cerebrum Lighting** in Surbiton. These dealers will be joined by others around the country in the next few weeks, we were told.

"Comments received at the ABTT Trade Show confirmed our belief that the UK market would respond positively to a new manufacturer of luminaires offering a complete range of competitively-priced theatre lighting as a serious alternative to the UK's established manufacturers," said Mike Lowe.

"Prototype diecast chassis of the PC and profile spotlight lamprays, showing the new 1200W G22 and 2250/2500W G38 lamp bases, were enthusiastically received at both Siel in Paris and at the ABTT Trade Show by professional users and hire companies. Visitors saw the advantages of the rugged lamp and lampholder, the high quality component parts, and the standardisation of the 1000/1200W lamp sizes being particularly important in repertory theatre and for hire where strength and reliability of luminaires is important.

"Teatro could not have wished for a better start in the UK," Mike Lowe told L+SI.

Worldwide, Teatro have already appointed the essential framework of dealerships with outlets in Spain, France, Germany, Belgium, Holland, Denmark, Sweden, Singapore/Malaysia, Israel and Australia, and more links are currently under discussion. "The happy problem we have is one of selection rather than persuasion," concluded Mike Lowe.

Fane Establishes US Subsidiary

Fane Acoustics has announced the formation of its own Chicago-based subsidiary, Fane Acoustics Inc, to promote and expand the sale of Fane Products throughout North America. Outside the USA, Fane is probably the largest producer of loudspeakers in the world and offers a wide and comprehensive product range covering high end premium quality PA and sound reinforcement models, competitively priced and replacement and guitar speakers (including the highly acclaimed new Medusa rock speakers), horns, drivers, tweeters, crossovers, grilles, accessories and a comprehensive cabinet design handbook.

In the UK, Fane is launching its own distribution outlet Fane Direct, which will immediately replace the current UK Fane distributor, Audio Equipment Limited.

Make A Date

Announcements of trade events large and small regularly appear on the editorial desk of L+SI.

Here is the latest selection:

Bradford - 'Dial Open House' at Dial Sound & Lighting, July 7-9. Details (0274) 687605.

Manchester - Disco North Exhibition, September 28 & 29, The Great Hall, Manchester Town Hall. Details (0942) 833389

Milan, Italy - MITAS 88, the launch of a new show for equipment and services for the entertainment industry. September 29 - October 3 (concurrent with IBTS). Details (2) 4815541.

Harrogate - Entertainment 88. October 17-19. Details 01-637 2400.

Dallas - Lighting Dimensions International 88. November 18-21. Details (212) 677 5997.

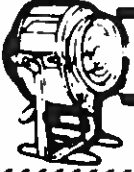
London - Sound Eighty-Nine. February 21-22, 1989. Details (06286) 67633.

New Moves

Le Maitre Hire & Professional Services has opened a disco shop to serve London and the South East. Most manufacturers' equipment will be stocked at 'The Jock Shop', which is based at 354/356 Purley Way, Croydon telephone 01-688 0440.

Scott Sound Systems' new base is at: Unit 4, Clayfield Road, Platts Common Industrial Estate, Barnsley telephone (0226) 745568. "It gives us better facilities and more space that we needed urgently," Glen Scott told L+SI.

KREMESA AT AVITEC -



KREMESA

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Kremesa's popular cast aluminium pinspot, attractively priced and styled. Quantity discount available.



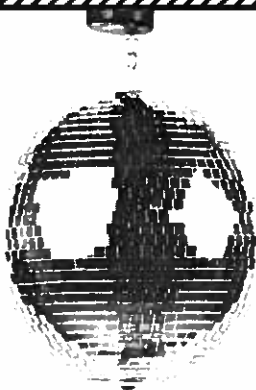
Kremesa, one of the world's leading lighting manufacturers, innovators of exciting effects such as the amazing Alien, present their "Traditional Favourites" collection.

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The smallest in the Kremesa helicopter family and another favourite - the traditional helicopter used and positioned correctly is still an exciting lighting tool!



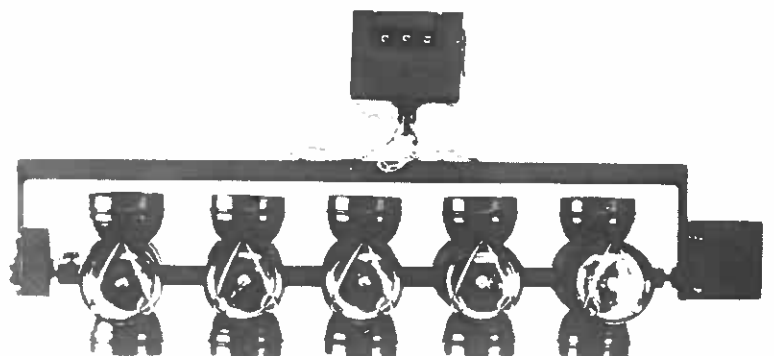
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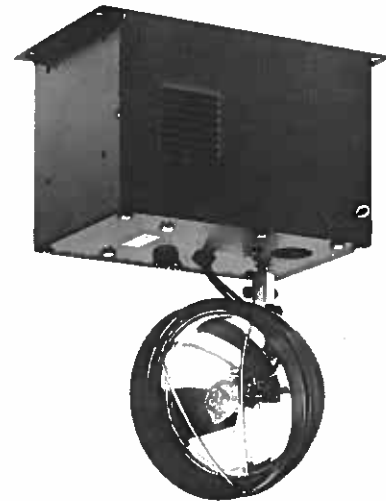
CR 56/100 HIGH

POWER SPOT



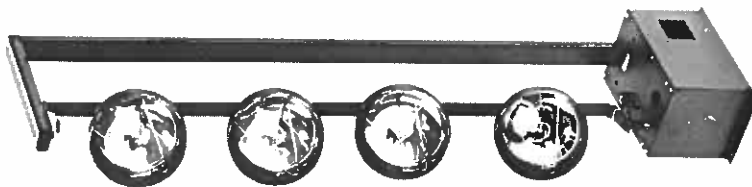
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Using the same high power lamp source as the 56/100 spot, a slow but smooth 90 degree scanner (CR90S) and a fast 360 degree spinner (CR360S). Like all Kremesa products, unquestionably well made and incredibly reliable!

CR 4 V/V WAVER



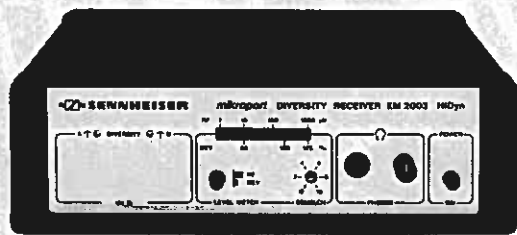
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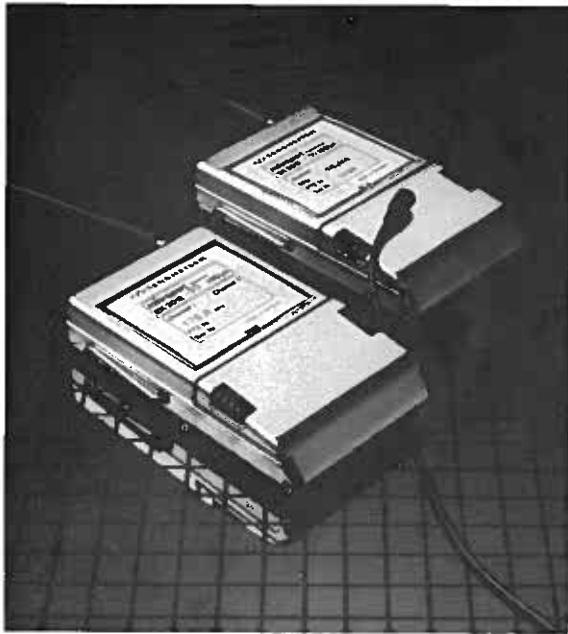
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First Survey of the Professional Lighting and Sound Industry

An exclusive L + SI preview by Caroline Gardiner of the Department of Arts Policy and Management, City University, London.

The professional lighting and sound industry is worth at least £146.3 million, and employs around 2,900 people.

These are two of the main findings of a recently completed survey of members of PLASA, carried out by the Department of Arts Policy and Management at the City University in London. The University has undertaken a number of similar surveys, notably for the Society of West End Theatre, but this is the first time that any comprehensive research on the professional lighting and sound industry has been carried out. This article outlines some of the main findings of the research.

113 PLASA member companies participated in the research, which was conducted by means of postal and telephone questionnaires between December 1987 and February 1988. They were asked about such topics as turnover in their most recent financial year, number of people employed, what kinds of areas their products were used in, exports and imports, research and marketing, and trends in the last three years. Only activities specifically in the professional sector of the lighting and sound industry were assessed. Turnover relating to, for example, the general consumer hi-fi end of the market, was excluded as far as possible.

Of course, not all companies with interests in the field of professional lighting and sound are members of PLASA, but for a number of PLASA member companies, there is some overlap of turnover figures, with one member perhaps distributing or retailing the products manufactured by another, and these two factors cancel one another out to a certain extent when assessing the total value of the industry.

Private limited companies predominate among PLASA membership. Most of them are small companies with turnovers of less than £500,000, but together they account for £103.6 million, or around 71% of the total turnover of the Association's members. There are only eight public companies in the Association, but they account for £36.6 million, or 25% of total turnover. Several of the large public companies which belong to PLASA are subsidiaries of American companies. Only nine sole traders and 11 partnerships are members of PLASA. They account for only £1.7 million (or 1% of total turnover), and £4.4 million (or 3% of total turnover), respectively. However, some of the largest private companies in PLASA began life as a one-man operation in someone's garage in the late 1970's and early 1980's, and the smaller PLASA members may well continue to grow and develop in this way.

This is still a young industry, particularly in the field of lighting. Over half of all member companies were founded less than ten years ago, and only ten companies were founded more than 25 years ago. That is not to say



PROFESSIONAL LIGHTING
AND SOUND ASSOCIATION

that there are not some companies of very long standing within the industry - two member companies were founded in the 19th Century. Sound companies tend to be the oldest established, while young companies dominate the lighting side of the industry. 41 lighting companies were founded less than ten years ago, eight of them within the last three years.

Members are engaged in a wide variety of activities, but manufacturing predominates. 70 companies are engaged in manufacturing; 26 of them are exclusively manufacturers. Manufacturing activities account for a much larger share of the turnover of the industry than any other activity, at around £65.8 million, and lighting controls, loudspeakers, and rigging and structural equipment are the most commonly manufactured products.

Distribution is the second most important activity among PLASA members. 58 companies are distributors, and distribution tends to be combined with other activities, particularly manufacturing. Only nine companies are exclusively distributors. Distribution is estimated to be worth around £45.6 million, although there will inevitably be some overlap with manufacturing turnover. The most commonly distributed products

are spotlights and luminaires, loudspeakers, special effects, and rigging and structural equipment.

Retailing activities account for around £13.3 million, installation for £12 million, and hire £6.1 million. Spotlights, loudspeakers and rigging and structural equipment are the most commonly retailed and installed equipment. Lighting controls, amplifiers, and rigging and structural equipment are the most commonly hired types of equipment.

PLASA members also work in other related fields, such as repairs and servicing of equipment, design, consultancy, production of shows and discos, services to disc jockeys, and publishing. Together, these types of activities are estimated to be worth around £3.5 million.

Lighting accounts for the largest share of members' turnover - an estimated £69.6 million. Over half of this business, £36.3 million, is in spotlights and luminaires. They account for more turnover than any other type of lighting or sound equipment. Business among the 79 member companies who deal in lighting is divided roughly as follows:

Spotlights/luminaires	36.3 million
Lighting controls	£19.9 million
Lasers	£2.8 million
Other moving effects	£6.8 million
Other categories of lighting	£3.8 million

The 'other' categories of lighting are primarily fibre-optics, gels and filters.

Sound accounts for around £59.2 million worth of turnover, with loudspeakers by far the largest category, worth £34.1 million. Business among the 58 companies who deal in sound is divided roughly as follows:



Queuing up to buy the goods at the 1987 PLASA Light & Sound Show - turnover of PLASA members is now worth around £150m annually.



PLASA chairman Peter Brooks: "For some years now, most of us working in the entertainment lighting and sound industry have had to guess at how big our industry is."

"The publication of PLASA's first research project has now given us some real statistics. Caroline Gardiner of City University has taken a great deal of effort to make the survey as complete as possible, and the officers and committee of PLASA would like to thank her publicly for her work on producing the report."

Loudspeakers	£34.1 million
Amplifiers	£6.9 million
Live mixing equipment (inc. disco consoles)	£6.8 million
Microphones	£1.8 million
Other sound	£9.6 million

The 'other' categories of sound are primarily turntables and compact disc players, cartridges, complete recording studios, and public address systems.

58 member companies deal in equipment other than the major categories of lighting and sound, primarily video, special effects, and rigging and structural equipment. However, for most of them, this is only a small part of their business. Only seven companies deal exclusively with this type of equipment. Business in this area is worth around £17.5 million, and is divided roughly as follows:

Video	£2.7 million
Special effects	£5.7 million
Rigging and structural equipment	£4.7 million
Other equipment	£4.5 million

The 'other' categories of equipment are primarily closed circuit television, security and alarm systems, accessories and casing.

For most members, their equipment is used in a wide variety of venues. Very few work exclusively for one type of venue, and those that do are most likely to be dealing in equipment that is used in discos in a permanent base. This is by far the most important

area of business for PLASA members overall. 55 member companies deal in equipment which is supplied to the venue-based discos market, and business in this area is estimated to be worth at least £21.9 million. The main types of equipment supplied to the venue-based discos market are spotlights, lighting controls, and loudspeakers. Lasers, moving and special effects, and live mixing equipment, while important in the venue-based discos market, together account for a much smaller amount of business in this market than spotlights do. The venue-based discos market is the one which has seen the greatest increase in business for members in the last three years, and one of the most likely to be expected to increase further in the next three years.

The mobile disco market, on the other hand, is more likely than any other of the markets PLASA members work in to have decreased in importance in the last three years. It is estimated to be worth around £9.7 million currently. In spite of the recent decline in this market, however, PLASA members seem to expect this area to increase in importance again in the next three years.

Other important areas of business include: professional theatre, estimated to be worth £14.8 million; television and film, estimated to be worth £13.3 million; and rock tours and concerts, estimated to be worth £13.1 million. Lighting controls, spotlights, and moving effects are the most important types of equipment in all of these three areas.

The hotel and conference trade is the area that PLASA members are most likely to expect to increase over the next three years, and it is currently worth an estimated £6.2 million annually. Leisure centres are also very likely to be expected to increase in importance for the professional lighting and sound industry over the same period.

84 member companies export, and exports are estimated to be worth around £48.1 million, or 33% of the total turnover of the membership. More companies export to Scandinavia than to any other country, but West Germany is the country with the largest amount of exports, at £8.3 million. North America is another large source of exports, worth around £7.8 million. Over half of all export business is to European countries. Lighting companies are most likely to export to Scandinavia, and sound companies to West Germany. The Scandinavian market is the most likely to have increased in the past three years, and the North American market the most likely to have decreased. However, the North American market is expected to increase in importance again in the next three years, while the Scandinavian market is expected to continue to increase.

Spending on marketing and publicity proved to be more common among members



Packing for export: over 60% of Pulsar Light of Cambridge's products go for export.

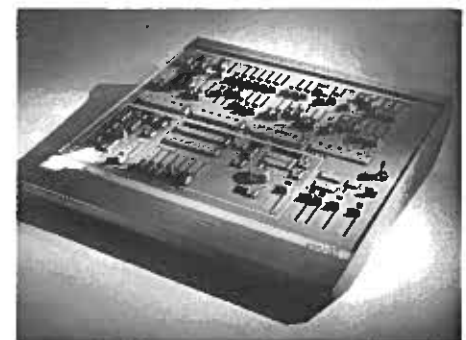
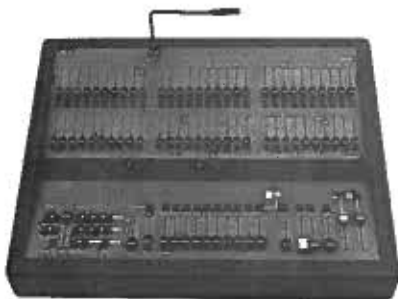
than spending on research and development, although a number of member companies have a parent company which deals with research and development on their behalf. Sound companies are less likely than lighting companies to spend money on either marketing and publicity or on research and development. Few companies spend more than 10% of turnover on either.

Staff training is also more likely to be undertaken by lighting than by sound companies, and most is conducted in-house.

It may be that results of this research offer few surprises to the company manager working in the professional lighting and sound industry. That is as it should be - those who work in the profession are best equipped to know how the markets are developing. But this is the first time that the business knowledge of such managers has been measured across the industry, in a quantifiable way. As such, it will be invaluable to PLASA in promoting the interests of the industry with organisations like the British Overseas Trade Board, and in raising the profile of the lighting and sound industry generally.

An organisation which possesses independently established facts and figures about its members can speak more effectively on their behalf than can the organisation which relies solely on informed guess work.

The full Report will be published on May 20 and mailed free to all contributing members of PLASA.



Three new British winners: Celco's 'Baby' (left), Strand Lighting's new 'Action' (centre), and Zero 88's new Sirius (right) have already sold a combined total of 713 lighting control boards between them (as at April 30) with at least 582 (82%) going for export worldwide.

At the Empire with OSKA

Julian Williams visits the new-look Empire at Leicester Square and talks to Tony Gottelier

Representing the discotheque industry on a seminar panel alongside other eminent lighting designers from the entertainment industry during Entertainment 86 at the Bournemouth International Centre, Tony Gottelier emphasised the necessity for lighting schemes to be designed by specialists. They were discussing the future for the industry, and he appealed to the venue managers present: "Don't reach for the nearest catalogue - call a lighting designer!"

Assessing the future with technology, Tony Gottelier said: "The microprocessor revolution has unlimited possibilities for flexibility in control systems," and suggested that manufacturers should make a change from simply channel programming. In fact, he actually decided to do something about the

situation, and to come up with something 'dedicated' to the discotheque industry.

He took his notes along to Mick Martin and Rowland Hughes at Axon Digital Developments to build the system, and then considered the most appropriate marketing men for the job. He approached lighting control manufacturers Pulsar Light of Cambridge Limited, who have achieved unparalleled sales success in their broad market area. Soon after, in July 1987, Oska was launched.

On Tuesday the 26th April 1988, the doors beneath the majestic arched entrance of the famous old Empire Theatre opened once again, in the centre of London's Leicester Square. Prior to its ballroom days it was remembered by an earlier generation for its spectacular variety and its reputation for

'brilliant lighting'. Flashing coloured neon and newscasters now beckon you: "The Heartbeat of the West End . . . The Empire Welcomes You."

Installation company Effects Lighting of Leicester, who initiated the lighting design concept with a brief from owners First Leisure, decided to call in Tony Gottelier as lighting consultant to check out their design brief.

"We produced the initial design concept to a brief from First Leisure and this was generally approved," explained Malcolm Robertson of Effects Lighting. "Then we thought, with such an important site, perhaps we should get an outside view. I had recently met Tony Gottelier at a trade function and it seemed to me that he was the ideal person to call in as a design arbitrator and First Leisure agreed. So the final plot is a case of an adaption from our original score."

With his partner Peter Wynne Willson, Tony realised that a traditional moving rig in a high budget lighting scheme was impractical within this large shallow dancing arena, and decided that the lighting needed to be more emphatic than was originally envisaged.

"We had to make the lights themselves do all the real work instead of relying on mechanical changes," said Tony Gottelier. "So we took a more theatrical, almost rock-n-roll approach, which is made easier by the availability of today's breed of intelligent luminaires."

A transformation took place. Out went the traditional seventies Tivoli lights and remaining pinspots, and in came the powerful new Raylights to project a mixture of solid colour. To maximise the efficiency of this equipment in such a wide space they pushed out these Raylights to traditional theatre boom positions in order to give them the longest possible throw, instead of from the conventional central cluster of discotheque equipment. By the theatrical use of mixing colour filters, which have been carefully chosen to colour wash from the side, a different colour is achieved in opposite lamps, which are paired across.

So a theatrical technique was applied. Even the old Strand Patt 49 was sedately incorporated into this rig to provide a maximum top colour wash, utilising proven theatrical resources into this latest 'toy effect' area of entertainment lighting. Tony Gottelier exclaimed: "Even today nothing fulfills a flood effect like those do!"

Although Tony doesn't like to use agitated movement for the sake of it, much preferring gentle movement to create the right atmosphere, he insisted that the rather staid helicopters should now have an additional feature - to pan around the arena at the same time as spinning their multi beams, to create a giant searchlight effect.

Considerable emphasis has been placed on lasers in the new Empire with two identical two colour plus cyan units supplied by Universal working in tandem from one end of the dance floor. This was an aspect of the lighting concept in which the lighting designers took a particular interest. In fact, Peter Wynne Willson designed and commis-





Centre line view along the dance floor of the Empire, Leicester Square.

Photos: John Offord



OSKA in control, with lighting operator Steve Ford.



Installation of the new lighting at the Empire was by Effects Lighting of Leicester who designed the scheme in conjunction with Tony Gottelier.

sioned a number of remote special effects devices especially for the purpose. As he explained: "Originally it was intended to use one four watt Argon twin beam and a one watt Krypton, but we felt that the Krypton would be overstretched unless of a comparable wattage and that the cost was unwarranted."

