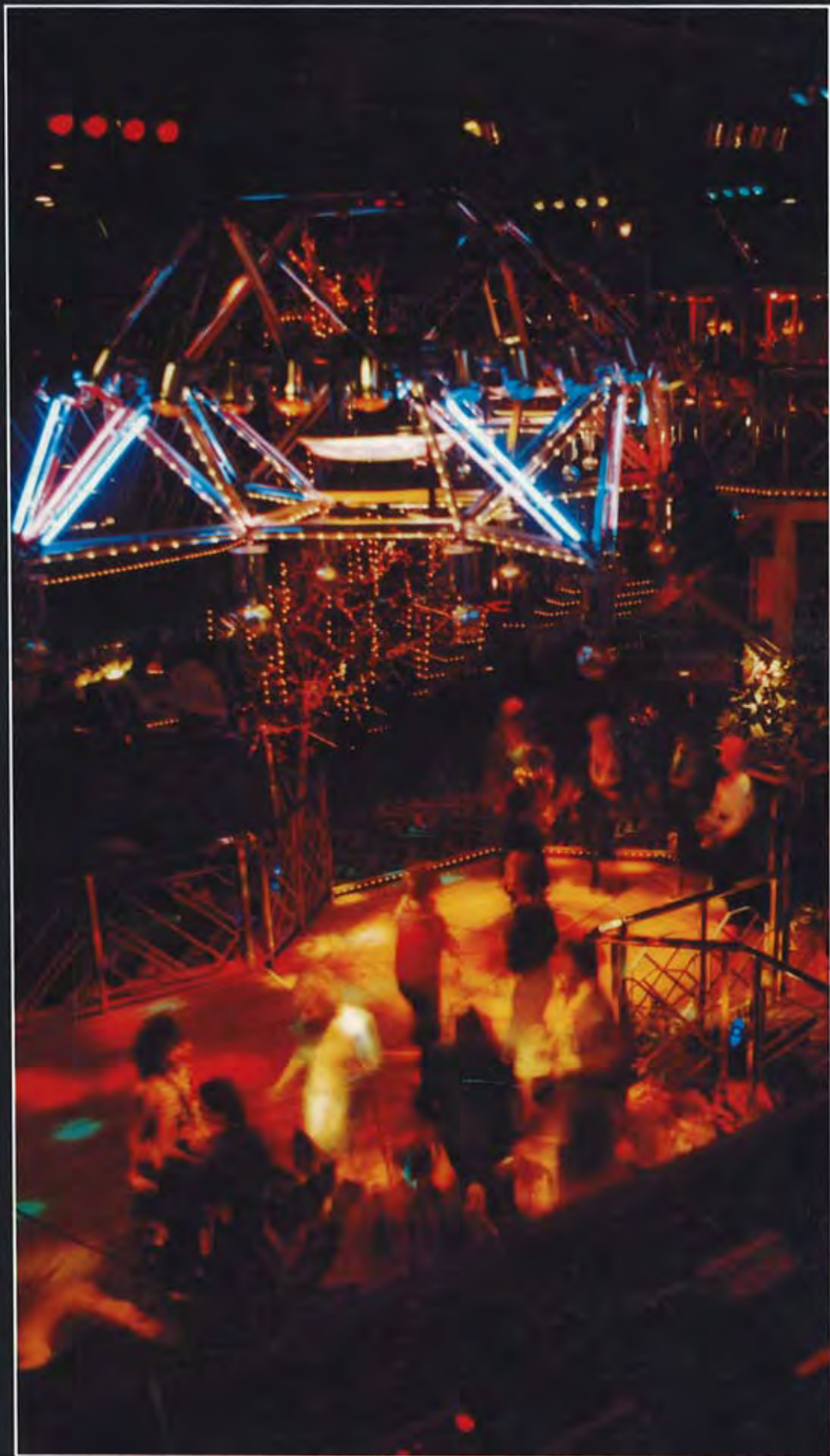


LIGHTING+SOUND *International*



published in association with the Professional Lighting and Sound Association



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December 1985

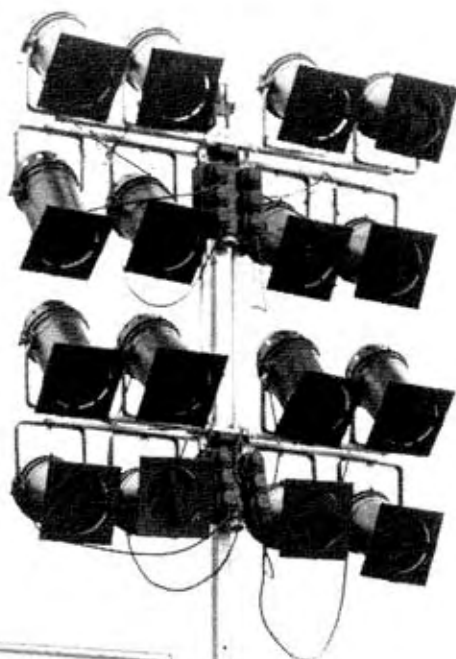
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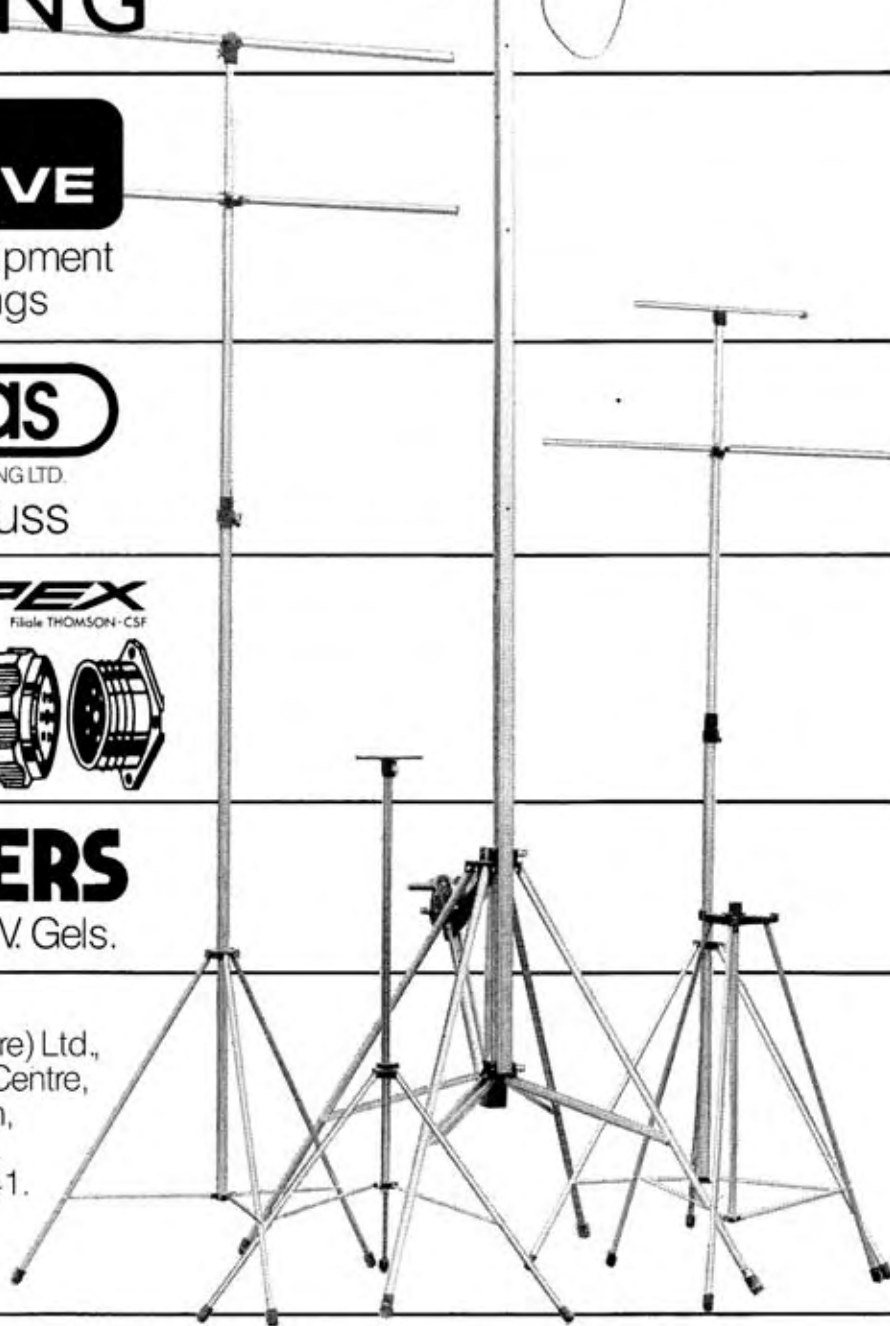