So they went for maximising what could be achieved with four beams working simultaneously with the added dimension of fully controllable external devices each capable of producing 2nd generation effects remote from the head and movable through 360°. The results are spectacular. "Tony and I believe that nowadays its what happens to the beam after it leaves the laser that counts," said Peter. "The rest has all been done before and target mirrors are simply not enough." With two sheet sweeps and

four diffraction scanners, as well as the five controllable devices, the Empire has S.D.I. status when it comes to laser fire power.

Again, to produce dramatic effects with a white light, Tony insisted on using the traditional halogen bullet beams wired in as block banks of light, instead of individually controlled, to create an effect of eight shafts of strong white curtain light.

The four man lighting crew who start work at 2.00 p.m. in the afternoon and finish at 3.00 a.m. the next morning work long shifts in order to sustain the maintenance level of this type of rig seven days a week.

The dance hall accommodates almost 1500 people a night and incorporates a stage at one end with a video monorail complete with a 'flying' video wall operated from an Electrosonic Picbloc control system. The DJ booth on the stage with its light rig, is

separated from the dance area and is backed by a mottle glass wall with coloured light.

Lighting operator Steve Ford, who demonstrated Oska to me - the lighting control system for this large rig - put it through its paces, making comments on the way as he overcame the unconventional operational techniques.

He feels the concept is a very good one, and that he has got used to using touch facilities because it "actually happens", and has quickly become used to not looking where his hands are on the video monitor touch keys, but watching more of what happens out on the dance floor itself.

When setting up the board, Steve explained that before he starts a show, he has to get his pages lined up so that he can override a Chase mode to get to the Static section and have the touch controls ready for an ap-



Lighting action - the balcony view.



Tony Gottelier points out the highlights to Julian Williams.

propriate cue. He said he has to think what programmes he has on what pages while he is running, and that's all he really needs to worry about.

In a venue such as the Empire, the Chase and Autopilot are generally the programmed modes used when running to a live disco. The Autopilot allows you to combine the movements and effects with the dimmer levels by controlling the intelligent lights for chases and crossfades together.

"The Empire was just the kind of hybrid installation Oska was conceived for," said Gottleier, "where out of 256 channels, 112 are devoted to the control of driven lights. The ability to be able to programme and orchestrate such powerful effects as the Coemar Robots and the Pancans as a concerted and integrated part of the total lighting performance provides an extra dimension hitherto impossible using a range of dedicated controllers."

Additionally there was the practical difficulty of housing and operating a conventional control system of 256 channels. To amplify this he pointed to the six metres-long control booth in which 80% of the space is occupied by stage lighting and sound desks and controllers, and only 10% by the entire Oska system.

One of the problems that worried Steve originally was that when running in performance with the Scene mode there are only 16 memories available for hands-on operation. But he found that with the selection of another group, a further 16 memories became available, increasing the number to 32 (replacing the memo-pad normally being displayed above). This can also be used as a two scene pre-set so that a combination of 16 chases can be utilised on the lower

keyboard, while (say) 16 Static Lamp keys can be simultaneously accessed.

It is Tony Gottleier's view that a system which enables as much self programming as possible has got to be the requirement in order for it to expand into other markets. And now the concept has been achieved, he is looking for more sophistication from it.

He insists that: "it's simply a change of approach from tactile feedback." The system incorporates all the facilities that existing control boards have. Its only drawback is the way operators perceive such a system, and he maintains that technology is just applying it in a slightly different way. He considers one of the major obstacles to get over is 'operator resistance' to another way of controlling a board than that which they have been used to.

"People want a system that is sensibly portable, easy to use, intelligent and quick," said Tony Gottleier and he explained that they are now concentrating all their efforts on the interface engineering side to get away from programming lights from a qwerty keyboard and leaving the operator to programme his own. "We are trying to give the skilled operator a flexible tool."

With a 20% faster, high-speed interface being planned to increase Oska's flexibility even further, they will be building in a complete back-up facility and built-in backstop into the interfaces so that in the event of a power failure the machine would revert to automatic mode and go into Autopilot. For the theatre market they will be adding a mimic monitor where you can actually see the state of things. The keys will show percentage level changes on a specific key when the levels are moved.

Although Axon are still working on the

software for such a model Tony reckoned that a system should be available in the next few months . . . so contact Pulsar if you know of a suitable theatre that would like to host Oska for its first live performance . . . in front of an audience!

Lighting Rig Technical Specification

Lighting Effects:

16 Coemar Robots, 16 Pancan Series 3 colour heads on 1k Ellipsoidal Luminaires, 120 Raylights, 288 Halogen 70W spots, 8 x 10 Halogen lamp dishes, 12 Coemar Astutos, 6 Coemar Corals, 20 Coemar Spartans, 18 theatre 1000W floods, 8 motorised beam deflectors, 4 Coemar Fortes, 16 mirror balls with neon, 12 blue neon diamonds, 12 pink neon diamonds.

Laser Effects:

2 Universal Lasers 4W Innova 70 triple beam argon lasers, 40 mirror targets, 4 diffraction scanners, 4 directional cones, 1 direction 360 degree pattern generator, 2 mirror prisms.

Video:

1 Electrosonic 16 monitor video wall in 2 x 4 monitor format, 1 Electrosonic Picbloc framestore system, 1 twin-driven monorail.

Controls:

1 Pulsar Oska 256 channel lighting control system, 20 mode WU8HP dimmer packs, 1 PM19 laser controller, 1 Electrosonic C-thru video wall computer and 1 Wallmaster real-time programmer.

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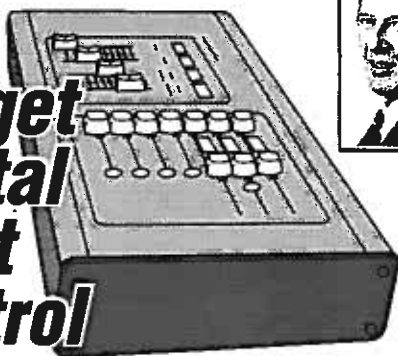
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Hotel Discotheques: Creation and Installation with SuperVision

John Offord went to St. Peter Port, Guernsey, to see the latest discotheque created by SuperVision International Discotheque Services Limited.

I went to Guernsey in the Channel Islands to do an article on a smashing little discotheque down in the depths of the Old Government House Hotel in St. Peter Port. As a result of the trip I can not only tell you about 'Scarlett's', but also about equally up-market discotheques in hotels in Cairo, Casablanca, Budapest . . .

The company responsible for this parade of exotica is London-based SuperVision International Discotheque Services Limited, headed by managing director Chris Bradbury, who set up the operation in 1982 to provide a complete service that ranges from design and installation through to servicing the completed venue.

Now 40, Chris Bradbury spent his early twenties in the world of mobile discos, going into a partnership with a friend to manufacture consoles. "Mono - long before the days of Citronic!" he explained. "We soon realised that the people operating them were making more money than us so we started an operating company - Nocturne Mobile Discotheques - in London. We also undertook many sound installations in boutiques in the Kings Road when that was the 'in thing'."

For a few years he left the business, switching over to the motor trade as a sales manager for BMW before a chance meeting resulted in him speeding back into show business. He joined Bacchus in North America, based in Toronto, and gained invaluable sales experience in addition to re-aligning himself with the current state of play in the discotheque industry. He was highly impressed with one aspect in the US: "I'm not keen on their lighting, but their sound is fabulous," he said.

Back in England he designed the lighting for Tokyo Joe in London in 1979. Soon after, rumours that Bacchus were to be taken over by Julianas proved to be true, and at that point many people went their own way - Chris Bradbury included.

He initially decided to go into video -



Chris Bradbury, managing director of SuperVision.

hence the company name - putting big screen video systems into clubs and pubs, and even went to the extent of producing own-copyright material to show on the screens. "The idea proved to be premature," he told me, "so we had to knock it on the head."

"I was then approached by a hotel group to design and install a discotheque in Cairo. They were fairly insistent, so I said I would give it a try!" That was in 1982, and more and more contracts from the same group (Metropole Hotels) and others soon followed, and SuperVision now completes at least five major hotel discotheque schemes every year in addition to separate video work for clubs and pubs.

The company title, although never originally envisaged to, now has a double meaning. From the early idea of big screen vision, these days it also embraces the overall range of services supervised by the organisation.

SuperVision's services fall into four categories: sound, lighting, video, and service contracts, and all four are usually linked together into one complete package - par-

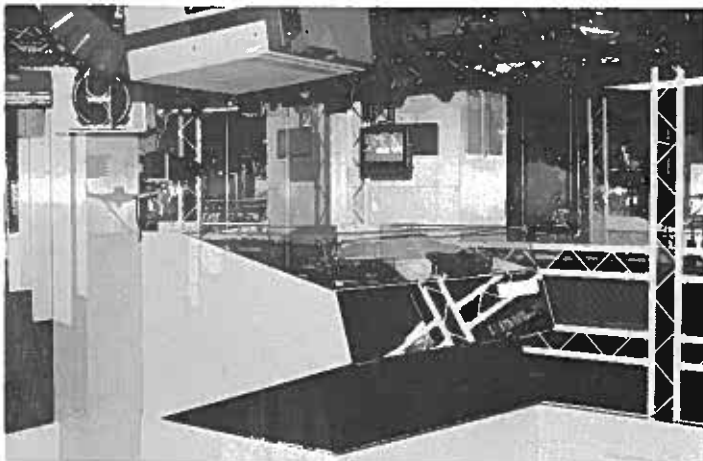
ticularly for discotheque schemes in major international hotels. Working closely with the owners, Chris Bradbury and his team will more often than not sit down with pencil and paper and come up with the complete design and operation package that will see the venue right through to opening day and beyond, with a service contract that includes engineering visits through to the provisions of an international DJ and all his necessary wherewithal.

I discussed with Chris Bradbury the philosophy behind the operation. "In my view competitors often try to impose European or even London ideas on schemes around the world. I think you should take into account many factors, and **where** you are. We also push the flexible entertainment room context. By utilising different effects we can give clients total flexibility, so that they can also run fashion shows and other events. For instance, here in Guernsey the big screen can be used during staff training seminars, and so on. Everything we do is angled towards flexibility."

Chris Bradbury works closely with various British equipment manufacturers - in the case of Scarlett's with Optikinetics Limited - and uses home-produced equipment wherever possible. "British products are the best - and I think that's absolutely correct, even though I also happen to be very patriotic. Without any doubt at all, British video technology is also the best in the world, so there is no difficulty in using British equipment in our schemes."

Scarlett's

Previously 'Barbrellas's, the discotheque at the OGH in St. Peter Port has been enlarged from its original state by the removal of various walls to create a more spacious feel. In addition, seating areas have been greatly improved and the dance floor area has been 'dug out', allowing the installation of a TriLite rig above with all the appropriate lighting and sound equipment.



The SuperVision-designed control area at Scarlett's viewed from across the dance floor . . .



. . . and from the inside, with lighting controls to the left.



Scarlett's, Old Government House Hotel, St. Peter Port, Guernsey. White finished TriLite and UV painting of TriLite struts in the rig are a special feature of the venue.

The entire balustrading system surrounding the sunken area and surround seating is also made from TriLite - a new approach - and has been finished in white, giving a fresh and clean appearance to this area of the club. The same theme is continued into the two main bar areas by the extension of two rigging 'arms' - also finished in white - carrying lamps producing narrow beams of light down to the floor.

Lighting centrepiece is a Mac Argus joined

by numerous other bits and pieces, many bearing the Optikinetics brand name, and a 'Triton' gets the switch-on when big Mac needs a break. Opti's famous Solar and Quasar projectors give all the necessary laser simulation and much more, and very clever use of UV, including the red painting of TriLite cross-struts in the rigging gives the DJ plenty of options when it comes to changing scenes.

Chris Bradbury was proud of the way the

rig itself had been brought in as part of the lighting act. "We finished it in black, but the struts between have been coated with ultraviolet reactive paint. When the UV lights on the ceiling are activated in different sequences, the UV-painted struts glow in turn, and give the appearance of hundreds of tiny neon tubes flashing," he explained.

When it comes to sound, SuperVision use Harrison and Quad equipment "almost exclusively" with Parker Speakers. "They are JWP 90's, but we are allowed to call them SV90's," said Chris Bradbury. "Parkers powered by Quad amps have been running successfully in Cairo since our first installation in 1982, and given the power fluctuations there, and all the other variables, that is an excellent record."

"The SV90's at Scarlett's give a very strong sound on the dance floor, but allow conversation in the seating areas. They were designed for use in hotel discotheques, and greatly reduce the possibility of sound spillage to guest rooms," Chris explained.

Now up and running - it officially opened on 19 April - Scarlett's is still in the hands of SuperVision who have a three year contract with the owners, Channel Hotels, to take care of the venue as far as the operation of the discotheque is concerned. It means the hotel can get on with running all its more usual facilities, and safely leave the technical and presentation side of a discotheque in capable hands.

SuperVision's system means that venues using its service contracts will have an internationally experienced disc jockey (on a 3-6 month rotating basis), used to running shows in luxury hotel situations, be familiar with hotel operational systems and management structures, and who can be replaced in case of illness from the company's team of professional international DJ's.

The careful organisation of this aspect of



Projected effects play a major role in creating the atmosphere at Scarlett's.



SuperVision's contracts director Sharon McDonagh with resident international DJ at Scarlett's, Cliff Lester.



A 'first': curved TriLite is incorporated in the balustrading.



Video can be used with a 'live' camera facility.

SuperVision's operations is in the hands of Sharon McDonagh, contracts director for the company, who has to make sure that the team of DJ's is regularly supplied with records from Europe and the USA, and also take into account feedback from the various DJ's regarding local tastes in music and so on. Also on the shopping list are videos, and out from the UK go tape or laserdiscs of the latest pop productions, coupled with new styluses, record and tape cleaning materials, slip mats, etc.

Also included in the contract are regular engineering visits to check out equipment, and Sharon McDonagh and Chris Bradbury will also visit venues on an executive basis to discuss promotions and other revenue building ideas.

Although only a small and close-knit organisation, SuperVision has already been responsible for a large number of installation contracts world-wide, and service deals are carried on in many of the operations brought on stream. And with Hotel groups such as Hyatt Regency and Sheraton you can be working in different parts of the globe at very short notice.

I won't tell you where Chris Bradbury and his team are off to during the summer, or I'll miss a scoop for L+SI. All I can say is that it will be exotic, well designed and organised, a long way away, and the first discotheque in ...

Equipment Schedule

Scarlett's, Old Government House Hotel, St. Peter Port, Guernsey, Channel Islands

Complete dance floor rig and balustrading constructed from TrILite

Mac Argus centrepiece
Triton centrepiece



John Jeffcoat, Optikinetics' executive director for export sales (right), who worked very closely on the scheme with SuperVision, pictured at Scarlett's with technical director Tony Reader (left), lighting engineer Martin Oatley, and managing director Chris Bradbury.

Neon chase system
Strobes
Spinners
Colour floods
Pinspots
Soundscanners
Custom designed insert dance floor lighting effects
Quasar strobe projectors and sound animated
Solar 250's, both with beam effects
Helicopters
Quatrafog smoke system
Big Screen video with electric screen, monitors, and live camera

Illuminated stair nosings
Illuminated skirting board effect
Control: Light Processor Commander and System Sensor, Optikinetics Sound Scanner and Strobe Controls

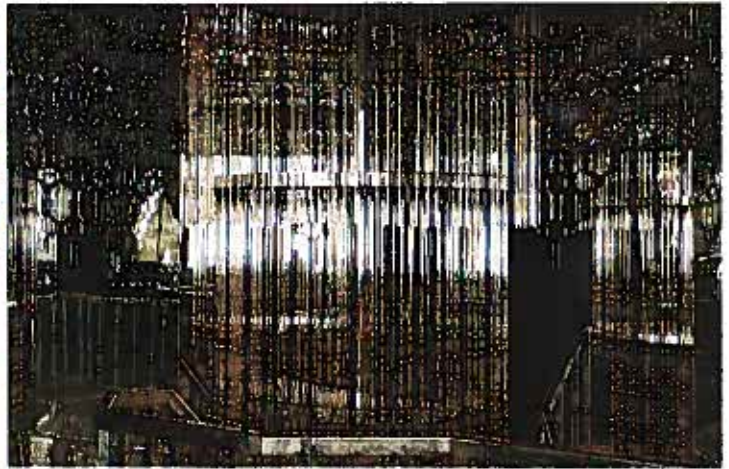
Design, supply and installation of discotheque lighting, rig system, video and sound system by SuperVision International Discotheque Services Limited (01-385 2383).

Project team at Scarlett's:
Tony Reader, technical director
Martin Oatley, lighting engineer
Selwyn Campbell, video engineer
Kim Smith, assistant

SuperVision Worldwide



Lasers at the Casablanca Hyatt Regency were installed by SuperVision in conjunction with Laser Systems Limited.



Regine's Night Club in the El Gezira Sheraton, Cairo. The centrepiece above was constructed from polished neon tubes with Tivoli inserted.



SuperVision designed, supplied and installed the complete scheme for the Heliopolis Movenpick Hotel in Cairo. The scheme features a bar graph sound-to-light display and the biggest video screen in Egypt.



SuperVision installed this complete AV presentation scheme for a major London advertising agency in 1987. It was one of two schemes for the same client, plus a moveable system.





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A World First: Fully Automatic Studio Lighting System installed in Hannover

L + SI invited Heinz J. Fritz, managing director of Strand Lighting GmbH Germany, and Derek Gilbert, managing director of Glantre Engineering Limited UK, to describe the fully automated lighting system recently installed at the studios of VTO in Hannover.

March 31st 1988 saw the handover of what is probably the world's most advanced automated studio lighting facility. It was just over six months earlier that German private sector studio operator VTO (Verlag Teresa Orłowski) placed a DM 2.7 million (£900,000) contract with Strand Lighting GmbH Germany for a major design, supply, installation and commissioning package for two studios encompassing motorised remote controlled luminaires, control and dimmers, self-climbing hoists, structural steelwork, electrical distribution, retractable seating, tracks, drapes and studio accessories.

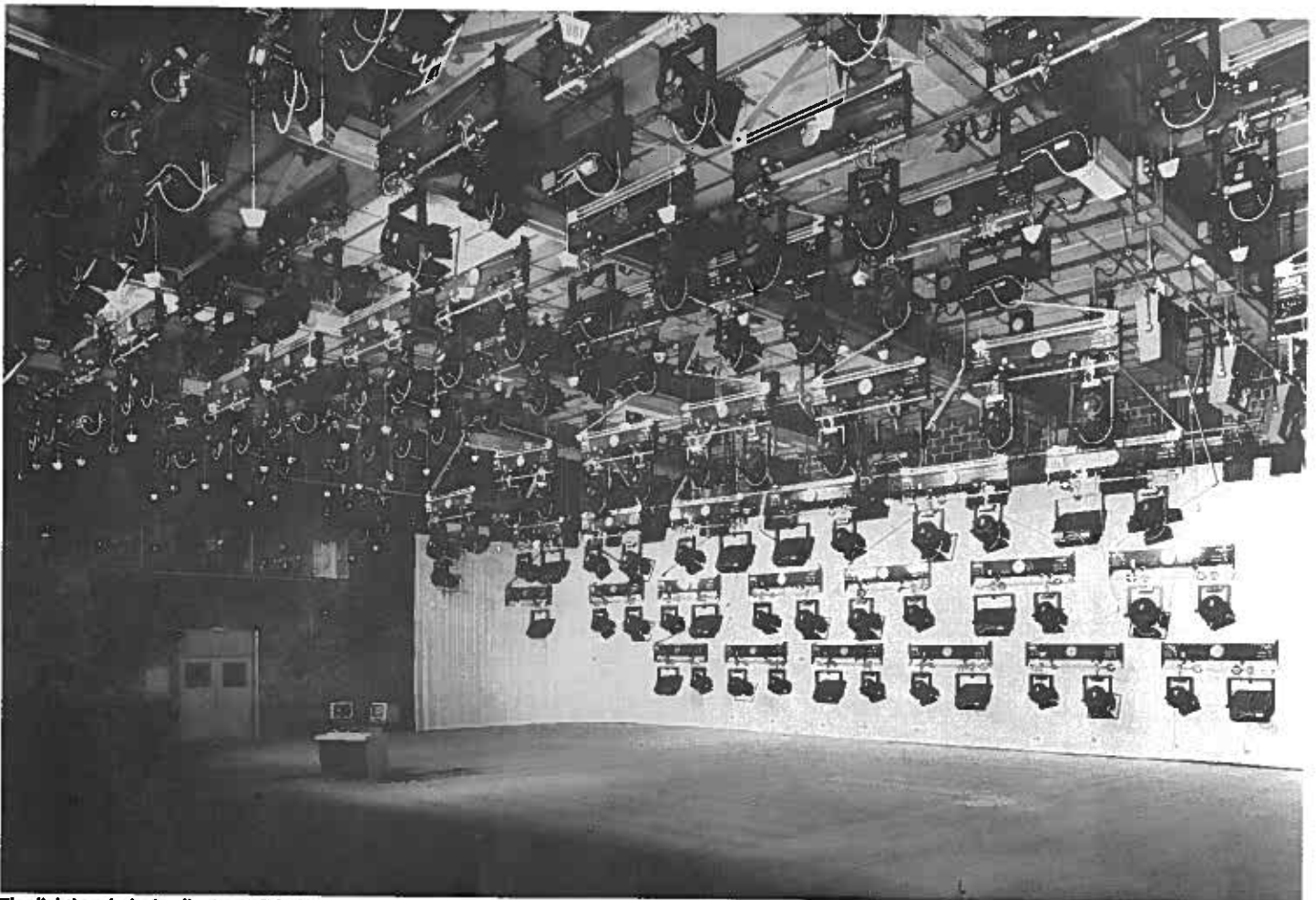
The newly constructed Medienzentrum studio complex in Hannover was originally designed as standard industrial and office accommodation, but during construction, a lease was acquired by VTO and the design amended to incorporate two TV studios Nos 1 and 2 of 680 and 260 square metres respectively, together with ancillary office and production areas.