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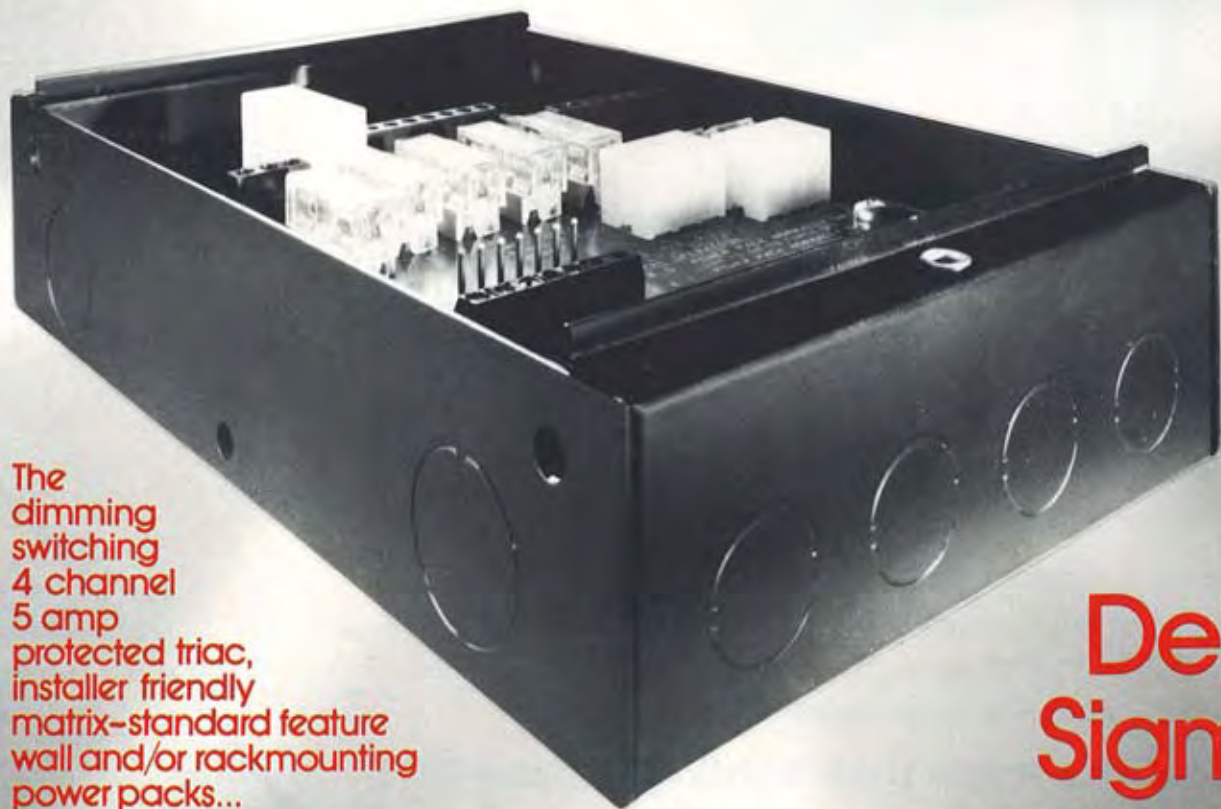
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DECEMBER 1985

- 6 Editorial.
- 8 NEWS in Lighting + Sound International.
- 17 'The' Great British Success Story . . . in Lights.
- 21 Upstairs to Paradise.
- 24 The Point Lights Up.
- 27 In Times Past.
- 31 On Tour.
- 33 The Optikinetics Story: Beam Effects Light Up the Way Back.
- 38 Financing the Three Month Fashion.
- 40 Equipment News.
- 43 Show Page including Exhibition Diary.
- 45 PLASA Members.
- 46 Directory.



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Their name acknowledges a debt to the Indonesian gong orchestra first heard in the West at the Paris Exhibition of 1890. Their work is deliberately and directly in contrast to the dominant cultural idea of music, as you've probably guessed. Their instruments have no history and pre-empt preconception. Can you tell if an arc welder is played well or badly?

Bow Gamelan have appeared all over the world, principally in festivals. They rarely perform in Britain, but caused quite a stir in November when they set up a specially created performance for London's 'The Place' theatre in mid-November.

LIGHTING+SOUND *International*

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Creating the Image

The response to our first edition of **Lighting + Sound International** was, to say the least, more than encouraging. Of greatest importance was the fact that all sectors of the industry gave it a round of applause, and confirmed our belief that there is the need for a major magazine covering all aspects of creative lighting and sound, and aimed at an international market.

"This is exactly what is needed in these two vital fields as it is very difficult to find the publication that deals both with the theatre side of the business and the light entertainment and discotheque side. More and more technicians and businesses are getting involved in both areas of the industry and a publication which pulls these together is much needed."

Nicholas James General Manager, Hong Kong Arts Centre

"I found it both informative and stimulating and would appreciate receiving regular copies. However, might I suggest that the conference/product launch industry should come well within the scope of your publication, the lighting and sound aspects of which are only lightly covered by other publications."

Mike Henson Technical Services for Conferences, Exhibitions and the Theatre

"What an excellent publication. I can't wait for the next issue—it sure fills a hole in the market. I only hope you can keep it up."

Mike Andrews Lite Relief, Southampton

"I would also take the opportunity to say how refreshing it is to read a magazine that so far . . . manages to contain the information of interest in the manner of 'Cue', and that at the same time avoids the trap of latent sponsorship and advertising that some other magazines fall into. Obviously the large manufacturers take the opportunity to advertise within an ostensibly enthusiast oriented journal, but some magazines do take on the guise of internal sales literature, do they not? I hope the next issue continues to be produced in such an admirable, but most of all, genuinely informative way."

Chris Higgs Showsafe, Birmingham

Then there was Robert Goodwin, stage manager of the Lakeside Country Club at Camberley, who kept it short, and simply said "Nice One".

If all goes to plan, in January we will be introducing two more regular columnists to readers of **L+SI** and we are confident that by the time we have reached the better weather and lighter evenings of Spring, the magazine will have moulded itself into a natural "shape" to serve the industry.

You, the reader, will play a large part in that process, and we look forward to receiving continuing comment and constructive criticism—and ideas on what **you** would like to see discussed in future editions.

John Offord
Editor and Publisher

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First in Japan

The first Soundcraft TS24 mixing console has been sold into the Japanese market. This 32 channel version of the in-line console has recently been installed into "Sound Atelier", a 24 track recording studio owned by Takamitsu Miyamoto.