A number of leading studio lighting com-

panies were invited by VTO to submit turn-key design and build proposals, but the majority were overawed by the short timescale available and by the demanding brief that ranged from precision remote control of luminaires to design and implementation of structural steelwork. Strand Lighting Germany were the only company prepared to respond to the challenge imposed by the project. From the earliest stage, they involved as their design, project engineering and co-ordination partner, Glantre Engineering Limited of Reading, England. The two companies pooled their resources to provide a comprehensive design proposal with full presentation drawings within two weeks of the initial site survey. The contract award followed shortly afterwards, with the basic building already structurally completed.

The first difficulties arose from the building's change of use. Roof and walls had been built to normal industrial standards and the close proximity to Hannover airport's flight path meant that major provisions were necessary in order to achieve an acceptable

standard of acoustic isolation for the studios. The acoustic consultant's requirements for a 300mm layer of dense insulating material, together with allowance for 'worst case' winter snow loadings on the roof, all but accounted for the full load bearing capacity of the 26m span reinforced concrete roof beams of the main studio. As a result, a totally separate steel structure was needed to accommodate the normal studio lighting and scenery loads. Additional design constraints were caused by the restricted working height of 7.6 metres between the studio floor and underside of the existing roof beams. It was decided to install the supporting structure for the hoists between the roof beams thereby gaining an additional 90cm. Glantre's design team carried out detailed load calculations and jointly with a German structural engineering consultant appointed by Strand, designed the necessary additional primary supporting steel structure together with all secondary steel support beams, galleries and catwalks. Approvals of the design were obtained from the Hannover



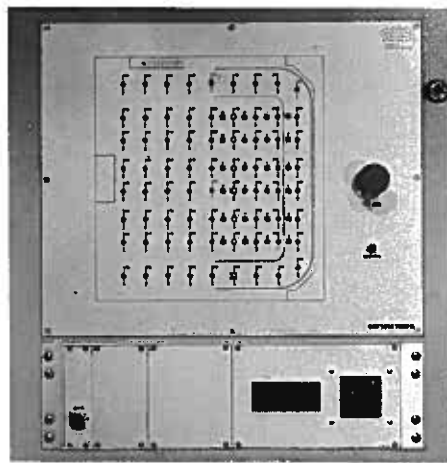
The lighting rig in Studio 1 at VTO, Hannover.

City Authority and the steelwork installations carried out in November 1987 by Strand's sub-contractors Gueldner Stahlbau.

The studio lighting installation was to be based on extensive use of motorised remote controlled luminaires in a basic fixed rig configuration along with a semi-saturated layout of motorised self-climbing hoists. Although involving an above average capital cost, this would permit VTO's entire studio lighting installation to be handled on straightforward productions by a single person who would be lighting director, console operator and electrician all in one. For the major light entertainment productions that are envisaged, the lighting complement can be increased to two or three - in fact the latter figure becomes the minimum personnel level when two followspots are required.

Use of the Quartzcolor Giano double-ended dual source luminaires was considered initially but rejected on the grounds of cost. Instead, it was decided to adopt a basic lighting rig for Studio 1 consisting of 36 5kW Pollux fresnel spotlights, 64 2kW Castor fresnel spotlights and 36 2.5/5kW Arturo softlights. The fresnel spotlights are fitted with motorised pan, tilt and focus while softlights have controllable pan, tilt and 2.5/5kW switching. Motorisation of barn-door shutter movement and rotation was considered desirable but not mandatory; barn-door adjustment by pole operation was chosen as a compromise. The luminaire motorisation system selected was the Precision Automated Lighting System, PALS, developed for Strand Lighting by Light Works Limited under a contract granting Strand exclusive world-wide rights.

The PALS installation includes a controller in the main lighting control room and a portable studio floor unit. Most luminaire operation is expected to be carried out from the



The Hoist mimic and control.

latter. The PALS studio floor panel is installed in an integrated lightweight mobile trolley together with hoist and main lighting control remote units. A trailing cable system was selected in preference to infra-red or radio remote control and a number of alternative socket outlet boxes are provided.

The PALS controller, also developed for Strand by Light Works, is based on an IBM Personal Computer with dedicated keyboard and serial line driver board. All the electronics are installed in a rack mounted version in the main lighting control room. Command and cue information are displayed on a high resolution colour monitor. Control software has been customised to suit the Medienzentrum installation with screen layout specially developed to mimic the studio plan, making the complete system very simple to operate.

While the main usage of the PALS system will be for rapid setting and focusing of studio luminaires, the controller permits

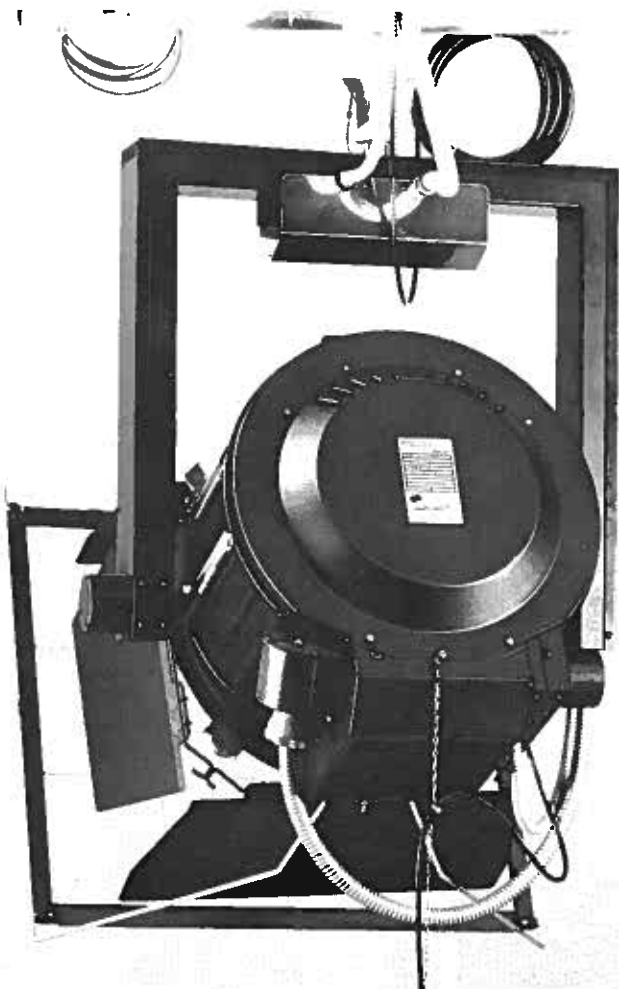


A remote-controlled Arturo 5kW.

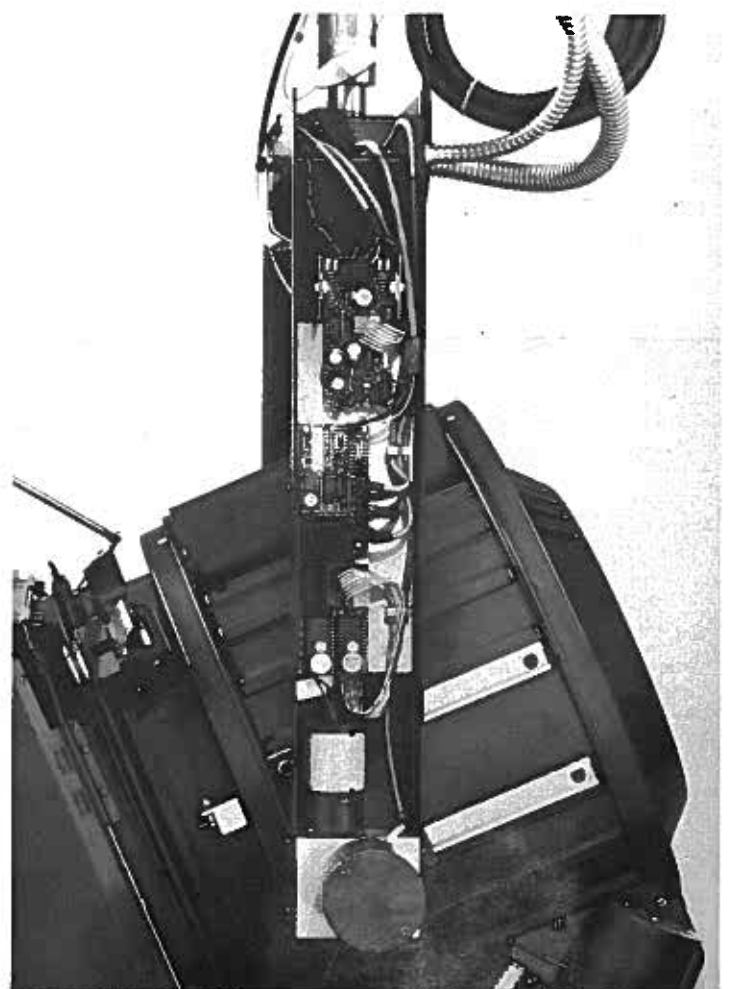
cues to be stored and replayed to enable luminaire resetting or special effects sequences to be carried out during a production. A further benefit is that for repeat productions that recur on say a weekly basis, the usual luminaire settings can be instantly recalled.

The absolute position of each function of each luminaire is recorded for every cue which is then recorded directly on to hard disk. Groups of cues may be copied on to floppy diskette for back-up and library storage. A single 20 megabyte hard disk will store over 5000 cues, a quantity far in excess of any conceivable user requirement!

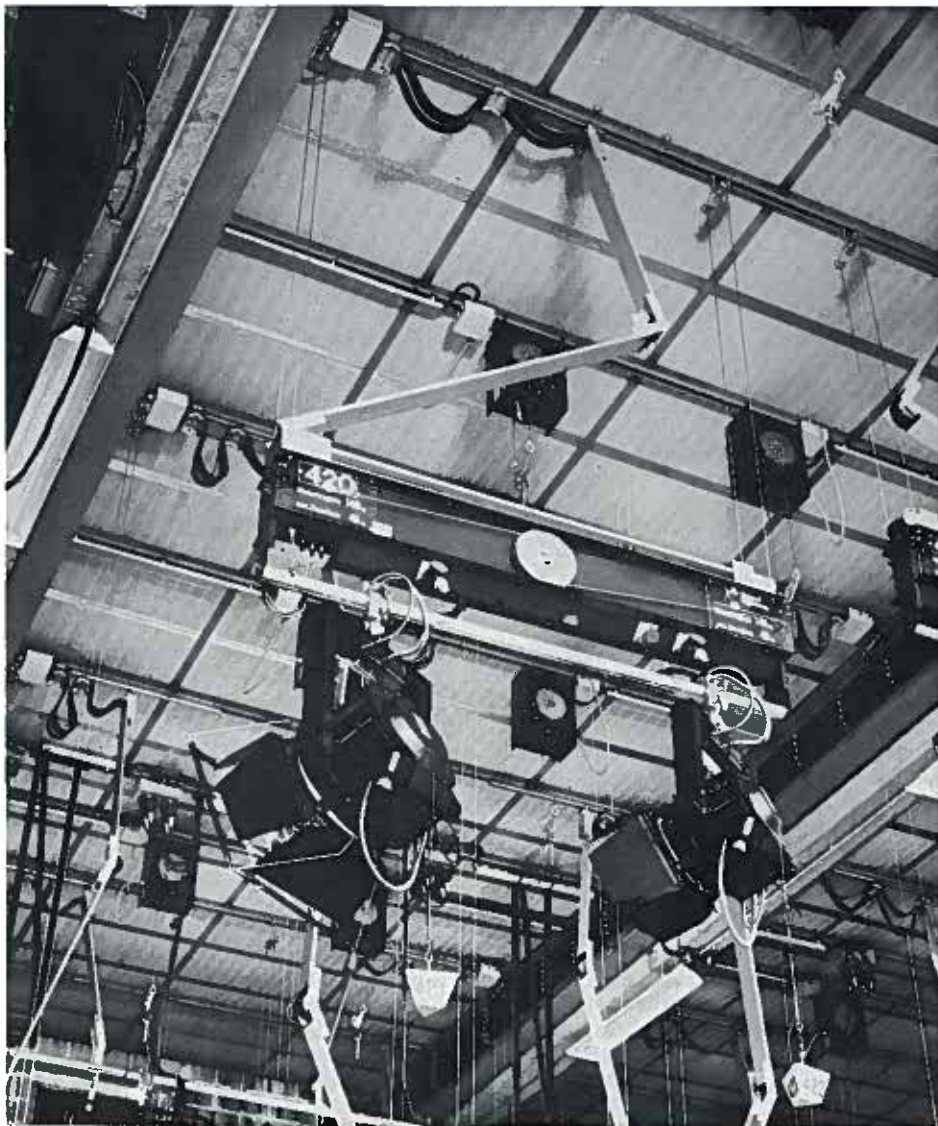
The dedicated keyboard has cursor keys for positioning the lights, numeric keys for selecting addresses and groups and a range



A remote-controlled 5kW Pollux with outrigger colour frame.



Inside a PALS yoke, showing motor, gearbox and electronics.



The self-climber and scenery point hoists. The installation electrics are concealed in the supporting steelwork.



View from the lighting control room through to the studio.

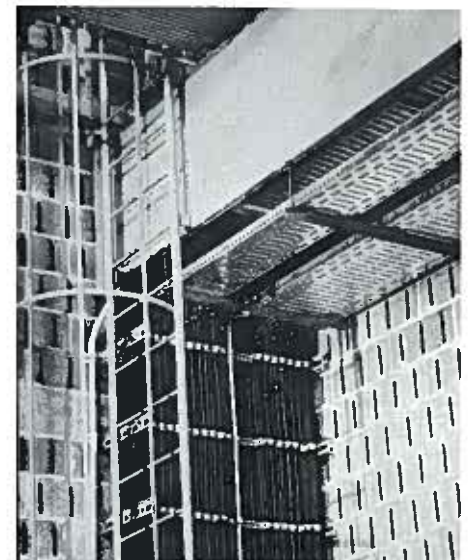
of command keys to record, edit and control the playback of cues. Consecutive cues may be linked for automatic follow-on, or chased in a continual cycle. Lights may be stopped mid-cue, returned to their last position, or stepped between any two cues in discrete intervals.

The PALS sets fitted to the Quartzcolor luminaires each comprise a rectangular section steel yoke with heat shield, housing the motor drive assemblies and processor board with drive electronics. Good protection is provided against accidental damage. Movement of pan, tilt and other functions if provided by a DC servo motor coupled to a precision reduction gearbox. The gear ratio is varied to suit different luminaires. The output shaft incorporates an adjustable clutch to protect the luminaire from damage. The absolute position of the output shaft is measured by a potentiometer. Each head contains a powerful 16-bit micro-controller which decodes its own addresses, stores cue data, and controls the motors. The potentiometers are continuously monitored and the speed is adjusted with changes in load and distance. The luminaires stop with a resolution of 1 part in 1000.

In addition to the PALS luminaires, in Studio 1 conventional Iris 4 main cyclorama lighting is provided with a quantity of Iris 2 units for the corners. For light entertainment, 60 Punchlite parcans mounted in five specially designed trusses have been supplied. The truss system is equipped with multicore cable connection to meet the requirements of fast and easy rigging and derigging. Additional luminaires of various types for portable application are provided along with two CID followspots.

The self-climbing hoists for Studio 1 are four-wire type to comply with German safety regulations and incorporate 'flip-flop' folding cable trays. A three way PALS controller is fitted to each hoist. Also incorporated within each hoist are dimmed feeds for three luminaires together with hoist power and control cabling. A separate data cable handles the PALS control signals. The German manufactured hoists are nominally of 150kg load capacity; each incorporates a 2m length of lighting barrel to which two PALS luminaires are permanently fitted. The third space on each barrel is available for an additional PALS luminaire or for special effects luminaires and may be varied according to the needs of particular productions.

While British studio practice has generally been to incorporate the motor control and contactors within the hoist, for Medienzen-



Cable trays below the gallery.

trum it was decided that these should be mounted in a separate hoist power rack installed in the dimmer room. This rack also incorporates all control printed circuit boards and relays.

The main hoist remote control position is a wall panel at studio floor level. This incorporates a mimic layout of the studio together with all controls including a keypad for hoist selection and command. Control facilities are available for group operation of hoists and for the memorisation of groups. A second control keypad is fitted to the studio mobile remote control trolley.

For scenery suspension, 24 200kg capacity point hoists are installed. These may be operated singly or in groups and are controlled from the same wall panel and studio floor keypad as the lighting hoists.

Lighting control for Studio 1 employs a 240 channel Galaxy II console with memory back-up, two playbacks, pre-set masters, programmable effects and geographical mimic. The console is installed in the studio vision control room together with the in-

tegrated PALS control and electronics. A Galaxy studio remote control unit is mounted in the mobile studio trolley. The racks for the thyristor dimmers are of Strand Lighting Germany's own manufacture and in accordance with German electrical regulations. In total 12 racks have been installed, each housing 24 5kW plug-in thyristor dimmers, 240 of which supply Studio 1 with 48 for Studio 2. The dimmers used are PIP CS closed loop square law type with filtering to full broadcast specification.

Clearly, the next development step for automated studios will be the Strand Galaxy III generation of control systems with the capability to control and memorise all PALS functions as well as dimmer selections and levels. While it is technically feasible to incorporate hoist control as well, this appears undesirable from an operational and safety point of view.

The complete studio electrical installation has been designed by Glantre Engineering in co-operation with Strand Lighting's project management and carried out by a local sub

contractor. A main studio distribution switchboard receives a 1,000 amp 220/380V TPN supply from the studio substation and feeds dimmer racks, hoist power racks and all other ancillary services for both Studio 1 and Studio 2. Power distribution incorporates multicore cables laid on cable tray in accordance with usual continental practice. Studio primary steelwork and galleries were purpose designed to accommodate the extensive network of cable tray - an example of the hidden benefits that can arise from a package contract.

Additional studio equipment supplied to Strand Lighting GmbH through Glantre Engineering includes a triple track cyclorama system with white and chromakey blue cloths, black velour drapes together with fixed and mobile retractable seating tiers providing a total of 198 audience seats.

The smaller Studio 2 has only been partially equipped at present. A 48 channel Strand M24 memory system and dimmers are installed together with complete steelwork and power wiring infrastructure. A total of 15



PIP dimmer racks.



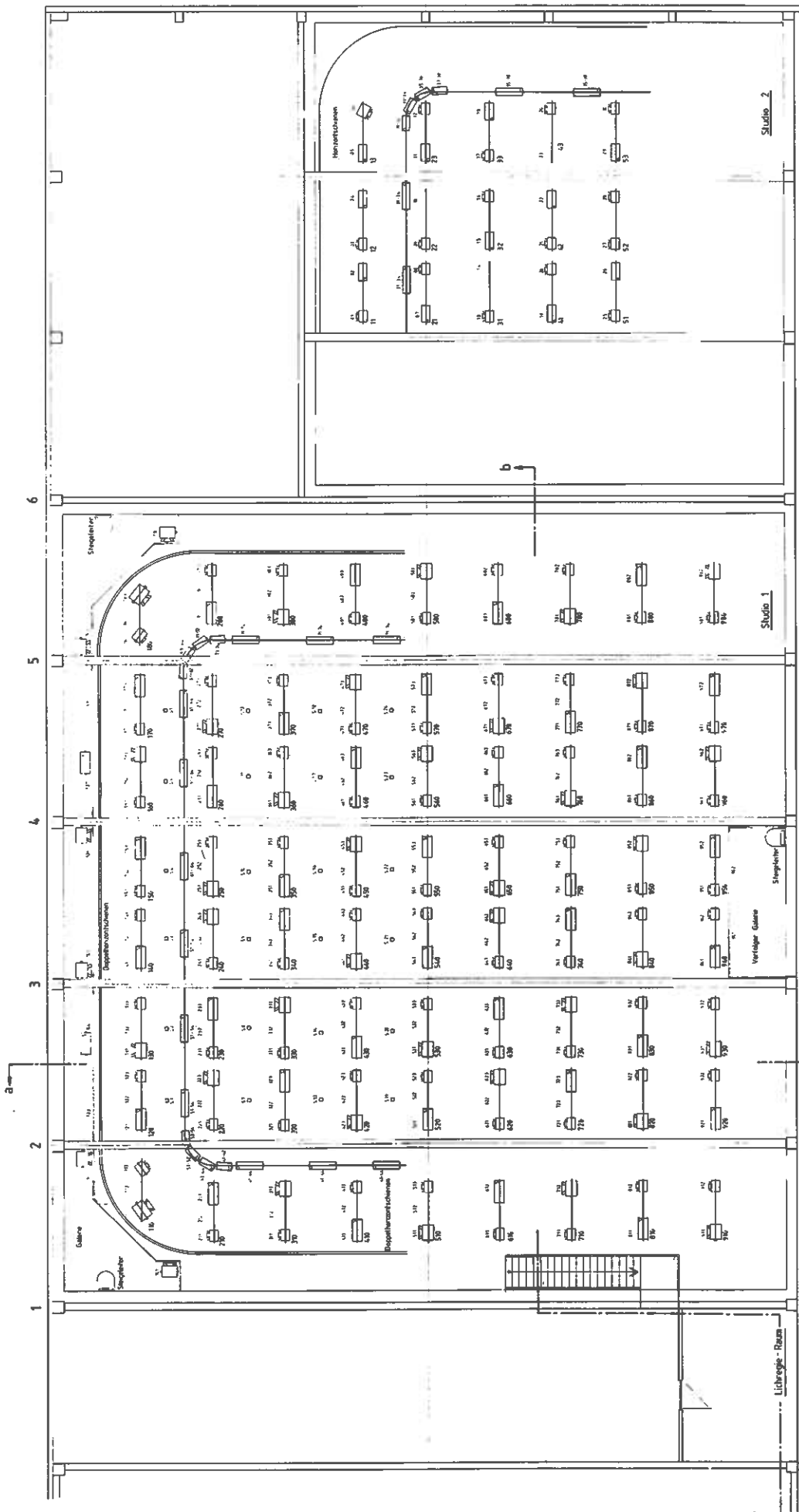
Operation of hoists and luminaires from the studio floor control.



Galaxy II lighting console with memory back-up (left) and PALS control (right).



The Galaxy studio remote control with integrated PALS control.



Symbole	Studio 1		Studio 2	
	Grundausstattung (mehrfach)	Zusatzausstattung (nicht mehrfach)	Grundausstattung (mehrfach)	Zusatzausstattung (nicht mehrfach)
36	6	6	-	-
65	4	6	17	2
36	6	7	-	-
Artemis 125 / 25kV	6	6	10	2
Artemis 2222	6	-	3	-
Im 1	12*	-	4*	-
Im 2	8*	-	4*	-
Parasol	-	12	-	-
Green 4 - 675W	-	12	-	-
Green 4 - 625W	-	6	-	-
Verträge	-	2	-	-
Decorativwvl	21	-	-	-

Recht: mehrfach

- Symbole**
- Systemreihenschleifer Pellex 50W
 - Studienscheinwerfer Color 20W
 - Nachstrahler Actium 2,5f5W
 - Nachstrahler Artemis 125 / 25kV
 - Zoom-Parföckscheinwerfer Artemis 2222
 - Hermsdorffsche Im 1
 - Hermsdorffsche Im 2
 - Beleuchtungsgerät Green 4 - 675W
 - Beleuchtungsgerät Green 4 - 625W
 - Verträge
 - Decorativwvl 15kV



Strand Lighting Germany Celebrates 20th Anniversary

Strand Lighting Germany celebrates its 20th Anniversary on May 6 this year. It was founded in 1968 as Strand Electric Hessenbruch GmbH at Giessen, and was moved to its present location in the same year. With the takeover of Strand by Rank, the company was renamed Rank Strand GmbH and more recently to Strand Lighting GmbH. The company is responsible for operations in Germany, Austria and Switzerland and has 36 employees.

Managing director since 1977 is Heinz J. Fritz, 49, who joined the operation in 1963 when it was represented by agents Diedrich Buschmann of Braunschweig. He was promoted to sales manager in 1970 before taking over as managing director.

self-climbing hoists and 30 or more PALS luminaires will be supplied at a future date.

For the main installation programme during March 1988, the site team was made up of more than 20 personnel of Strand Lighting GmbH and their specialist subcontractors including staff of both Light Works and Glan-

tre. The latter's team of four headed by their project manager Vic Dobbs, provided Strand with an important general purpose capability ranging from seating and track assembly to control terminations and overall commissioning.

This important installation in Hannover is

already generating widespread interest within the broadcasting industry, and could well be a pointer to the future for clients who wish to adopt capital intensive rather than labour intensive studio lighting installations in order to achieve significant medium and long term cost savings.

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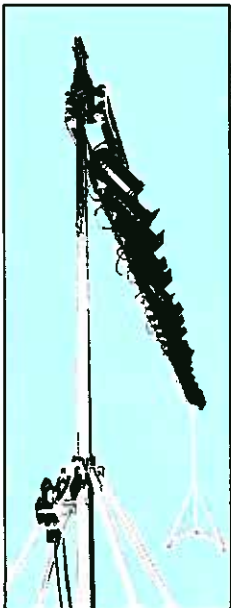
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The Hawth, Crawley: the Consultant's Story

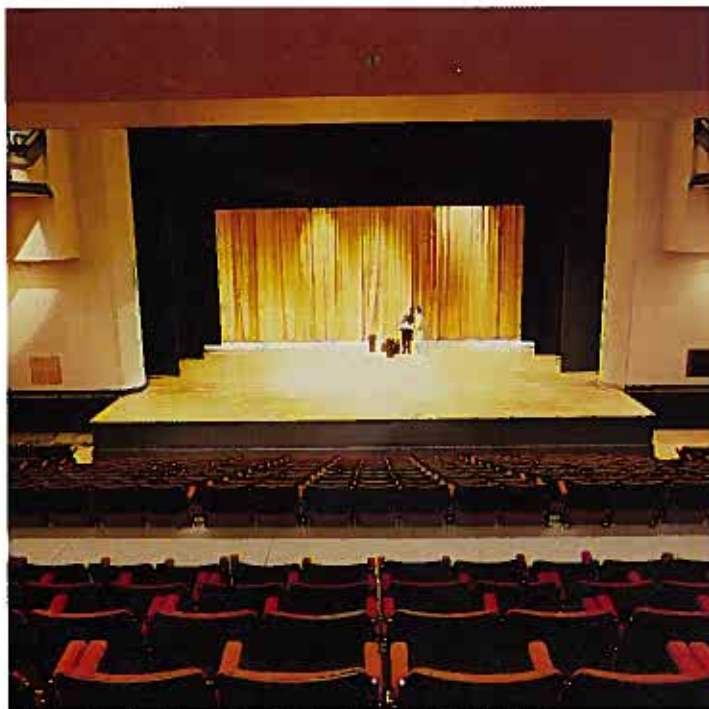
Graham Walne

Most readers of this publication are interested, by definition, in the technical. But however good or bad the equipment, it is all subject to the influence of the building, and as a lighting designer, I have often sat in the stalls and wondered about the logistics of a particular venue. When I became consultant for Crawley's new theatre, the political and economic influences that shape our theatres were brought home to me more than ever before.

Most towns contain a number of enthusiasts who campaign for the building of a

theatre, and Crawley is no exception; their Council has been debating the issue for at least 25 years. Crawley is a young town which enjoys much spin-off from nearby Gatwick Airport, but until this month its sole theatre activity relied (with some success) on the multi-purpose Leisure Centre. The experience gained there proved valuable in deciding what kind of building the town wanted. For example it was known that pure theatre required considerable subsidy and so the venue had to be flexible in order to be more economic.

Most people reading this article could probably sketch out their ideal theatre, but could they also make that theatre successfully change format, and bring it in on budget? When interest in creating their own venue built up, Crawley's own architects produced a number of building designs. Sadly none were pursued because each considerably exceeded the budget of £5 million, a figure which does not appear to have been related to what it was supposed to cover. The excesses in the architects' designs were due to the demands of the brief and not to any lack



The Hawth, Crawley - view to stage from rear of auditorium.



View from stage, with control room at rear of stalls.



Sound control, with Soundcraft 200B.



Lighting control is a 180-way Strand Gemini system.

of their skill or imagination, indeed each scheme had something to recommend it, and some were very exciting.

Despite the abandonment of each design, the Council varied neither the brief nor the budget and possibly in the belief that outside skills were needed, eventually put the scheme out to public tender on a design-and-build basis. Under this system there can be no changes to the contract design if those changes incur extra cost, and hence it is easier to adhere to a fixed price, i.e. £5 million. If changes are therefore ruled out, it is obviously vital that the contract design is correct in the first place and this in turn depends on the client issuing to the builder a careful, detailed, and above all, watertight specification.

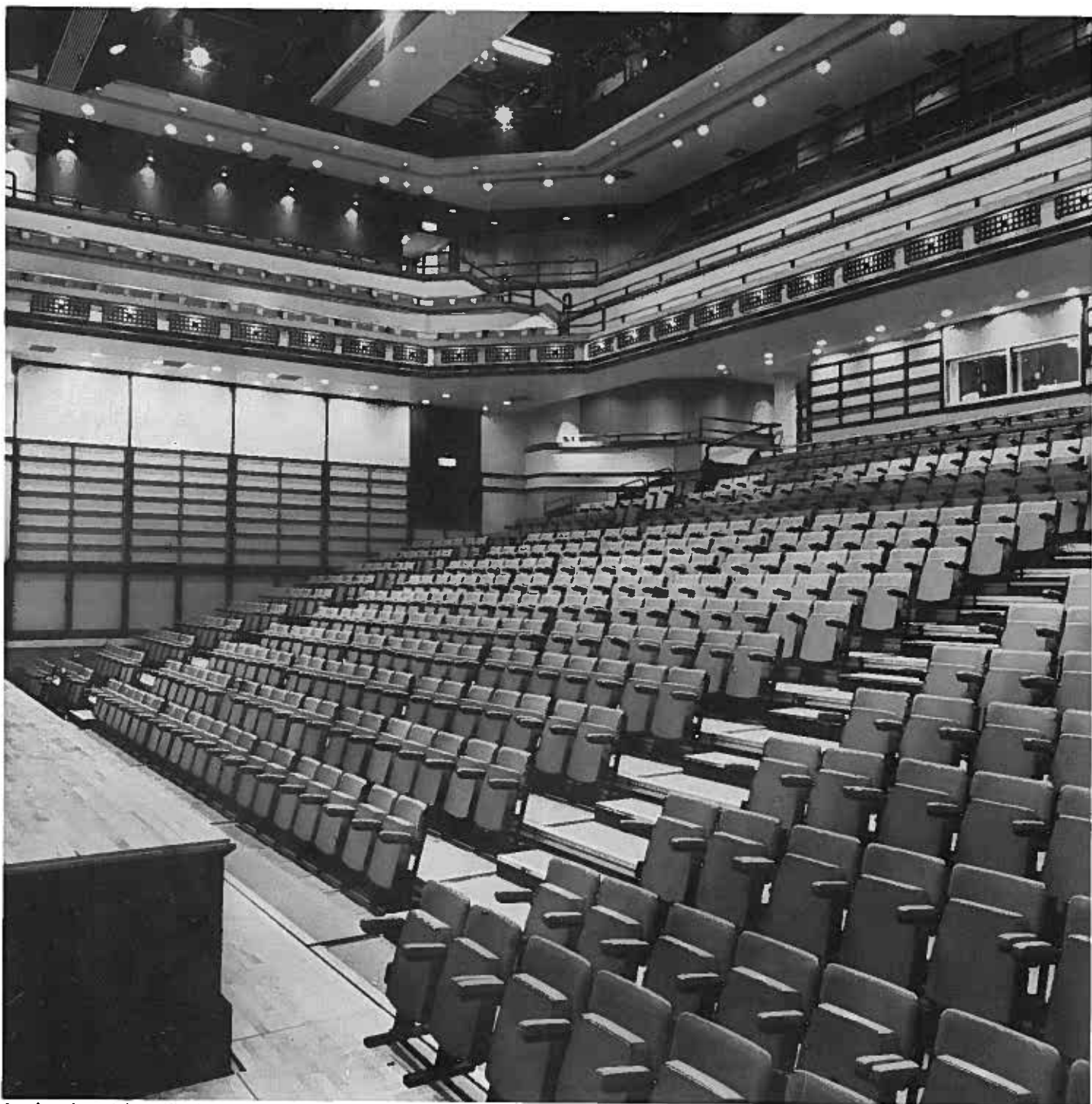
Unfortunately in Crawley's case time was against all of us for political reasons. For example, my company had to produce specifications of the acoustics, sight lines, stage house, dressing rooms, flying system, lighting, sound and stage communication systems in just ten days - and this included

the full day that the document took to print! However careful we were it was impossible in that time to detail every item, and we hoped to rely on the goodwill of the successful contractor and on the skills of our preferred suppliers to interpret our requirements sympathetically. With the benefit of hindsight, I have to say that many problems that occurred later originated out of this lack of time at the start. But if we had time problems, so did the contractors.

Of all the companies selected, Walter Llewellyn and Co (working with Norman and Dawbarn Limited as design team) were the most likely tenderers and rather than risk the very trap into which their civil counterparts had repeatedly been obliged to fall, Llewellyn shrewdly proposed a £5 million basic building and offered a large 'shopping list' of extras. The Llewellyn team created their 'extras' by first identifying lower priority functions and omitting related items which could be added later, if at all. My clients and I took the view that the 'extras' should be nothing of the sort but were high priority

items and were fundamental to the successful operation of the building. Consequently my clients proposed acceptance of the Llewellyn scheme complete with all its extras, but in doing so, they pushed the cost back above £5 million and risked losing the whole project.

To our relief the Council chose the Llewellyn design and fortunately added some items on the shopping list. The final figure voted was £6.7 million and one is bound to observe that there was possibly no need for outside contractors if the local architects had known from the start the kind of money that would eventually be voted! The Catch-22 of the extra money was that my clients and I did not know many details of what we were getting because Llewellyn hadn't worked up designs of most of the items on their shopping list. Presumably and understandably Llewellyn's reasoned that the Council had a track record of not voting more than £5 million for the project and therefore the shopping list was unlikely to be needed.



Another view of the auditorium. In this setting it seats 850.

Anxious to proceed, Llewellyns now faced a client and consultant who repeatedly turned down many design details (sometimes of the extras which were hot off the drawing board). One major item which was listed as an extra was the fly-tower, and the addition of this item was to produce much redesign work fitting the counterweights into the stage house below which originally wasn't really intended to accommodate them. Eventually the whole stage house was redesigned. Sadly, even some aspects which were clearly specified were not included by the contractors and despite extensive, and mostly good-natured, discussion, these omissions remain. Faced with a tight programme, fixed costs, and a client-consultant team who wanted constant changes, Llewellyns adopted the kind of approach a tired father makes to naughty boys who want more pocket money and to stay out later, but after all, they had been charged with the responsibility of bringing the building in on time and on budget! Norman and Dawbarn's experience in building television studios meant that they, at least, could understand what my clients and I wanted, but they too had to listen to 'father'.

The Hawth did not therefore have an easy birth, and given this history you could be forgiven for thinking that it is a disaster. Instead it is far from it. Certainly we have all learned a great deal in the process. Yes - it does have some 'sillies' and elsewhere I have recently written that while the battles a consultant wins will not be evident, those he loses will be permanently enshrined in concrete for all to see. We lost many battles because we weren't given enough time to make the brief tight enough, and where the contractor's intentions differed from ours we had no leverage. We lost many battles because we just weren't given information in time. Many items we saw on site before we saw drawings, and of course we lost many battles because we had no more money with which to solve any of the problems.

The biggest disappointments are the maple stage floor (which we were also told couldn't be stained the colour we wanted), the retractable seating, and the immovable lighting bars on stage - technical manager Chris Wilcox is going to be very busy when he

finally occupies the building. But one has to accept that Llewellyns and Norman and Dawbarn also wanted a successful building too, and that their perceptions of the building differed. Could this have been better co-ordinated in the brief? Surely subjective responses will always colour committee designs. But don't be misled. After 25 years it is there and it works.

Externally the building strikes the right note because it is not imposing and therefore frightening. This is vital in a new town where people cannot easily possess any heritage of theatre going. The Hawth is human and warm and the park that surrounds it offers many restful views to patrons from the foyer and bars. It is a very pleasant place to be. The colour scheme of variations of red, grey and deep blue is perhaps a shade light for a theatre, but it suits the building's other functions very well. Overall the interior lighting has some good ideas. Sadly, however, we have the inevitable downlighters in the auditorium, although there are lights round the fascia of the circle.

In addition to conventional proscenium theatre the main auditorium has to cater for banquets, exhibitions, films, and snooker. Where the designers and I part company is that they have biased the auditorium design more towards the non-theatre events (notably in the retractable seating and maple floor which can continue throughout the auditorium) whereas I would have preferred a bias towards the proscenium. Nevertheless the stage is a success, it is a good size and well equipped; access is good and although the dock is the minimum size specified this has been eroded by the inevitable heating and ventilation ducting.

The dressing rooms are all on stage level and are a comparative success; they are compact rather than spacious but they all have windows with views of the park, and each room has showers and toilets. Along with the adjacent wardrobe and green room this area has a good atmosphere which I think will contribute to the stay of visiting companies. Wisely, not all the services are contained in a monolithic mass: two sympathetically designed satellite buildings contain a restaurant and also a small studio theatre which can double as a rehearsal


room for the main house.

So Crawley has a venue that is bigger and better equipped than anything within reasonably travelling distance. Those of us who helped create it hopefully won't make the same mistakes again. The catch is that, given the political situation, this time the end DID justify the means.

Technical Specification

Capacity: proscenium 850, in the round 1000, studio 146
 Proscenium: 13m x 8.5m
 Wing space: 5L 4m SR 4m
 Depth: 13m
 Flying height: 17.5m, 49 single and double purchase, 3 motorised bars, wrap round cyc, 6 adjustable hoists in auditorium
 Orchestra: hydraulic lift 13m x 4m plus additional Wagner pit and band shell
 Lighting: Gemini 180 ways with all accessories, 2 x CID followspots, 8 x Iris 3, 14 x Coda, 144 other Strand luminaires
 Sound: Soundcraft 200B working to centre cluster, delay system and stereo music system; wide selection of microphones and decks; wide selection of pianos and keyboards
 Film: 35mm with Dolby, 16mm and 35mm Carousels
 Studio: flexible rostra; Action 24 desk; 32 luminaires, piano, Studiomaster desk, surround curtain track

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The Arlington Leisure Mix

**Roger St. Pierre visits Arlington Leisure's latest development:
Mr B's at Southend-on-Sea in Essex**

With more than 1,700 amusement machines in action around the country, and a £6 million turnover, Arlington Leisure is a company devoted to bringing fun and entertainment to the great British public. It is not surprising then to find them branching out into the discotheque scene.

Mr B's, recently opened on Southend's sea front, is not Arlington's first disco but it is certainly their most ambitious venture to date, representing a colossal investment of some £1.3 million.

There is a wealth of experience behind all this. Arlington itself, which runs a chain of leisure centres and amusement arcades as well as clubs, is only four years old, but is a family-rooted business whose chairman Joe Bollom is also a non-executive director of First Leisure Corporation - one of the discotheque scene's major operators - having been one of the outside brains called on by Lord Delfont when he decided to set that company up.

Joe was chairman of Ingersoll, the watch makers, before they were bought out by the

Heron Corporation, and he still runs a printing company under the Ingersoll name, as well as Kewlox and Steelchrome, a couple of furniture manufacturers. All three companies have been involved with Mr B's: "We've been able to keep a lot of things within the family's companies," said Joe's son 27-year old Michael, the man responsible for discotheque operations while fellow director John Oram looks after the amusement centre side of things. "We do our own printing and provide our own furniture!" he said.

The name Mr B's has become Arlington Leisure's corporate identity, being attached to amusement centres and clubs alike. "We spent a lot of time trying to come up with a suitable name and eventually settled on something which was short, easy to remember, and brought the family into it," explained Michael.

There are Mr B's amusement centres on the Golden Mile at Blackpool, at Weston Super Mare, Margate, Leysdown (on the Isle of Sheppey in Kent), and at Southend. "We've got a 700-seat capacity discotheque

and a 300-capacity fun-pub within the Weston Super Mare complex and it has worked very well for us - so when we decided to refurbish at Southend it was natural to include a club in our plans. The site is 16,000 square feet overall, which meant that we had the room to do something special as well as refurbishing the prize bingo, the slot-machine areas and so on.

"The ideal capacity seemed to be around the 940-mark, which makes the club big enough to be really viable yet small enough to generate a really good, friendly atmosphere. Our experience of the market showed us what the public wanted but we knew that they were not really getting it. Most clubs are far too noisy; you just can't hear yourself speak. Yet you need volume out on the dance floor to generate excitement. The solution we had devised was to go in for nine different dance floors, with directional speakers."

Arlington's impressive modern bright red and grey high-tech headquarters on a trading estate at Harrow in North London, reflects the way in which they have their finger on the pulse of modern style, and the job they've done at Mr B's in Southend confirms this opinion.