"Sound Atelier" is located in the west of Tokyo which is rapidly becoming a Mecca for Japanese music. Mr Miyamoto felt that more opportunities should be available for young aspiring musicians to record their music and subsequently opened his studio towards the end of July. After considerable research, a Soundcraft TS24 was chosen. Soundcraft Japan, a subsidiary of Soundcraft Electronics, has since fitted the desk with a Mastermix automation system specially adapted for the soundcraft console and offered as an option on all standard TS24's.

New AKG Mic Placement and Selection Brochure

AKG have produced a simple brochure showing suggested microphone positioning for studio recording and live concerts for all major band instruments, voices and percussion. The brochure also indicates the recommended AKG microphone for each different instrument, with secondary choices, where an alternative microphone will perform equally well. A brief specification of AKG musicians and vocalists microphones is also listed.

The brochure, called 'Microphone Applications' is free and can be obtained by sending a stamped, addressed envelope, marked 'Microphone Applications', to AKG Acoustics Ltd., Vienna Court, Catteshall Wharf, Catteshall Lane, Godalming, Surrey GU7 1JG.



AKG's 'Bound to Sound' Brochure—free on application.



"Sound Atelier", a 24-track recording studio in Tokyo—the first Japanese studio to install a Soundcraft TS24 mixing console.

Sound in Entertainment

The ABTT is organising, through its Sound Committee, a hands-on course for sound technicians in the latest techniques and equipment for musical and/or concert work.

The course is intended for technicians with at least two years professional experience and will enable them to widen their knowledge and improve their techniques. It is expected to have particular benefit to those regularly confronted with designing and operating special rigs for musicals in repertory theatres and to those working in theatres whose policy is now including increasing numbers of prestige concerts using the house sound systems. It will be of special interest and benefit to technicians and supervisors working in multi-purpose halls.

Course elements will include in-depth study of four areas: 1)Microphone types, use, techniques and maintenance; 2)Mixer configuration and operation; 3)Use and abuse of signal processors of all types; 4)Specifying, setting up, 'voicing' and using large loudspeaker and PA systems.

Each element will be taken by an expert in that field supported by a member of Committee with special interest in that area. All elements will happen simultaneously with small groups of participants to allow maximum time for hands-on experiment and discussion of particular problems. It is also hoped to arrange visits to look at rigs in action.

The course is provisionally scheduled for **Saturday March 1st & Sunday March 2nd 1986** and will be held at **The Barbican Centre, City of London**. Times will be from 9 a.m. to about 5 p.m. on each day.

Full details from the ABTT at 4-7 Great Pulteney Street, London W1R 3DF telephone 01-434 3901.

Playlight Equip Stage Door Theatre Restaurant

The recently opened Stage Door Theatre Restaurant at Oldsbury, Birmingham was equipped by Playlight's Birmingham operation. The 250-seat venue's lighting consists of 12 CCT Minuette profiles, 6 Minuette fresnels, 6 Minuette floods, 1 10m internally wired bar, 3 Pulsar dimmer racks, Pulsar 18 channel controller and a 24-way patch panel.

Sound equipment includes an RSD Studiomaster 12 into 2 mixer, Harrison poer amps X1000 for main system plus X150 for foldback stage monitors. Speakers are 4 HH Pro100Mk2.

Entertainments manager at the complex is Graham Powell, former compere at the Night Out. Currently he is handling all the publicity and promotion, and takes over the presentation of shows for 1986. Powell told **L+S** that the venue was already proving popular with a lunch-time and evening show format.

Soundcraft in the USSR

Soundcraft consoles appear to be gaining popularity behind the iron curtain. This has been highlighted by a recent order negotiated by Edward Unanian of E.U. International of California that included five Series 800B, two series 400B and one Series 500 and Series 600 sound mixing consoles for various installations including theatres, music groups and recording studios.

Existing users in the USSR include the Moscow Circus Orchestra and the Tbilisi Philharmonic Orchestra.