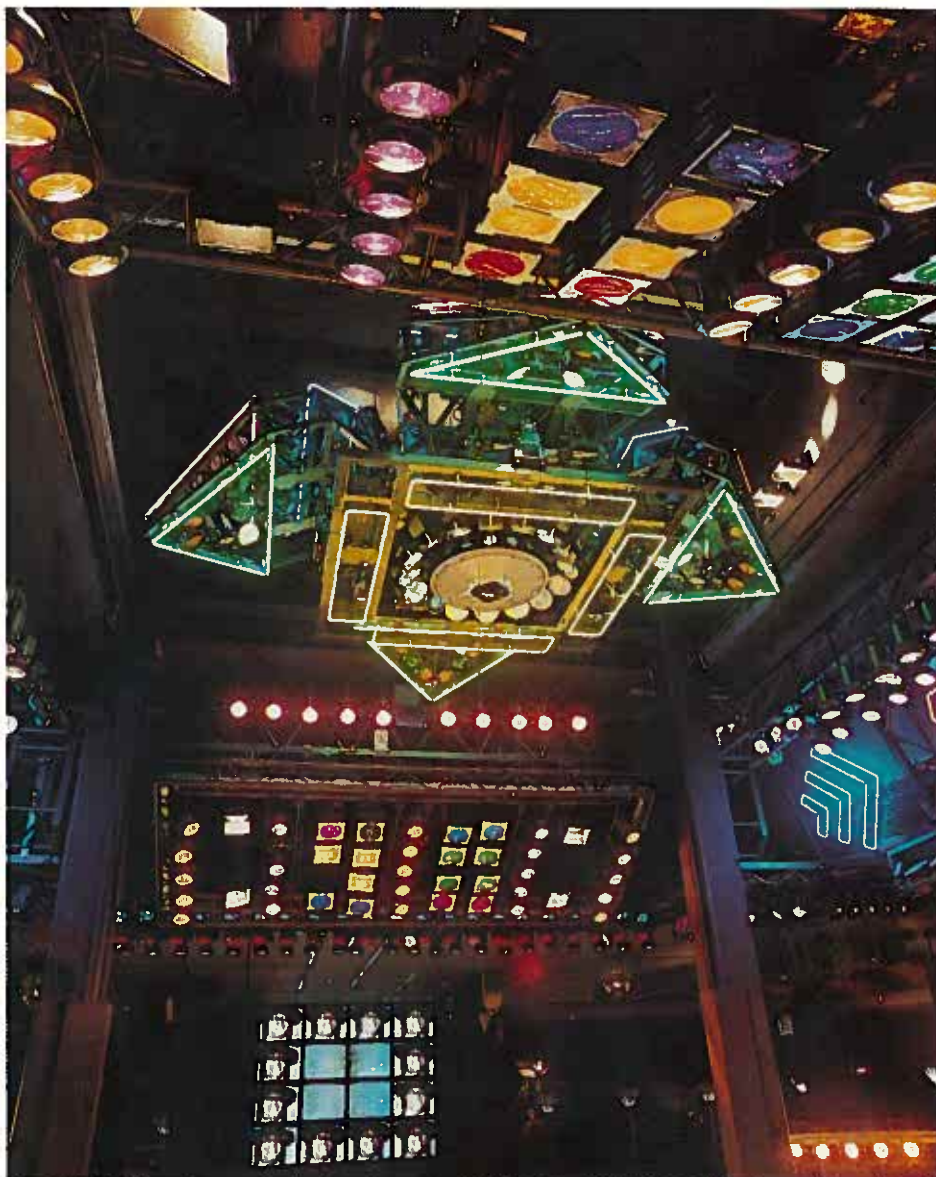
"It's all down to concerted teamwork, not just by the staff at Arlington but from the companies who were involved in the project - both manufacturers and installers. We didn't just hand over the job to outside suppliers. I was involved at every stage and built the team round me. We made lots of visits to the various manufacturers, not only here, but abroad. We made sure that we got good input from everyone involved.

"Graham Field of Bulldog Design, who did the design, Wayne Winstanley of Hi-Tec, who were responsible for the lighting, Pat Davis and Mike Boylan of Level Acoustics, who did the sound installation, and Mike Lamb of Sunmark who carried out the shop-fitting, were all heavily involved and worked closely together to produce a unified result.

"I enjoyed working with them, and now we've got a first-rate team who will know exactly what we will want whenever our next site comes up. The spend was huge, but I think the money was well spent. The lighting budget went to £320,000 with £39,000 being spent on disco sound and a further £10,500 on a stage PA, live entertainment playing an important part in our plans.

"These days you cannot run a club commercially just on the basis of one or two full-house nights at the weekend. You have to do business at a good level throughout the week and that means you have to offer variety to the public. It is no good having live music just for the sake of it, though, and the old style cabaret club is now too expensive to operate. What is needed is a careful choice of acts - we've already had a sell-out night with Bucks Fizz for example."

Like most venues, Mr B's met its share of problems. "It took two years to get the whole project off the ground. As you would expect, we met a lot of opposition, especially from rival operators in the town, but we employed the very best legal advisers - in-



The main lighting rig at Mr B's Southend-on-Sea. Also in picture is the 16-screen videowall installation.



Michael Bollom: "Our aim at Arlington Leisure is to end up with a nationwide chain of clubs, which, while having a strong corporate identity, will each have a flavour of their own."

cluding a barrister who was on £3,500 a day for his appearances at licensing hearings.

"It's been a bad thing that local councils are now more heavily involved in the granting of licenses. I'd prefer that the decisions were left to magistrates - they tend to be fairer because, unlike councillors, they don't have to worry about being re-elected."

Getting the licenses sorted out is always a fraught experience but, thanks to an open budget policy, the decor, the sound and the lighting proved a far smoother process and, as those who attended the gala opening will testify, a remarkably successful one.

Said Hi-Tec's Wayne Winstanley: "It was decided to focus attention on a really good control system so that we could get the optimum performance out of the lighting system. We've used a multi-channel desk of amazing versatility (the Zero 88 Eclipse). We've tried to get away from most of the usual sensor effects and build our own using beams of light.

"There are no helicopters in sight - we've gone for more of a stage style of lighting. Because the dance floor, through the use of hydraulics, doubles as a stage, and a lot of theatre philosophy has been used in our designs. We had to work at lighting up the artistes properly and making the impressive water-show effects come to life."

Three moving rigs, two 360-degree lasers, a glass dance floor, a 16-screen viewdwall, an 8½kW disco sound system that doubles as a live music system by the simple but innovative idea of having directional speakers which twist to face the audience, and more radio microphones - seven in all - probably more than any other club in the country, together make an impressive array of the latest in lighting and sound technology.

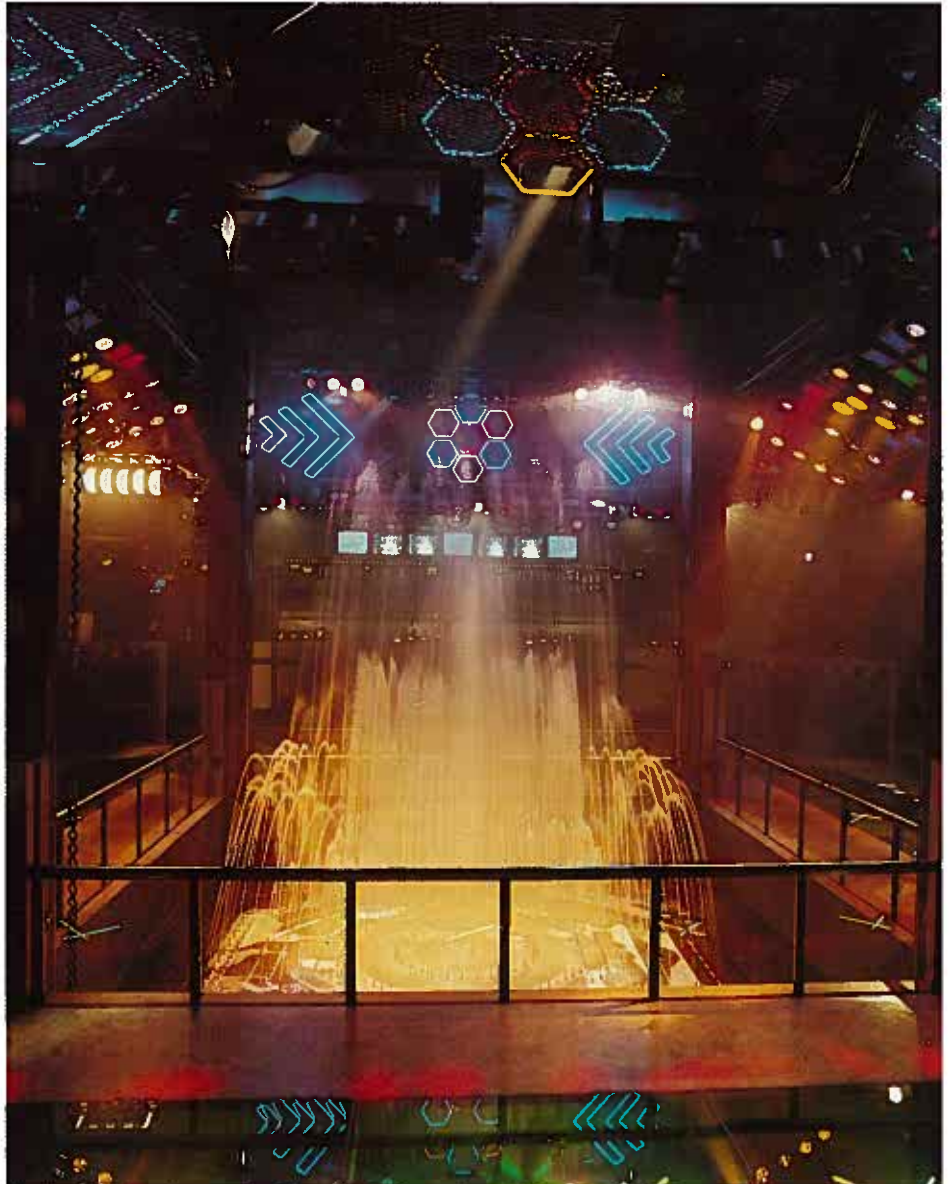
Said Level Acoustics' Mike Boylan: "In terms of sound installation, we set out to achieve high output while retaining hi-fi quality sound. We brought in a new programmable graphic equaliser, giving us improved quality and, at the same time, stopping people twiddling with the knobs and putting everything out of balance. We're not going to be attacked by the enemy, and by that I mean deejays!" he added with a smile.

"All the speakers are directionally motorised so we can send the sound wherever it is needed and we've got full mixing facilities so that no act needs to bring in its own PA set-up. The sound system has exceeded the standards which we originally set out to achieve."

Interjected Michael Bollom: "I think we've achieved a first in terms of versatility. We have a white baby-grand Yamaha piano, sup-



The main dance floor - there are nine different dance floor areas within the complex.



'Live' entertainment at Mr B's - the water show takes the stage.



Nigel Simms (left) and Richard Brimson at Mr B's controls. Lighting board is a 96-channel Zero 88 Eclipse.

plied by Cambridge Pianola, which is rigged up to the mic system and the use of Sansui radio microphones means we've eliminated trailing wires.

"I went to the USA with the light and sound boys for a couple of fact-finding missions. We went out to Florida to see how clubs operate there then later we went to New York to pick up some solid ideas, many of which have been brought into use at Mr B's. There was a rough budget but we never actually finalised the specification until the job was well underway. That factor gave us the flexibility to incorporate anything new and worthwhile which came on to the market during the two years we spent working on the place.

"The emphasis was placed on synchronised, orchestrated movement rather than putting everything on to individual switches for random usage. For example, our light jockey can pick out every red light in the place and chase it, or do the same with the blue lights, and so on.

"This kind of system does give enormous potential for a truly exciting light show but it does demand that you employ an excellent light jockey - and make him work hard. The desk allows you to do so many things. The only limit is the imagination of the operator."

Michael Bollom thinks he has found the right men in the form of Nigel Simms, who previously worked at the Empire, Leicester Square, and Peter Stringfellow's Hippodrome, and his comrade in lights, Richard Brimson, who has been brought down from the Palace in Blackpool. Deejaing is in the hands of Crazy Kevin Worth, Barry Upton, and John Saunderson.

Kevin was brought in by consultant Tony Bostock, who has been assisting in the management effort and handling promotion of the venue with his partner Gary McElligott and their After Dark PR operation. Tony and Kevin had previously worked together at Sands in Blackpool.

Kevin secured national acclaim via his competing of the International Wet T Shirt Competition and the World Dance Championships. In 1985 he won the DJ of the Year award.

Barry Upton has deejaed at such venues as Cinderella's in Dunstable, the Ham-

mersmith Palais and the Dome in Birmingham. He is also a successful record producer, having worked with the likes of Wilson Pickett and Norma Lewis and being responsible for the Miller Lite single taken from the TV commercial.

John Saunderson is well known in the business from his work with Tony Prince's Disco Mix Club and he has compered the huge Disco Mix World Deejaing Convention for the past three years, appearing with such legends as James Brown, Whitney Houston, Alexander O'Neal and Janet Jackson.

Commented Michael Bollom: "It's all well and good spending thousands on a super lighting and sound system but then you need to invest in finding the right people to make it all work properly for you.

"Too many operators simply fail to recognise just how important light and sound jocks are in making the difference between commercial success and disaster for a venue.

"Many clubs have ended up going out of business through this reason alone."

Mr B's was launched to the Southend public with an extravaganza which featured stars Peter Howitt and Eddie Kidd and model Maria Whittaker. It was a great night and I'm pleased to report that business has been holding up ever since," said Michael Bollom.

"I am sure we have got the right format for this town. Besides great sounds presented with the aid of the very latest sound and light equipment and the use of personality deejaings, we offer live entertainment and we have a super Chinese restaurant to round off a great night out.

"As with all projects, you learn things as you go along. By taking a flexible approach right from the off, we were able to accommodate most of these lessons we learned. Certainly, they will all play a part in the design of our next venue and we hope that project will soon start to take shape.

"Our aim at Arlington Leisure is to end up with a nationwide chain of clubs which, while having a strong corporate identity, will each have a flavour of their own. I'm sure it is an ambition which, with the help of the first-rate team of outside designers and suppliers we have put together, we will be able to achieve."

Equipment

Lighting:

Twin Colour Argon System and Krypton System (Laser Systems)

Equipment:

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- 48 Synchro scanners
- 36 Spinners
- 4 Wavers and Synchro
- 16 Coemar Robots
- 1 Coemar Piovra
- 20 Mini Moonbeams
- 160 LF 70's
- 8 x 20-head Harvesters
- 60 Par 56 Cans

Other equipment:

- 24 neon shapes in floor
- 20 neon pieces in static rig
- 16 neon pieces in moving rig
- 13 mirror balls
- 4 Cerebrum strobes
- JEM Series 428 computerised modular fog system
- 4 x 4 videowall
- 8 x video monitors
- 500m polycarbonate tubing and controls

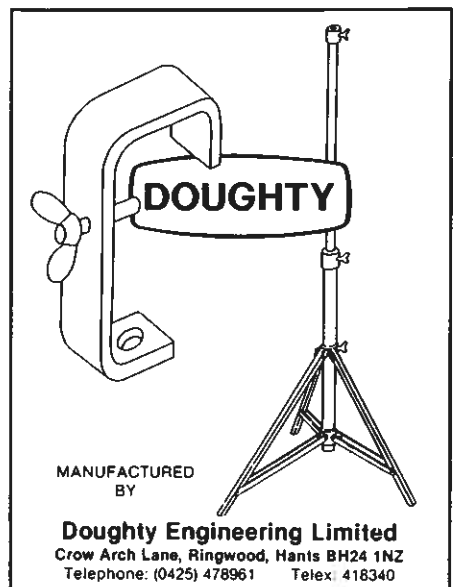
Control: Zero 88 Eclipse 96 channel with two programmable chasers, cartridge effects and switch memory.

Disco Sound

- 2 x Technics SL1210 turntables
- 2 x Stanton 680EL cartridges
- 1 x Formula Sound PM80 mixer
- 1 x Electrovoice PL95A microphone
- 1 x Technics SLP 1200K compact disc player
- 1 x Technics RSB 305 cassette machine
- 1 x Sampson RH1 radio microphone
- 1 x Rittal 40u ventilated racking system
- 1 x Greystone industries 3ch inflexor
- 2 x Symetrix 501 compressor limiter
- 2 x Micro audio 1.2 E.Q pods
- 1 x Furman TX3248 stereo crossover
- 1 x Symetrix 522 stereo compressor limiter
- 1 x Rane ME15 graphic equaliser
- 1 x A.D.D. 3 digital delay
- 6 x Amcron MT1200 amplifiers
- 1 x Rane MA6 amplifier
- 1 x EMO remote switcher
- 1 x EMO master switcher
- 1 x EMO slave switcher
- 8 x Electrovoice Motovater II speakers
- 8 x Electrovoice TL4025 bass speakers
- 12 x KEF C12 speakers
- 6 x Techpro BP111 belt pack talk back system
- 5 x Beyer DT108 headphones
- 1 x Beyer DT109 headphones
- 1 x Pioneer PDM6 compact disc player
- 1 x TOA A512E amplifier
- 8 x C10 ceiling speakers

Live Sound

- 1 x Allen & Heath 12-2 mixer
- 1 x Technics RSB 405 cassette deck
- 1 x Revox B77 reel-to-reel
- 5 x Sampson S58 SH1 radio microphones
- 1 x Sampson CLM100 GH1 radio microphones
- 1 x Amcron power base amplifier
- 2 x Electrovoice stage 200 speakers
- 3 x Dagar speaker motorisation units inc control
- 1 x Yamaha SPX90 digital delay
- 1 x Pair Beyer DT108 headphones

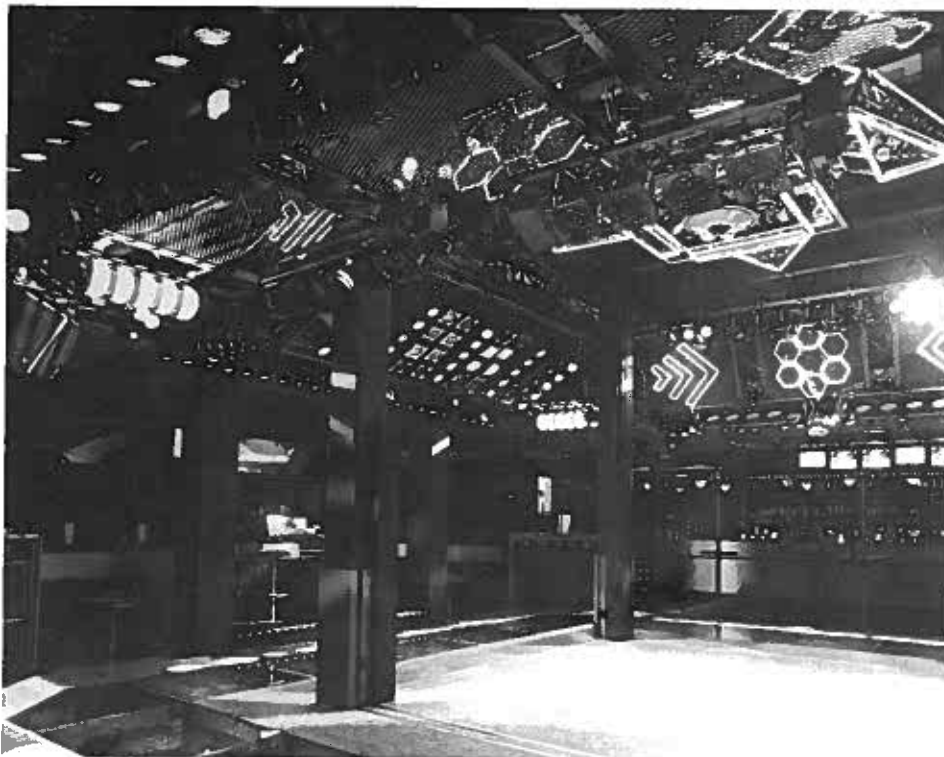


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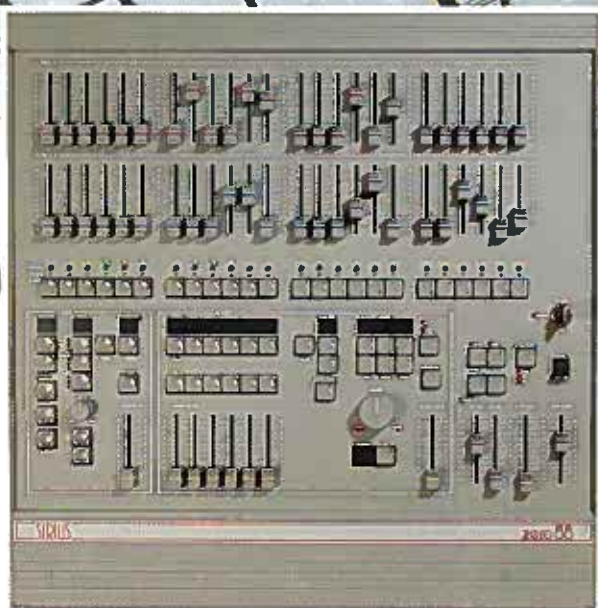
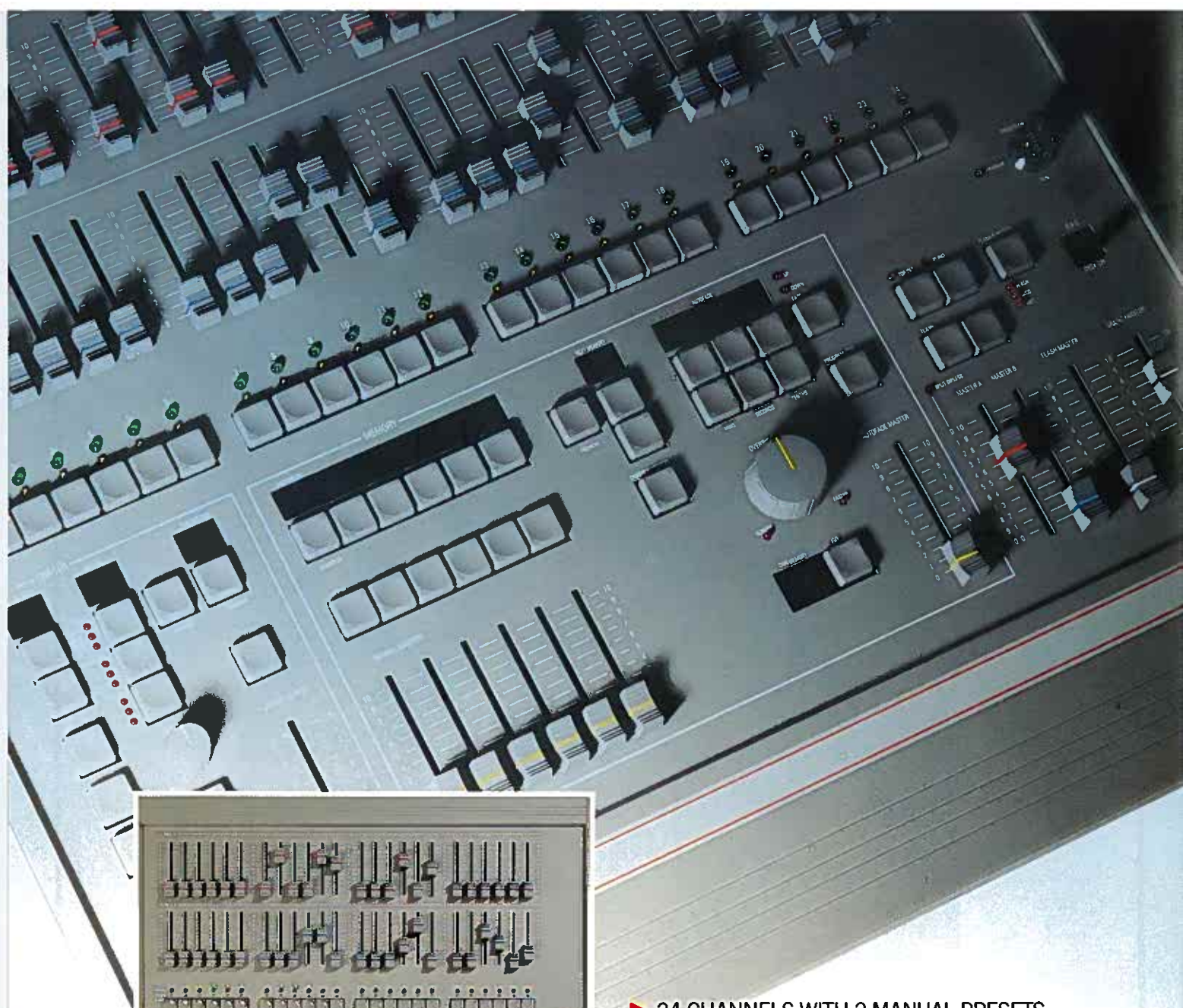


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Spring Collection: A Trip Around the Trade Shows

Francis Reid in Anaheim for USITT
Jim Laws at the ABTT Trade Show, London
Leon Alberti in Rimini for SIB/Magis
Brian Davies at the Frankfurt Music Fair

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With 890 exhibitors from 38 countries the Frankfurt Music Fair can rightly claim to be one of the most important events in the music industry calendar - and this includes the whole gamut of amplifying and reproducing equipment together with the visual side with a wide range of lighting equipment always on show.

The UK as always was well represented both on the sound as well as on the lighting side, and talking to the British contingent elicited a general euphoria for future export trade. Almost without exception came reports of increased business, with many actual orders being taken during the three opening trade days.

Surprisingly, the Saturday and Sunday public days brought with them an increased order taking - probably due to many dealers being unable to attend during the week. Attitudes towards individual members of the public varied, and I find this strange. I know that many are merely leaflet hunters, but leaflet hunters have a habit of becoming buyers in due course, and from personal experience I know that the manufacturers whose products I buy are those who have treated me well at some time in the past, having taken the trouble to explain their products and be generally helpful.

Two quite unusual designs emanate from the UK, and both are loudspeaker systems and each are applicable to both club, pub or mobile use. The first is from **Frazer Watt**. The mid-range HF cabinet is conventionally mounted on a stand, whilst the bass cabinet, which is of an irregular pentagon shape sits neatly beneath the middle of the stand thus taking up normally wasted space. It will be ideal for a function room which has many and varied uses such as conferences. To make the whole combination even more attractive, the unit has built-in power amplifiers. In all it is a very compact and neat arrangement.

The second unusual loudspeaker system, from **Leech Manufacturing**, is more suited to mobile use or in a situation where the loudspeaker is not a permanent fixture. The drive units are again divided into two units. One is floor mounted and contains the bass drivers together with a square socket on the top. This orifice accepts a square tube on the top of which sits the mid-range and HF cabinet. So far it is conventional, but here the similarity ends. The two cabinets are flight cases, one becoming the lid of the other as both units clip together, face to face, forming one compact and manageable box which being of flight case construction is also very robust and would stand

up to the rigours of the road.

For me, the two most exciting loudspeakers were very new, having been demonstrated to the press and public alike for the first time in Frankfurt. Both come from the **Wembley Loudspeaker Company**, and both are based on their new 18 inch bass driver, the B Line 300. The 2820 is a quite small horn-loaded bass only cabinet which moves a great deal of air and is sure to become a disco favourite - small enough to fly in a permanent installation and robust enough to survive mobile use. The 4428 is a full-range system and is based on a 2820 on its side plus the addition of two horns - one for mid-range and the other for HF. They are extremely potent, so much so that the manufacturer has written a note in the data sheet warning of the very high sound pressure levels which can be achieved with these two models. I can only say I wait to have a pair in for full evaluation.

Probably more suited to mobile or theatre use is a brand new and innovative telescopic stand capable of lifting at least 250kg 4.7m, either lanterns or loudspeakers. Made by **Eminence Audio** the stand weighs just about 25kg. It has three square sections with the lowest having three braced legs. The two top sections telescope simultaneously and are powered by a reversible pistol drill (not supplied with stand!) which operates a machined lead screw via a small but robust gear box. I understand that patents have been taken out on this unique unit.

There can be no more horrible experience than to set-up a sound system or in a club switch on the rig only to find that there is no sound at all or sound from only one loudspeaker stack. A quick check of power-on indicators may show that all equipment is on, suggesting that a cable or connector has failed. Which one is then the problem. Normally, out comes the continuity tester and you laboriously check each wire one by one. From **Cliff Electronics** comes the answer: the 'Wotabox'. This checks a number of items including broken or shorted wiring in audio leads, fuses of all kinds, MIDI and computer leads, and also of prime importance, it checks that mains powered equipment is connected to earth. It has other uses as it can enable microphone phase reversal as well as enabling two incompatible leads to be joined together. In my view it is a sound engineer's dream box.

The only new and exciting item of electronics

I saw on the sound front was the MkII version of **Cloud Electronics'** CV1000 Mosfet power amplifier. I have been using two of the MkI units on the road for 18 months or so and can vouch for their robustness and sound quality - so any changes had to be minor, or so I thought, as the CV1000 seemed too good to mess around with. However, Cloud have come up with a number of worthwhile changes. Some are purely mechanical in order to make the unit easier to service should this ever be necessary, and of course this also makes the unit easier to build. Gone forever is the LED VU meter, but added is the most important change - a limiter.

The limiter idea started out as being a simple device to prevent overload of the output stage and of course the loudspeaker system. It became clear during this development that matters were not so simple as it was considered necessary to ensure that the sound quality remained as high as the MkI. The end result has justified the development, as the sound is claimed to be even better than the MkI and no longer can the DJ wind up the sound to the point of overload. A very welcome innovation which I shall take great pleasure in checking out in due course.

Most manufacturers try to introduce something either new or revamped at the Frankfurt Fair and **JBL** are no exception: the G-732 is a beautifully made system. The bass driver is reflex loaded whilst also being set at the back of a horn-type flare. The upper mid range/HF horn would appear on the surface to be incorrectly mounted but close inspection of the horn throat clearly demonstrates a rectangular construction with the long side vertical which it needs to be for maximum dispersion in the horizontal plane. Pointing out this fact to one manufacturer who had mounted their horn incorrectly prompted the immediate reply that in fact they intended their entire cabinet to be used on its side!

Scott Sound Systems were much in evidence and displayed their current range of product including the pictured Gemini 5500.

Obtaining component parts of **OEM** manufacture can be frustrating for both the newcomer to the industry as well as the ardent DIY enthusiast. **Adam Hall Supplies** can satisfy both the manufacturer as well as the amateur with a wide range of fittings such as castors, feet, handles, corner braces, loudspeaker fret,



Fane: a growing voice in the pro audio industry.



Zero 88's Freddy Lloyd (right) demonstrates at the first public showing of the new Sirius lighting control, already hailed as a winner.

drivers and chassis crossover units.

In addition to their usual amplifiers, crossovers, graphics and mixers, **Harrison Information Technology** are having a great success with their range of digital amplifiers. There does appear to be some confusion as to just what part of the amplifier is digital. Some think it's the sound chain whilst others think it has something to do with the power source. I can now reveal all. The power source is a conventional linear one whilst the sound chain is the digital bit. More correctly this is a considerable advancement on Clive Sinclair's ancient class D amplifier also known as the pulse width modulation system. It makes the amplifier very much more efficient at converting the mains power into audio energy and considerably reduces the power requirements which means less mains transformer for a given output. The result is a substantial reduction in both size and weight.

As with most manufacturers **Citronic** continue to make improvements to current product lines whilst introducing new ones from time to time. For Frankfurt they introduced a brand new 15 band stereo graphic equaliser with a plus or minus 6dB range or plus or minus 12dB range

switch selectable. This is a feature I am used to on the Klark-Teknik graphic but not one I have seen before on more modestly priced equipment. Each fader is fitted with an LED in the knob so an illuminated curve will be a feature. Additionally, a high and low filter can be selected, and balanced or unbalanced inputs and outputs cater for requirements. A signal present indicator is a useful feature enabling as it does the user to determine whether or not signal has at least reached the graphic. A security cover is available giving limited access to the controls.

Also introduced by Citronic at Frankfurt were two mixers. The MPX931 being more suited to the club installation scene than the SM650 having 10 basic channels. One is pre-set to microphone only: one is pre-set to phono only. Three channels can be switched phono/line and the other five can be switched mic/line. All line and phono channels are stereo compatible, and each channel has a three band graphic equaliser together with a bypass switch. Pre-set gain and peak level indicators on all channels are another feature as is the indicator which illuminates when any fader is moved from its minimum setting. Furthermore, each channel has a remote

operate switch together with a prefade cue button and indicator. It is a very comprehensive mixer for a club situation, or for the mobile who frequently needs multi input facilities.

The SM650 is substantially different having been designed to meet the needs of the specialist DJ, such as the mixing and scratching type who needs such facilities as split cueing and the ability to use digital sampling equipment. A separate bar graph VU meter for both the output signal as well as the input signal is also featured. The mixing DJ has also been given a DJ booth output control for monitoring purposes but which reduces its level by 20dB when the mic channel is opened thus preventing local feedback. In all, both mixers represent true state of the art and I am sure they will find ready acceptance in the marketplace.

Long in the business of sound is **Carlsbro**, and this year they introduced a complete PA system for the first time. Known as the PMX series it comprises two self-powered stereo mixers - the PMX12-2 has twelve input channels and 300W per channel output. The PMX8-2 has identical channels and controls as the PMX 12-2 but with a lower amplifier rating of 150W per chan-



Light amongst the sound: Clay Paky's new 'Golden Scan' on the stand of Pulsar. (Full details in Equipment News June issue)



Paul MacCallum of Wembley Loudspeaker Company with his new 18" B Line 300 driver. Also in view is the latest Deuce loudspeaker.



Icelectrics' Rob Peck with the new DPA300 and 600 Mosfet power amps.



Glenn Scott of Scott Sound Systems with his S500 Gemini Series loudspeaker.



Multiform's Iain Price-Smith demonstrates the new Lightmix 430.



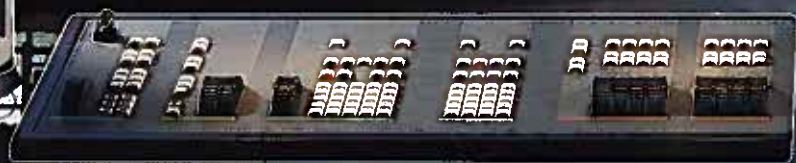
Roy Millington and Andrew Coley of Cloud Electronics with the new CV1000 Mkl Mosfet power amplifier.

Opéra Garnier Paris, La Scala de Milano,
Schauspielhaus Zürich, Saarländische Rundfunk,

City theater Göteborg and lots others have
chosen the ADB solutions and systems.



S28/II Large installations



S20 The most powerfull of the small systems



S25 Medium installations

lighting systems

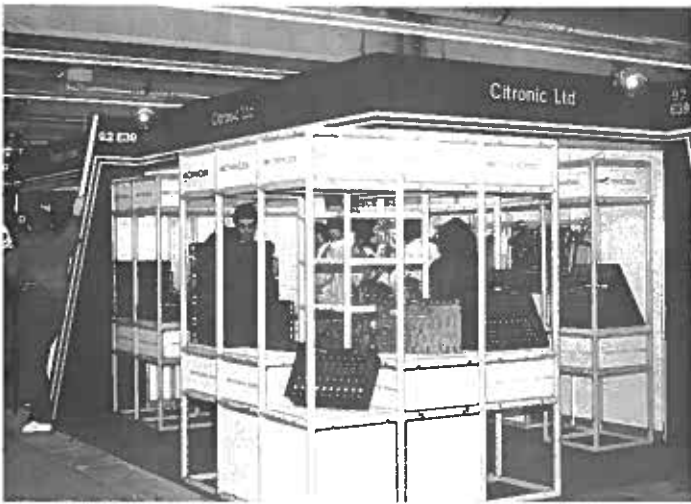
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Belgium
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tx 22134

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F-92120 Montrouge
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tx 206428

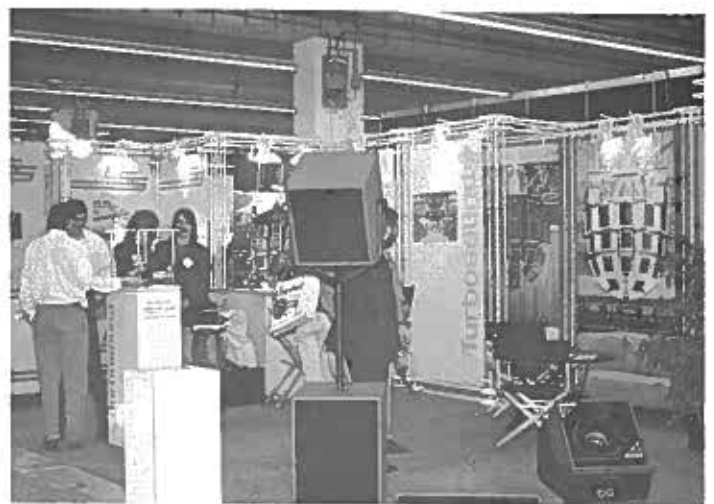
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ADB



Citronic Limited: another batch of new products for the Musik Messe.



Four new products have been added to Turbosound's range.

nel. To complement the mixers Carlsbro have also released two new loudspeaker cabinets, the PX208 and the PX115. The latter is a full range system with a 150W rating, and the former a 200W rating.

C Audio were showing their established range of amplifiers together with a disco mixer with many facilities. The DM8 has eight independent channels, four of which can be switched either line/phonon, two are mic dedicated, and the final two are for CD/line. Uniquely, the DM8 also has a 10W built-in amplifier for DJ monitoring via loudspeaker.

Of specific use in any discotheque installation for Health and Safety at Work regulations is a comprehensive compressor limiter. It is necessary to limit the total sound pressure levels in order to comply with HSE requirements for restricting levels suffered by staff it is usually necessary to fit a limiter. If this is not to create problems of poor sound, the limiter needs to be carefully designed and one which is a byword in the industry is the

Drawmer DL221. This unit has independent control of both stereo channels and independent control of limiting and compression. For the ambitious club, Drawmer also manufacture expansion systems.

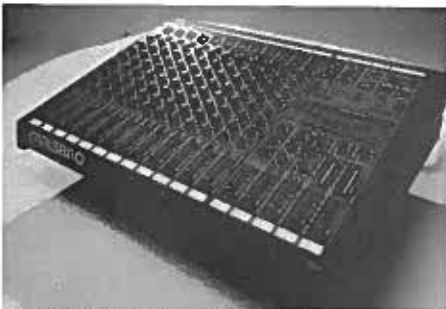
Long, long established in the field of driver manufacturer, **Fane** have been in the news over the past few months with their merging activities with McKenzie Acoustics. Now another tie-up has occurred. In conjunction with **Stephen Court Acoustics**, Fane are marketing a complete loudspeaker system which just has to be heard to be believed. Using a demonstration CD of Japanese origin they re-created the sound of a 747 jet taking off and landing - plus the noise of a thunderstorm. Not the sound usually heard in the average disco - but it did show what the new system can achieve.

Talking of **McKenzie Acoustics** they too were in evidence showing their ranges of drivers including the new 500W 15 inch bass units which I recently used in a London club installation. I can vouch for their sound quality.

HH Electronics are now as big in the industry as they ever were, and showed their well-established range of Mosfet amps and professional loudspeaker products.

In addition to their continuing range of consoles and lighting equipment **Icelectrics** have now introduced three new Mosfet power amplifiers - all work into 4 ohms and are two channel. The DPA300 gives 150W per channel, the DPA600 gives 300W per channel, and the DPA1000 500W per channel. Fans are used for cooling on the two larger units and they have a thermal detector to change the rated operating speed. At low sound levels the fans run at 30% of rated output thus keeping ambient noise levels down.

A company new to the writer, **Third Generation Audio Products** of Southend, offer a range of electronic sound equipment including mixers, amplifiers and crossovers. The mixers are more suited to the live music market but the rest of the range would be ideal in any disco situation. Quality and performance are the watch-



Carlsbro's PMX 12-2 stereo mixer.



C-Audio's professional disco mixer.



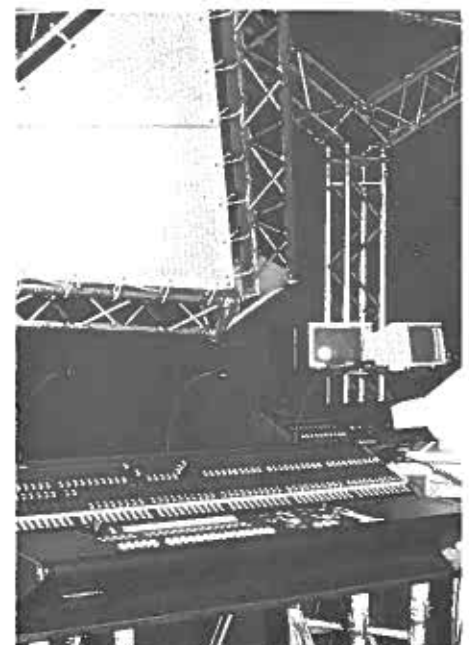
The Soundcraft 6000 Series mixing console.



Eminence's new telescopic stand



Harrison's innovative DSA digital amplifiers.



Avolites' in control of Slick Systems' moving truss.



Cabinet and flight case hardware on the Adam Hall Supplies stand.

word of these amps and crossovers, and no expense has been spared to ensure the highest standards. With powers from 100W per channel to 600W per channel there is an amp to suit any purpose.

Undoubtedly one of the most hankered after loudspeaker systems available are those made by **Tannoy**. With a reputation dating back to before the Second World War, the current crop of units are totally up to date: smart in appearance and of excellent sound quality. Probably not realised by many is that Tannoy also manufacture a high power amplifier. Brought about by their acquisition of Trensham, the SR840 will deliver 450W per channel into 4 ohms.

Four new products have been introduced by **Turbosound** and much emphasis was put on these at Frankfurt. These are the TSE260 high frequency enclosure, TSE211 mid/high enclosure and the TSE115 and TSE215 bass enclosures. Also now available is their 'off-the-shelf' certified and tested flying hardware.

Some of the transducers used by Wembley Loudspeakers emanate from a little known company outside manufacturers. Seen by me for the first time was **Volt Loudspeakers**, they produce a range of drivers from the very new 8" coaxial to established 10" and 12" mids and bass units. These units have been used by other manufacturers for some years but only recently have Volt started to offer units for general purchase.

OHM have now extended their range of loudspeaker units to take them into the 1990's. These are the BR Series comprising the BR10M monitor, BR10 mid/high unit and the BR215 bass cabinet. The BR10 units have a power handling capacity of 200W at 8 ohms while the BR215 handles 500W at the same impedance. **Soundcraft** manufacture a large range of mixing consoles, mainly suited to the theatre and recording studio, and shown at Frankfurt was one of their recently introduced 6000 series.

Celestion are very proud to have the honour of being the manufacturers of the loudspeakers



This unusual loudspeaker combination is manufactured by Leech. The two units are flight cased clipped together face-to-face.

used in the first ever known application of DAT Digital Audio Tape when the Westwood Playhouse used the SR System to perform the score of 'A Midsummer's Night Dream'. Currently, the SR System is also being used by T'Pau as part of their PA system, which was on display for the second year running at Frankfurt.



David Lyth with Volt's drivers.



An unusual loudspeaker system for club, pub or mobile from Frazer Watt.



New mixers from Citronic: the MPX 9-31 (above) and the SM650.



A feature on the Cerebrum Lighting stand (right) was Powerdrive's new Trusstower, while above, the latest Telehoist is demonstrated by director Nigel Clark.



To do justice to the ABTT Trade Show you have to start early in the day. I always like to play the game of 'who's going to win the awards' and my money would have been lost this year. My bets for product were on **Zero 88** for their Sirius lighting desk which gives 24 ways of excellent memory/manual board. It is simple to operate and to programme, can be used with sequential playback and dipless crossfade if an automatically run show is required, or will do the simple job of storing states and chases. Priced encouragingly, up to ten Sirius desks can be linked and I am certain that this controller will become a standard for the small show and venue.