Babycham by the half million—the Stage Two touring disco promotion set.

Bottled Up by Stage Two

Stage Two of Croxley Green, Rickmansworth were recently commissioned by the Hope Print Group to provide the sets for a 4-week long Babycham promotion that involved the building of a disco module constructed entirely of Babycham bottles with a value of half a million pounds of Babycham (when full).

All sound, lighting and audio visual equipment was supplied by Stage Two and suspended units utilised the Trilite system. Equipment featured at the disco point included 13 2ft. square light screen behind disc jockey, 8kW Parkan rig and 16 way Optikinetics pinspot rig and other effects.

Wakefield Opening

The Theatre Royal and Opera House at Wakefield in West Yorkshire is expected to be open again March 1986 after being dark for many years.

This Matcham-designed building dates from 1894 and went the way of many famous venues, becoming a cinema and bingo hall in turn. Through the efforts of a dedicated band of trustees, restoration work is now nearing completion.

Director designate is Graham D'Albert, and he reported to L+SI that lighting and sound equipment for the 600-seat venue was still to be decided upon.

Mercury spins Zero 88 into orbit

The last quarter of this year "threatens to be the best of all time" for Zero 88 according to sales director Freddie Lloyd. Much of the success can be attributed to their new 'Mercury' four channel

controller, launched at the PLASA Light and Sound Show in September, and billed by the company as 'the first of the next generation'.

Demand has exceeded supply, with all December's production already spoken for, and some of January's too. Freddie told L+SI that a good deal of the new product's successful boost of sales in the UK is credited to the efforts of David Caterall, the company's new sales executive—and it's very much a case of "please come in" when he arrives on their agents' doorsteps to take orders for the product.

Audix Headphones for BBC

Audix Limited, the broadcast audio specialists, have won two orders to supply stereo headphones to the BBC.



During recent discussions between the BBC and the company, the BBC expressed interest in a headphone manufactured by a West German company MB Electronics. Audix arranged for a modified version of the headphone to be manufactured and sent it to the BBC for evalua-

tion which swiftly resulted in the orders being placed.

BBC Radio has ordered 50 sets of the modified version of MB Electronics' PMB 5 for field trial use. This order was followed by a second for 200 sets to be used at next year's Commonwealth Games. Audix are also supplying complete audio broadcast systems for the studios at Edinburgh.

The PMB 5-2K has an earpiece impedance of 2000 ohms and is lightweight and acoustically 'open' making it suitable for monitoring use on jackfields, etc.

For further information contact Audix Limited, Wenden, Saffron Walden, Essex CB11 4LG telephone (0799) 40888.

Studiomaster Out East

New Sound Studios of Hong Kong, on behalf of the Manhattan Group, have installed seventy Studiomaster Mosfet 1000 amplifiers in various clubs and discos in the far east. In addition to five venues in Hong Kong, the equipment has been installed at The Cinoiserie and The Gatsby in Singapore, The Cinta in Penang, the Ebony Discotheque in Jakarta, The Moonlight in Cheju (Korea) and at the Mirage in Delhi.

What do you want from the ABTT?

As we went to press the Association of British Theatre Technicians was about to hold an open forum (29 November) for members of the committee and their secretariat.

The executive and council have evidently been considering ways as to how the Association can improve benefits to members, and they feel this meeting will give members themselves the chance to stand up and say how they feel the Association should develop in the future.

L+SI has invited chairman Richard York to tell us the outcome and give his personal view and we plan to include his article in our January issue.



Richard York, chairman ABTT.

Broadening Horizons

Nicola Ticozzi, president of the Association of Italian Discotheques and Theatre Equipment Producers (APIAD), has written to PLASA (UK), VDDA in West Germany and DIN in Holland with the suggestion that an International Federation for the show equipment industry should be formed. The main aims would be to improve the disco/theatre equipment industry's international image, to coordinate on matters such as exhibitions, and to be able to check on viability of customers.