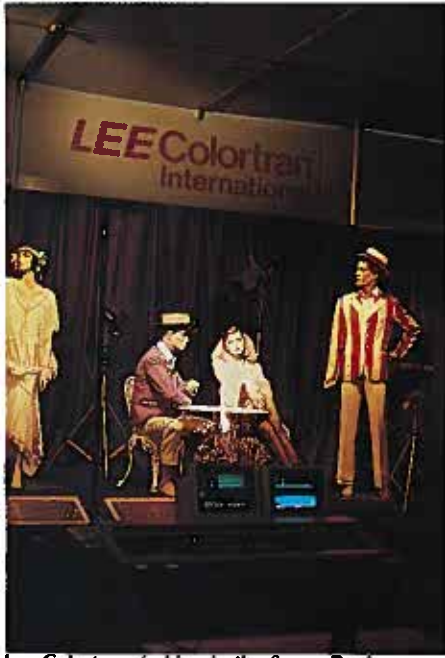
Likewise, I goofed on 'Stand of the Year'. **Rosco** was full of eastern promise with an exotic temple of their designer products lit by tastefully garish colour-scrollers. Their introduction of Jamila 'the oriental dancer' every 2 hours brought an extra touch of theatricality. She was doubtless lit in (amongst others) Hamburg Rose, 'giving a sympathetic flesh-tone with a hint of diffusion'. Cinegel updates, gobo additions and low lying fog fluid were all in evidence on the stand.

The awards ceremony was in the cinema this year: less people made it up to the top floor, but the benefits of hearing what was going on were well worth the climb. I can't say we saw much, as the lectern was slap in the middle of the darkest-of-dark spots in Riverside. However, we were at least witness to **Triple E's** triumph for their curved linear motor track. This eliminates steel winch cables and control wires, giving variable speed,

(ratio 20 to 1), and dead setting to within 5mm. The benefits for the lighting world are a massive coincidence - the PALS system of remote-control spotlight control uses the same protocol to its microprocessor, so, using the conductor rail's 40 amps it is possible to mount lights on a bar and have them track to position before focusing, all with no cables! Del Trew of **Cyberdescence** spotted this rare piece of standardisation.

The 'Stand of the Year' was **Formid System's** wooden skeleton made with their clever scenery jointing system. Amongst the runners-up, **D.H.A.** stood out for their 'intriguing' stand. Lighting accessories on display included an indexing Yo-Yo gobo which enables pre-setting to, for instance, simulate an opening doorway or a venetian blind. Impressions of clouds and waves were on display

Technician of the Year was David Ayliff whose



Lee Colortran: fashion in the Scene Dock.



Formid System's 'Stand of the Year'.



Photographer on duty: the L+SI/PLASA stand.



Colour angles - CCT Theatre Lighting Limited.



Disneyland comes to the ABTT (left to right): Mike Lowe (Teatro) with John Haupt and Reggie Jarrett of Euro Disneyland Corporation, John Lethbridge (Cerebrum Lighting), and Andy Collier (Teatro).



Rig colour - Strand Lighting's popular 'hands on' stand.



Brian Myers of Strand Lighting gets deep into a briefing.

OSKA

The most significant development in lighting control since the fader.

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D-4630 Bochum 7, West Germany.
Tel: 0234 28171 Telex 825593



Alan Cohen of A. S. Green (left) talks installation business.



DHA's unusual assembly of effects equipment.

devotion to the Stage Management Association has rightly not gone un-noticed. He completed a interestingly non-lighting and sound trio of winners.

Having emerged from the cinema I went to Studio 3, next door. The comment from A.S. Green & Co: "not many people know we're here," was in sharp contrast with Canadian Instruments and Electronics Limited, who found the show "very, very productive." Their Inkel range of mixers were particularly popular. Along the row, Playlight Hire Limited were proud of projects recently completed with their particular combination of Arri controls, in-house 5K T.V. dimmer systems, and custom-made drapes. They also had the 'first edition' of an attractive new hire and sales catalogue . . .

There were two foreign, budget luminaire ranges next to each other in the same penthouse suite. R and G Services introduced the Nova spotlight system; the one lamphouse/many lens tubes idea is similar to the French Cremer concept. Spotlight Milano were showing their Sintesi range, hoping to gain a share of the 1200 watt market to add to their educational sales. Sharing the stand, which was co-ordinated by A.C. Lighting, the Jands ESP-24 control desk from Australia offered memory/manual control which, when modification of existing states is made easier, will become a contender in this closely packed field.

Also in the attic were T.J.S. Lighting who were distributing an elegant hire catalogue, which includes conference kits and film and video lighting. Also, what's a Trelco? Apparently, a 3-way Grelco! The last stand in this varied Studio was Paul Farrah Sound with a 72 page sales list, with Metro Audio Communications and Nexo speakers being items on display.

From the height, to the depths of the gallery. As a thespian, I'm used to my galleries being high and distant; this was nearer the pit in theatre terms. In the case of the **Turbosound** stand, the bunker might be a better term, 'once heard, never forgotten' is the very true motto - at 130dB inside and 90dB outside their pod, the crispness of their loudspeakers was never in doubt. It is an interesting concept to space mid-range to the fundamental compass of the human voice and they achieve their performance 'without the aid of active compensating electronics'. **BSS Audio Systems** shared this stand.

Apex Modelling had the bad luck to be trying to talk 3-D design near the speaker systems just mentioned. The promise, as yet unfulfilled, is that in common with other systems, the co-ordinates of theatres (starting with the Cottesloe) can be used to give a view, from any direction, of the stage and its scenery. Moreover, the rig can be theoretically angled on the screen and the effect, in colour, shown. J.G. Hood claimed that the architectural lighting side of the business had already started to use this facility; I just wish that a full program had been available to study.

From technics to basics; **Ark Light**, winner of my 'Christmas Card of the Year' award, said that if one per cent of the enquiries came to something, the demand for their lantern restoration service would be overwhelming. **Astralloy International Limited**, makers of Astralite, Strucalite, and Minilite, echoed Joanne Taylor's enthusiasm: "This is the best value for money show we've attended," said Mark Reed. "The food's nice as well." On Mark's recommendation I made a note to fortify myself with Bangers and Mash before attempting Studios 1 and 2. He was right!

Meantime, still in the Gallery, **Eurolight Limited** had gone open-plan with **Green Ginger**

(Lytemode) Limited. Nick Mobsby showed me the Microlite 3 which has dimmer and fade profiling, text information, and automatic assignment to time sequences within cues. An incredibly compact patching system caught my eye and a neat 12-way inverter board. On the other side of the stand, Lytemode was explained as the new owner of Concord Controls and hence of Green Ginger. Again their catalogue showed knowledge of the requirement of architectural lighting and Lytemode controllers are geared towards that market.

The last stand in the Gallery was **Furse Theatre Products**. ADB equipment and several other makes were apparent on a very friendly stand eager to demonstrate a comprehensive service.

Now to the Bangers as mentioned before, washed down with London Pride and a chat to my colleagues of the Association of Lighting Designers. Recruitment was running well on the smallest stand of all - two notice boards lit by a single legendary blue silhouette.

Hence to Studio 2, firstly to **Entec Audio Sales**, now also into manufacture but showing the Yamaha Digital Multi-Effect Processor which has to be heard to be believed. Across from them, **Ancient Lights Limited** were proudly showing their new logo, new hire lists, their range of lantern conversion kits and, most important, themselves. The present association with **Stage Electrics** was apparent in their new house style and Peter Nesbitt's message to the show was: "We offer the same services as before and we're expanding our lighting stocks all the time."

The remainder of this row was dominated by lamps - Don Campbell of **D.C. Lighting** noted interest in the Thorn 2D coloured lamps whilst **Philips Lighting** was keen to show their second generation T19 with more robust filament.



Spotlight of Milan on the AC Lighting stand.



John Parkinson (left) shows HTV's Pat Wilson sound equipment on the Playlight stand.



Specialist Lamps' round-the-show delivery service.

The first 2500W Zoom
Profile and 250mm lensed
Fresnel Spotlights designed
for the Lighting Professional

A Stage
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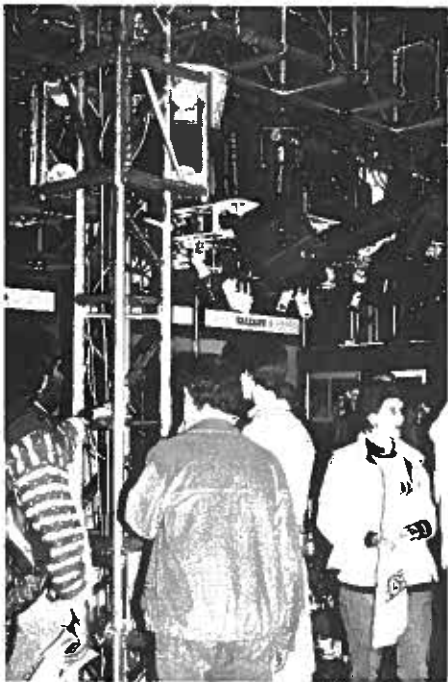
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Lighting Technology: a maze of equipment.



Shuttlesound: out in the Marquee.



AVAB demos on the CCT stand.



Donmar: for your new Reference Manual.



Favourite faces: Allen & Heath's John Ball with Mike Hall of Rosco.



ADB's Bob Rutten with Wolfgang Bergfeld of Siemens on the Furse stand.



Jack Schmidt of Strong (USA) with Fons De Vreede and Gerard Jongerius of Flashlight (Holland).



Not powered up, but impressive - the Teatro range.



Open plan info: part of the Eurolight/Green Ginger display and demo area.



Derrick Saunders explains OSKA on the Cerebrum stand.



Northern Light's Mike Smyth with the System 2000 working light control.



White Light: people rather than products.



Arri's Tim Burnham - one show-long explanation performance.



Lee Colortran's Bob Massey describes the new Powermaster.



Jimmy Green of Granada TV (left) takes a look at Playlight's new TV dimmers in the company of Barry Hampson.



MAC Sound Hire: a representative range of equipment.



Lucky to get a look: humans crowd in to see Zero 88's new Sirius.

However, towering above the rest were the twin Francis Searchlights of **Lighting Technology**, another contender for Stand of the Year. Beneath, familiar faces from Action Lighting were showing the M16 Batten - the Thomas version has recently replaced the vintage footlights at the Theatre Royal, Windsor. A living images model of Sir Christopher Wren completed a lively stand.

It was nice to see first-time **Phosphene**, in the shape of Cliff Dix, offering a comprehensive local service based in Stowmarket, Suffolk. He lists lights, sound, scenery, and graphic design as amongst his capabilities. He was next to **Le Mark Self Adhesives Limited**, whose cable-labelling tape is proving very useful for people who hire out cables. It is easy to use and very distinctive.

Elliott Bros (Audio Systems) Limited, were the first of two stands to be tackling the playing of compact discs for spot effects. The approaches were very different. Bruce Elliott showed me a modified Technics C.D. player with rapid indexing via key pad. This was top loading as opposed to the Denon DN 950F shown by **Sennheiser** which is 'the world's first C.D. cartridge player'. Feeding and accessing time is about six seconds. Two machines can fire off each other for continual background music. The other sound stand in Studio 2 was **MAC Sound Hire**, with their new hire list and samples from their extensive mixer stock.

Specialist Lamp Distributors sported a delivery bike, strictly pedal power, on their stand. Opposite them were **White Light Electrics Limited**. The ABTT Trade Show is a chance to meet people, so technology was not heavily to the fore. However I was interested to see White Light's list of spare parts, a discreet selection of which was hanging on display.

Next door, **W.B. Lighting Limited** was fronting for Coemar and De Sisti. Roman Walanta was able to show me the Dedo Light, a very compact mains/transformed light kit for news gathering/location. A range from 40° to 3.4° in a single head is amazing. The transformer gives a choice of three colour temperatures on the 100 watt, 12 volt lamp.

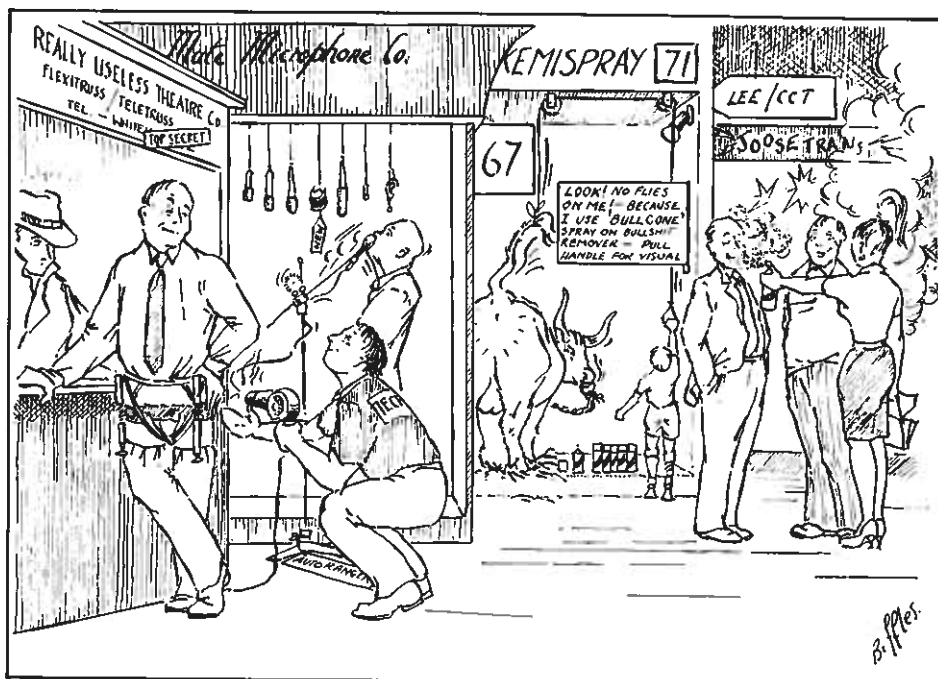
The last stand in this packed Studio was also the largest - **CCT Theatre Lighting Limited**, showing their 'Update 88' - T29 1200 watt adaptor kits for all recent (Mk2) Silhouettes and Starlettes. There is now also a fast-fit lens tube assembly for the Silhouette range and the new 2500W Starlette fresnel with variable-eased barndoors. The most surprising thing was the new-look 15°-30° zoom lens - the shape of things to come!

Just time for tea and cake (thanks for the tip Ethel) after visiting the ABTT stand with its smart sweatshirts, and then into numero uno - Studio 1. First to share my cake crumbs were two old friends, **Trafalgar Lighting**, where Alan Paulus showed his Pancan lighthouse, and **Lancelyn Lighting**, with their wired bar box. This is capable of taking all manner of outlets, regulations permitting. Both these outfits had hire and sales lists, in Trafalgar's case, second hand.

En route for the fabled Marquee, I encountered **Canford Audio plc**, whose stock of accessories gets larger every year and now includes the Technical Projects' range of communications. Once in the canvas annexe I found three important stands. Firstly **Avolites**, who now have the QT500 - 'a Theatre-Board with extended editing and split crossfade'. Building on the familiar QM range it comes complete with 10-way matrix back up.

Shuttlesound were next door to show Electro-Voice speakers and microphones and their company profile (reprinted from L+S) shows their success with this range. However they were also showing the M.S. Auditor mixer from Helsinki, last seen at the ABTT two years ago. The final stand before the river took over belonged to **Dynamic Technology**, who recently installed their Multiset into Perth Repertory Theatre (120-ways) and the Fairfield Halls (72-ways). Their range of dimmers is available with or without casing and 5kW modules are the same price as 2.5kW.

Back into the hurly-burly, the next call was **Celco**. Keith Dale told me that their Celco 'Baby' had received 150 orders since its Frankfurt launch four weeks before. Besides introducing the Celco Plus and Major, the T.V. 50 dimmers are now available to give 12kW per channel at 240 volts. Interestingly, Celco are using digital storage via a



Q card.

Cerebrum were hosting Pulsar, whose Derrick Saunders was celebrating the sale of an Oska control desk to High End Systems Inc., of Austin, Texas. At the other end of the scale there will shortly be a 3 x 5 amp Mini pack to run from a 13 amp socket and clamp on a stand. **Powerdrive** also had two new hoists. Telehoist '0'-15' in 30 seconds' and the truss tower to span 30 feet at a height of 5.5 metres, holding 30 Par cans.

This year the Scene Dock was in use and I liked **Lee Colortran Limited's** Edwardian fashion display - again a contender for an award. Their Power Master dimmers are available as portable or rack mounted and Lee have standardisation on Q.M. 12-way connectors for their control cables. The controllers have split-time crossfade. There will be a new range of 25 polycarbonate filters launched at Photokina in October.

Most Spacious Stand of the Year must have belonged to **Arri (GB) Limited** where Tim Burnham proudly showed me the new portable Arri dimmers. In 30kW blocks, they can be 12 x 2.5kW, 6 x 5kW, or 3 x 10kW with full T.V. specification of diagnostics. For use in the film world, the dimmers use thyristor and circuit breakers and are very quiet mechanically and electrically. He then explained the Dual Redundant Tracking on the Imagine 250 control system. This is one of the reliability features of the Siemens Covent Garden Desk, now available at a small fraction of the cost.

Sharing the island site with Arri, **Strand Lighting** were showing a prototype 1000 watt, 24 volt Beamlight - Ivan Myles hoped it might even be called the Pageant! Other news was that the Leko range is now fully modified for European standards and there are scrollers for Cantata and Cadenza. Also on stand was the new 'Impact' control system from Strand North America. Over 300 of the new Action Desks have been ordered since their launch last year, I was told.

Two ex-Strand men, Mike Lowe, and Andy Collier, are the driving force behind **Teatro**, a theatrical range of lanterns and a 3-pre-set control system, 'Alfa'. Linked with Coemar, this company was at the show to establish a network of dealers. It was tantalising in the extreme to see those magnificent die-castings and not to be able to light them up! Why lug all that lot from Italy and then not use them? The clip-together Diluvio floods looked particularly good; a 4-way section with a variety of 500 watt and 1kW modules is possible.

Next door, **Northern Light** were in a nicely painted 'back-stage' set which showed off their System 2000 working light control. This has conventional relays but the logic is by Mitsubishi programmer. The system is thus easy to reprofile and local access to individual workers is possible, allied to override control. It is handy to have a price list for Prompt desks and of course I felt at home with the Pageant Lantern. I haven't seen a cut away Pattern 23 since Strand was at King

Street. Altogether, Northern Light showed neat technology in a pleasantly theatrical way.

In between Northern Light and Teatro, **Zero 88** had a solid wall of bodies taking a deep and interested look at their new Sirius board, first shown to the world at the Frankfurt Music Fair, and featured elsewhere in this issue.

Just time to visit **L+SIPLASA's** stand where John Offord carried back numbers of this magazine before visiting **Donmar**, for the last word from John Foley: "Manufacturers are taking it all more seriously. The overall look of stands and therefore the Show as a whole is a lot neater and more professional. The visitors are much more interested and objective." Along with all that, the ABTT contrives to keep the fun and the meeting with friends. Long may the delicate mix continue!

P.S.: On returning to the bar for Walnut Flambé and a half of Knee-Cracker, I was passing through the now-deserted Studio 2 when, from behind Stand 44, I could hear a faint, muffled yet insistent, querulous yet demanding, cacophony. Re-reading my programme I discovered Studio 4. Obeying instructions to the letter I grew ever nearer to this sad outburst, behind a door which I cautiously unbarred. The relief on those wretches faces was pitious to behold. "A visitor!" they cried, "The first in two days!" When I casually dropped the hint that I was the L+SI correspondent their generosity knew no bounds. By the aid of a single rundown Joosetrans earthlink F.M. transmitter, now running off Phantom voltage from the beer chillers 150 yards distant, I made my rounds. Electricity as we know it had been cut off sometime on Wednesday night, to make ice cubes for Rosco's belly-dancer, so things were pretty rough. However, The Really Useless Company made me feel like Royalty, handed me a broom to stir the cold tea and generally urn my keep. They had all been sleeping on Comacase Limited's flight cased bunk beds, but the coffee from the percolator had corroded the aluminium structure, so it was Novotel or bust tonight. The Mute Microphone Company representative was so confident of his product that he had gone to the Pub, so, with lack of electricity for Scrimps Inc., pride of Studio 4 had to be Kemispray. When I promised to faithfully report the plight of Studio 4 to the outside world he gave me a 5-second blast of Bullgone and murmured "you were saying?"

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The major American technical equipment exhibition for the more traditional forms of live theatre is that organised by the United States Institute for Theatre Technology (USITT) as part of their annual conference. This conference takes place in a different location each year, and so most of the

delegates travel considerable distances to attend. The event takes place in convention hotels with enough beds to accommodate hundreds of delegates plus appropriate spaces for the conference and its exhibition. With both the suppliers and their potential clients in residence on the same site for three or four days, there is an opportunity for a detailed dialogue between maker and user. And with the equipment exhibition hall adjacent to the conference rooms, it is easy to make a series of short visits to the stands and so avoid the mental indigestion that can often occur when one has to take in a large exhibition on a single visit.

This set-up also allows the exhibitors to man their stands for daily hours which tend to be rather more humane than is normal on the expo circuit. That is, noon to 5.00 p.m. on opening day and 9.00 a.m. to 2.00 p.m. on the final day, with two days of 9.00 a.m. to 5.00 p.m. in between.

Over 4000 visitors went through the exhibition which had 115 stands including about 80 concerned with lighting and/or sound.

The USITT currently has over 3000 members, a high proportion of them involved in the university theatre departments which form a major feature of the American theatre scene. Sheer size, as well as the nature of their teaching and research functions, makes the universities the major national influence on theatre technology. Broadway may be loud and glamorous - but it is a relatively small market. Many of the people involved in the manufacture and distribution of technical hardware are themselves products of university theatre departments and they play a prominent part in the running of the Institute. It is the universities and the suppliers who make the long-distance running in USITT and attend its annual conferences with most of the regional and com-



Keith Dale (right) launches Celco's new 'Baby' in the United States.



John Walters of James Thomas Engineering with their new patented compatible connector for the GE and Thorn range of Par 64 lamps.