It is suggested that membership would be free to participating associations, and that an annual meeting is held at one of the international exhibitions to elect a president and carry out the business of the federation.

Any reaction from PLASA will be reported in the Show Page and PLASA News in future editions of L+SI.

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New Sound for Cinder's

A.C.T. Sound and Light of Cranleigh, Surrey have announced the completion of a contract for the installation of a new sound system for Cinder's nightclub in Willenhall, West Midlands. The club is part of Phoenix Leisure Services group, and the £10,000 project involved installation of the following equipment:

Main room: 1 x Formula Sound PM80 5 channel mixer, 2 x Technis SL1200 turntables, 1 x Shure 545 mic, 1 x Formula Sound SE1 equaliser, 1 x DDA D500 stereo 2-way electronic crossover, 2 x Rauch DVT250 power amps, 1 x Raunch Powerblock power amp, 2 x Turbosound TSE 118 speaker enclosures, 2 x Turbosound TMS 4 loudspeaker enclosures and 2 x Pro-Phase 126 custom-built enclosures (balcony).

Function room: 1 x Citronic SM350 mixer, 1 x Citronic EQ 230 graphic equaliser, 2 x Citronic CS30CD turntables, 1 x Rauch Powerblock 445 power amp and 2 x Prophase 156 custom-built enclosures.

New for Christmas

The Redgrave Theatre at Farnham in Surrey has just taken delivery of a new 180-channel Gemini lighting board, and chief electrician Vince Herbert is priming himself for the challenge of designing the lighting for the theatre's Christmas show, "The Adventures of Alice", which commences its run on December 11.

The Redgrave's assistant electrician Ghee Bowman operating the new Gemini lighting control.



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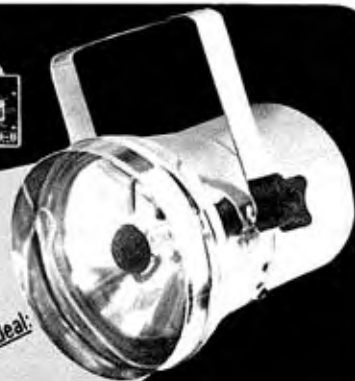
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Self On His Own

Tony Self, having spent the last ten years as one of the prime forces behind the sound division of Shepperton based Entec Sound and Light, has decided to launch his own concert production and sound consultancy company.

A veteran of the live sound mixing desk for many of the world's major artists (Grace Jones, Lou Reed, Patti Smith, Wishbone Ash being just a few), Tony has, in the last few years, developed his skills to become one of Europe's leading experts in the use of high powered sound systems in outdoor locations and has also gained a substantial reputation in the field of concert, tour and festival production.



Tony Self.

The new company, AJS Production Services, intends to specialise mainly in the area of festival and tour production but will also undertake tour and stage management work. Tony Self will be personally available to give his expert advice as sound consultant to the theatre, club and disco market anywhere in the world.

Not wishing to lose contact with his old friends and colleagues in Shepperton, Tony was pleased to find that among his first customers were Entec themselves who promptly negotiated to retain his consultancy services, in particular for the many open air events to which the company supplies its service each year.

AJS Production Service are based at Victoria Farm, Brookwood, Surrey GU24 0AQ.

Salisbury Opening

Salisbury's 'New' City Hall opens for events and bookings from January 3, 1986. A major refurbishment, the venue will have a maximum seating capacity of 1057, increasing to 1116 for standing concerts. The auditorium is multi-purpose with a

single bank of retractable seating.

Sound equipment was installed by the local firm Stagecraft of Salisbury, and as far as the auditorium is concerned involved the re-location of existing items from the original hall. Smaller items such as mics, players and cassettes have been purchased new. The general public address is completely new, and patching facilities in the new control room allows input from any areas in the complex, and inter-connection with the auditorium sound system. There is also an induction loop in both the main auditorium and the Alamein Suite for the hard of hearing.