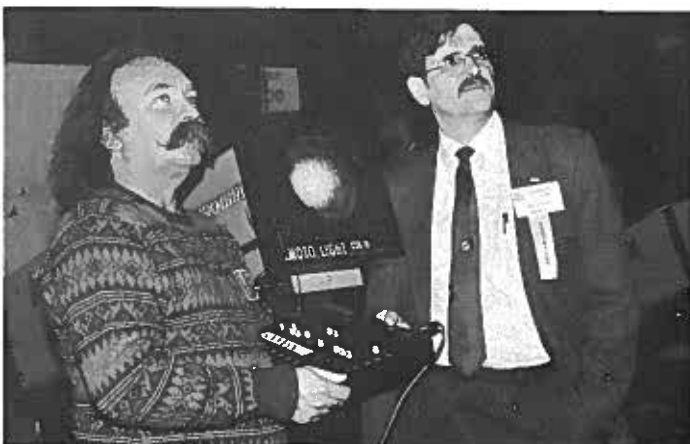
Gert Raffelsberger of Ludwig Pani with Anne Veenstra of Production Arts, New York, and the new BP6 Gold.



John Tedesco (right), president of Phoebus, shows the new remote system for the Mighty Arc.



Joe Tawil with Great American Market's new RDS 2.5kW HMI scenic projector, with complete remote and focus.



Jack Schmidt of Strong (right) launched a new motorised unit for the Super Trouper. Bill Kosmar of Dyna-Might controls the demo.



John West of West Star Corporation with the new Techstar memory lighting control system.

munity people in attendance relatively local to each annual venue. A strong international presence is, however, ensured both by the Institute's policy of inviting guests from the OISATT and by the need that many, like myself, feel to go every few years just to find out what is happening.

USITT conferences are usually held in places with a lively entertainment scene, and this year's choice of the Disneyland Hotel at Anaheim was especially strong in opportunities to see staging technology in action. Apart from a monorail connection from the hotel to Disneyland itself, there were coach excursions laid on to Orange County Performing Arts Centre, ABC Television Studios, Universal Film Studios, Los Angeles County Museum and Otis Parsons School of Design. Add to this a formal opening lunch and a closing Awards Banquet plus nearly a hundred conference sessions running in parallel sets of rooms (not counting some fifty sessions devoted to housekeeping by the Institute's special interest section committees) and a dozen meetings for travellers from USITT's regional sections.

Over two dozen of the main conference sessions were concerned with light and sound subjects. Lighting topics included 'Storyboards as a Lighting Designers Communication Tool', 'Shopping for Lighting Equipment (How to choose a distributor, pick the equipment and ask the right questions)', 'Dimmer Performance Criteria' and 'Patents in Automated Lighting'. While the sound buffs focused their ears on subjects from 'Sound Design at the Royal Shakespeare Company' through 'Compact Discs (Application in Live Theatre)' to 'The Binaural Head (New Ears for the Soundman)'.

USITT offer a unique preview system whereby at a session on the eve of the opening of the show each exhibitor is offered two minutes (strictly monitored by stopwatch) to take the stage and promote new product. This is an idea that might well be copied and expanded elsewhere. How about PLASA offering a platform where each exhibitor has an option of appearing for two minutes in a show mounted, say, three times a day?

Computersation of conference registration also

allowed USITT to offer their exhibitors and visitors a fast and simple method for recording enquiries and requests for further information by running the bar code on the name tags through a reader. The proof of system effectiveness was showing in my mail bag within days of my return. The name tags, incidentally printed names large enough to be read casually by the oldest and tiredest of eyes: enabling salesmen to address me personally, and allowing me to meet old friends without embarrassment!

Did I detect any trends? Well, there did seem to be rather less frenetic activity in the control system market. Consolidation seemed to be the keynote with Strand's acquisition of Electro-controls giving them unquestionable leadership in product range and volume for traditionally plotted shows. Whether they will now opt for a late entry into the world of instantly playable desks is bound to be of some concern to the smaller specialists like Avolites, Celco and Zero 88. However both they and Strand may well feel, with considerable justification, that this area is one where small really is beautiful because of the need for the kind of fast-acting personal relationship between maker and user which is bound to elude an international colossus.

The universally agreed trend of the moment is, of course, remotely moving lights. This is the bandwagon which has acquired much of the development frenzy that was so recently reserved for control systems. There certainly is a trend to make and market these lights. What is less certain is evidence of a trend to buy and use them. Such lights are well established in shows where the dynamics of movement are part of the lighting design. But for the market to take off there will need to be an almost explosive growth in their use as a lighting management tool for re-focusing while dark between cues. A lot of lip service is paid to the inevitability of this because of potential cost savings. But there is, as yet, very little hard supportive evidence derived either from experience or from authoritative financial projections on paper.

As usual, Vari-Lite did not exhibit. Presumably



Tomcat Engineering, based in Worcester, now have a US operation at Midland, Texas.

because they do not need to. Well, not now. But this does seem to be a little short-sighted if they want to be involved when the market expands downwards into volume sales. Perhaps they should remember that in any exhibition, and especially in one associated with education and so visited by people who do not control spending now but will do so eventually, exhibitor's stands have a strong educational function.

It was particularly frustrating that a scheduled conference session on moving lights was cancelled five minutes after it was due to start. It had been announced for the stage in the exhibit hall and was to include a demonstration of various



CCT Theatre Lighting's managing director Don Hindle (centre) with Thomas Gulinazzo (left) and Ira Minkoff of Kliegl Bros.



Competition winner: Martin Palmer of Edinburgh (right) won the free trip to USITT and gets congratulations from Rosco's Stan Miller.



Jody Good, Strand Lighting's director for research and development in North America, pictured with the Premiere system which incorporates an angled screen so that board operators can watch the stage and their monitors at the same time (a variation on the technique that enables politicians to eyeball their audience while reading from a script).



Light and Sound Design: established in the UK in 1977 and in the US in 1981, this was the company's first-ever exhibition showing.



Steve Warren (right) of Avolites explains the new Precept board from LSC Electronics Pty of Melbourne, Australia.



One of the most impressive displays at USITT - the stand of James Thomas Engineering.

systems with the lights mounted 'side by side on a pipe for a hands on comparison'. The official apology, based on pressures of demonstration on the stands, was received with scepticism and there was much muttering in the ranks alleging that manufacturers were chickening out.

The overall trend is certainly that if it lights, it can be remoted. Totally flexible integral colour change, however, remains uniquely with Vari-Lite. For everyone else, scrollers are standard.

Remote movement of parcans, fresnels and profiles is now a possibility that we take for granted (after all, Ludwig Pani in Austria was pre-setting pan, tilt and focus through polarised relays in the early sixties and had it on memory by the early seventies), so what we punters tend to look for is increased reliability and precision, coupled to lower price. Remote operation of **followspots** has not been so common.

At USITT 88, however, everybody was doing it. Not so much producing new equipment as sticking motors on to their existing lights. An example (and the one that personally excited me most was a new remote version of the Strong 'Super Trouper' HMI followspot. This has a 10-colour scroll and, in addition to the normal remoting of pan, tilt, iris and dowsler, has liquid crystal diffusion and a variable speed pulse unit for strobing. Everything works at the speed with which a 0-10 volt control line is varied and so the system (which can be retro-fitted to existing spots) is easily interfaced to any dimmer.

But for me, the real excitement of the show was something much simpler. A new product that immediately raises the question **why have we waited so long?** Perhaps when we try to use it we



The new 'Light Lifter' from Hoffend and Sons.

will find the snag. But meanwhile a standing ovation for **Soft-17** whose **Slide-Pak** turns any instrument, even a fresnel or parcan, into a slide or



Ted Chavalas of AVAB America demonstrates the AVAB 202 lighting control.

gobo projector. **Gobos in a parcan! 92% light transmission! And all for \$200!** Will the lucky UK distributor please stand up!

SIB

From the Adriatic coast, the final SIB/MAGIS attendance figures joined forces with the mild weather and exhibitors' end-of-show impressions to prove pre-show sceptics well and truly wrong: the move from May to March may have been an unpopular decision for some (particularly U.K. and German exhibitors, many of whom said they had been compelled to choose between Frankfurt and Rimini).

"But," reported Mauro Malfatti of the Rimini Trade Fair, "overall attendance figures were up on 1987 figures, if only slightly, and foreign attendance was up 11% on '87 figures. Taking into consideration the fact that the SIB/MAGIS exhibition lasted a day less this year, we are more than satisfied."

"Although some foreign Rimini regulars were not exhibiting (at least not directly), almost all were at the show, as were all the international trade visitors who have made our exhibition the leading event in the world industry calendar in just six years," continued Ignio Bonatti, Trade Fair general manager. Dick Steward and Neil Rice, for example, were both on the Laser Crafix stand to which both their companies had contributed (Mode controllers and TriLite). Optikinetics also supplied the trussing for the neighbouring Nuova

Sysma stand, so were still very much in evidence at SIB 88.

Astralloy, there under their own steam for the third time, also built the impressive twin-booth stand for High End Systems of Texas. In one, the U.S. team demo'd the famous Laser Chorus, while in the other an entire wall of Lightwave Research's Color Pro combined smooth, spectacular colour change with sequencing, dimming and programming effects aided by its user-friendly but sophisticated control system.

Coemar, as well as showing the latest kits for its Forte range of effects projectors (there are now 16 such kits), unveiled the new 'Jupiter' effect, definitely the centre of attraction on their stand. This extremely easily-installed scanner-type unit fits a 700 or 1200W discharge lamp and extensive regulation possibilities plus a choice of 12 colours and 12 gobos confer this high output unit with great versatility (mirror, lamp and reflector are all able to be regulated). Coemar also presented their new 'Uragano' light desk.

Back at Rimini a year after the company's founding, Teatro again had its own stand at MAGIS, manned of course by Mike Lowe, co-founder of the theatre lighting company with Bruno Dedoro of Coemar, and Andy Collier, who confirmed great visitor interest in the new product, which included the 'Alfa' manual control desk and the prototypes of Teatro luminaires with G22 lamp bases.

Just along the aisle, Spotlight of Milan unveiled

the first models in a new series of 'Sintesi' spotlights, with fresnel, P.C. and zoom ellipsoidal versions available with 650, 1000 or 1200W halogen lamps.

Meanwhile, back in the SIB halls, TAS of



CTM's new cabinets.



Mode controllers and Optikinetics' Trilite joined in with the Laser Grafix presentation.



Savoldi and Quadri of Clay Paky (left) show operational details of the new 'Golden Scan' (see Frankfurt feature).

Castelgoffredo previewed the latest additions to its comprehensive effects lighting, special effects and trussing ranges.

On the Ampilux stand Laserpoint staff showed S.R.O. crowds just what the firm's new Ultrascan's high resolution graphics were capable of.

Tony Yates and Enzo Fiondella of Avolites were on the Audiolink stand, where the U.K. firm's Italian distributor was exhibiting the QM500 180 way desk and the extremely interesting micro-processor-based motor hoist controller. This unit controls up to 30 chain hoist motors and stores up to 99 discrete movement cues. The company is working on a second version of the Commander, in strong liaison with French motor manufacturers Verlinde, and are incorporating the controller into panel format for club installations.

Felice Casolo of Artick (Milan) was explaining the ins and outs of the new addition to the firm's range of computerised and computer-aided light desks, the AC 260 'Scala' modular board, on show in its 96 channel format. Designed for use with the company's own power packs, but also compatible with ADB, Strand or other similar hardware, the Scala can be expanded to 480 channels and offers manual, auto and memorised control facilities.

Fly attracted a lot of attention with the 'Painter' 440 channel, 540 scene, 240 program controller, which is particularly suited to neon control. With colour monitor, hard disk drive for memory (optional) and a palette of 27 programmable colours, it is particularly adapted to T.V. and club use (in fact a prototype was designed for one of Italy's most popular variety/music T.V. shows).

Italian audio manufacturers were also out in

force at SIB with their club-orientated product. LEM presented four models in its LX range of speaker enclosures: LX70, a 2-way system with a tuned cabinet format, LX120 with 12" woofer and 25mm horn-loaded compression driver. In the LX150, a wide range 15" speaker in a tuned cabinet is coupled with a 25mm horn-loaded driver, while the 3-way LX220 has a 15" woofer, 8" mid-range and compression driver for the high end.

RCF, a long-standing name in speaker circles, has been manufacturing its own range of speaker enclosures for some time, and chose SIB to launch their Espace range to the club trade: all four models are in bass reflex format, and are: the 200 with a 12" coax speaker which gives 45÷1800Hz and 100W on 8 Ohms, the 250 has a 12" speaker plus horn-loaded tweeter which push out 100W with 40÷2000Hz frequency response. Then comes the 400 (15" woofer, 10" mid and horn-loaded tweeter) with 270W and 30÷20,000Hz and lastly the 600 with 500W, 30÷20,000Hz on 4 Ohms from its 2 15" woofers, 10" mid and N481K and H2009 on the top end.

As last year, CTM came up with a speaker enclosure which impressed for the dynamics and power (1600W): the Supersonic 1600. The bass end is handled by four 15" woofers, with a total power of 1200W RMS, mid-range by a 12" horn-loaded compression driver and a JBL 2445 horn-loaded driver at the top of the scale. FBT had a

complete range of club product on show, including their new MX62 and MX92 disco mixers: the 62 is a 6-in 2-out stereo mixer with 2 phone, 1 Aux, 1 Line, 1 D.J. mike input and 5-band stereo EQ, while the 92 has 3 phone, 3 Aux, 3 Line, 1 D.J. mike input and 4 separate tone controls for each channel.

The Dutch company Stage Accompany had some very impressive sound reinforcement equipment on show such as their Blue Box speaker systems and the SA PPE 2400, a programmable, 2 channel, 4-band parametric EQ with total recall of all variable settings. The memory offers storage, recall and comparison of up to 64 different settings. Resonances are easily detected by sweeping a narrow boosted peak, and other features include standard Midi link-up and (optional) remote control with memory, which enables users to carry their own settings and recall them in seconds. The SA 4525 Blue Box offers a combination of top acoustic performance and high tech electronics, which consist in an active 2-way system: a Bessel crossover, 2 power amps and a microprocessor to operate all control functions. Output power is 250W RMS (bass freq.) and 350W (high). These products are part of Stage Accompany's comprehensive computer-controlled sound system project "designed to bring P.A.'s up to the high tech standards of the rest of the pro audio industry."

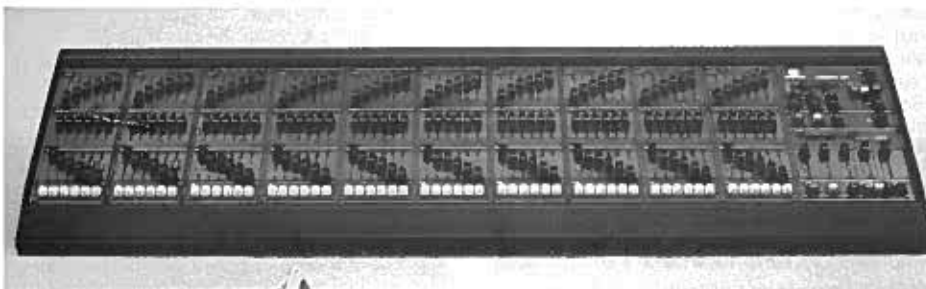
Summing up SIB/MAGIS 88, Rimini Trade Fair President Rodolfo Lopes Pegna commented: "SIB/MAGIS 88 results have been extremely satisfying from every point of view, in spite of the fact that we had to verify the choice of a date change to March for the shows. We shall obviously work to consolidate and enlarge the exhibitions' role even further, making its presence felt even more on the international market, and giving visitors and exhibitors those collateral facilities which befit a show concerning such a technically evolved sector."



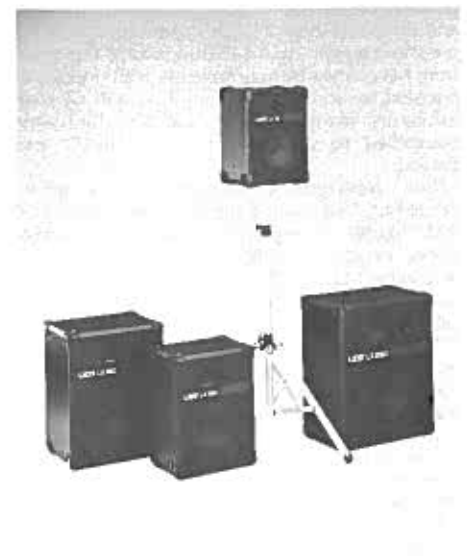
Two of FBT's new audio mixers.



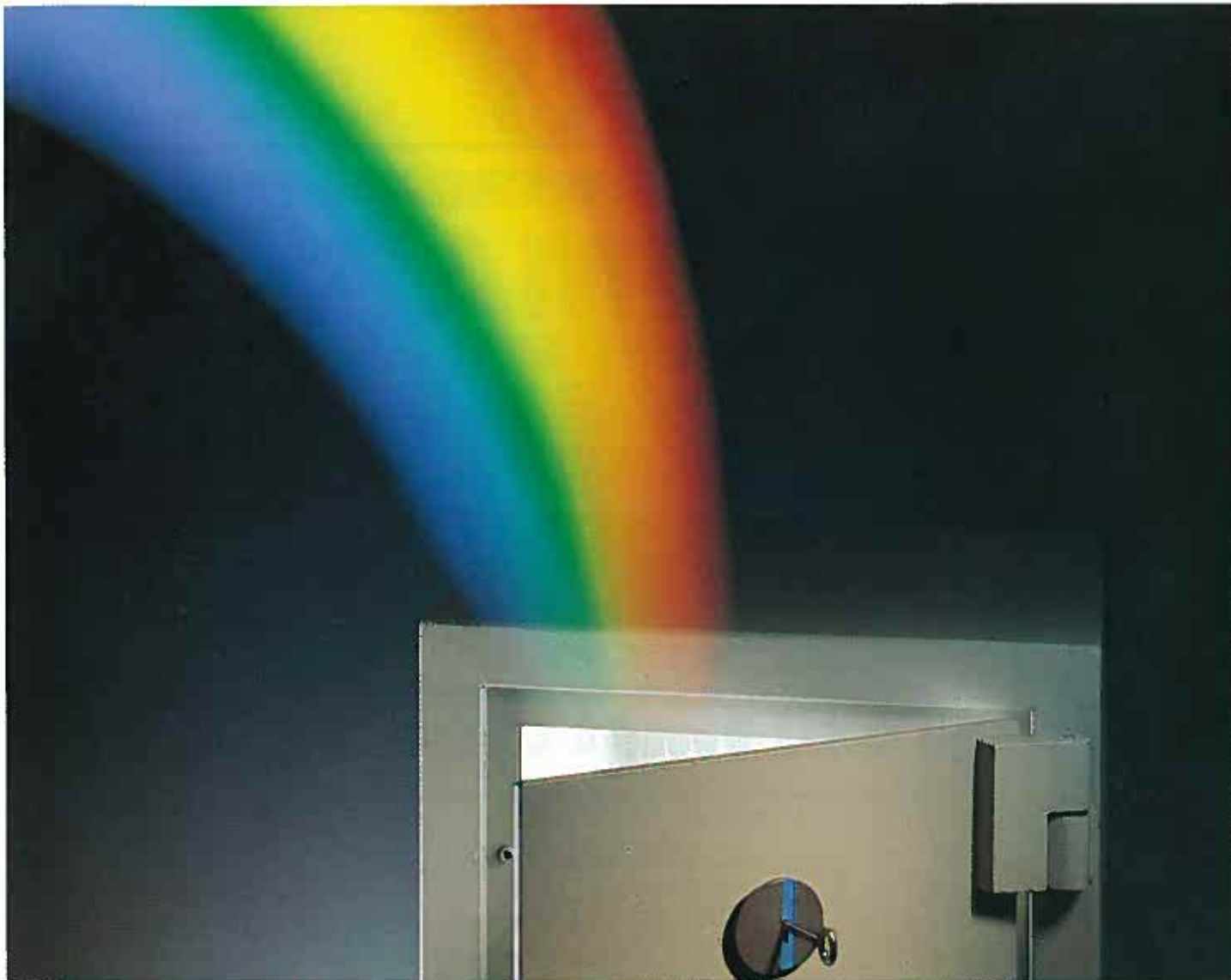
RCF's new Espace range.



Coemar's new Uragano lighting desk.



LEM's LX Series of speaker enclosures.



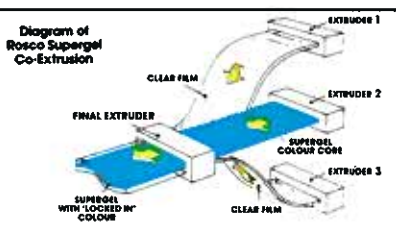
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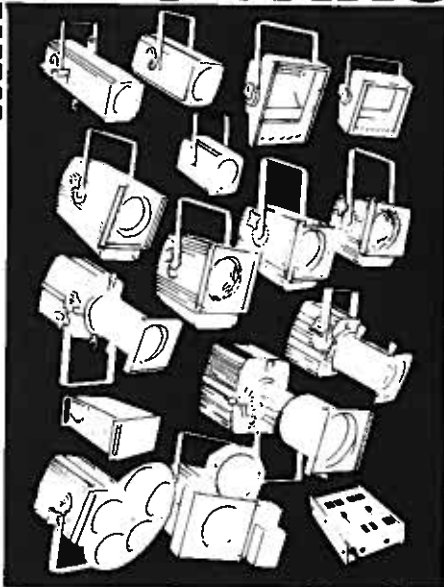
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