For lighting, the Pulsar 36 channel control has been retained, as have the dimmer packs. All luminaires are new, and all CCT. They include: 10 x 500w Minuette fresnels, 12 x 1kw Silhouette 30 profile spots, 6 x 500w Minuette TT profiles, 12 x 1kw Starlette fresnels, 2 Chromatic MX wheels with remote controllers, 4 telescopic light stands, and 2 x 2kw Silhouette follow spots. The existing theatre stock of 18 Patt.40 floods has been retained.

Capital cost of the complete project is £840,000, and general manager is John R. Wills.



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HAPPY CHRISTMAS

Bose SoundShops Open Doors

By the end of the year, sound specialists Bose will have opened the first 7 in a chain of dealer outlets which will offer a special service to their customers. The 'SoundShops' as they are called, form a national network of showrooms all run by Bose agents and each boasting a permanent display of all of their products, geared up for live demonstration in an atmosphere as close as possible to a real working environment.

The new shops are based in London (2), Bristol (Stage Electrics), Birmingham (TEC Ltd.), Bradford (Dial Design Ltd.), Manchester (Hazel Grove Music), Newcastle (Sound Electronics), Glasgow (Night Flight) and Belfast and Bose have aimed for an even geographical spread. In this way, it is hoped that there will be a Bose dealer in reasonable distance of any customer. The maximum number of SoundShops likely to be opened is twelve.

The new outlets have been carefully chosen. All are based with professional equipment retailers and commercial installation agents. L+SI visited the SoundShop in South London at Robert Luff Theatrical Hire Ltd in Peckham, which officially opened on December 1. This was not an area you would stroll through on your own at the dead of night, and it's a bit off the beaten track from the nearest main road. But once you find your way there, a room has been set aside with speakers covering all four walls. These are all operative and SoundShop staff are helpful and willing to give you a demonstration or advice.

Walter Mirauer, Bose managing director was there for the launch. "The SoundShop means that you can shop in comfort and hear exactly what you are getting—not just look through a catalogue or compete with the noise of a domestic retail outlet. We will be most happy if people make appointments to come and see us, then we can make sure they get expert, individual attention. But if that's not possible, they'll always be welcome to turn up—whether they are domestic or commercial customers," he told L+SI.



The Bose SoundShop at Robert Luff Theatrical Hire Ltd.

The network is joined throughout the company by a British Telecom Linkline. This is a freephone service laid on by Bose. Potential customers telephoning the Linkline number will be automatically routed to their local SoundShop.

The Linkline numbers are all prefixed by 0800 followed by the regional numbers which are: North East (Leeds) 591155, North East (Yorks) 591500, South Thames 282232, North Thames 282582, Midlands 626526, South West 373372, North West 262373.

The service costs the potential customer nothing and within seconds he can be talking to someone in his own vicinity who is able to deal with his enquiries.

A future plan is to offer a computer advice service whereby the customer's needs are fed into a terminal and the computer will make a recommendation as to the best product. This service, L+SI was assured, would also include other companies' products. A confident and adventurous project, but one that is definitely still in the pipeline. Bose like to feel that they can shake up the rest of the industry and predict that other companies will soon open the equivalent of their SoundShops. But this doesn't worry them. "It all improves the business, doesn't it?" said Walter Mirauer.

The next SoundShop to open will be at Lightfactor Sales in Greenford, and this comes on stream during December.

Soundcraft at the BBC

The BBC are to install a Soundcraft TS24 32 channel, fitted 26 channels, in-line mixing console at the Engineering Training Department at Wood Norton, Worcester. The desk has been purchased as part of an updating programme from 8 track to 24 track recording.

The BBC has also confirmed an order for a second Series 2400, 28/24 (LED) mixing console for use in the Radiophonic Workshops at Maida Vale, West London. Over at BBC Radio London, a new Soundcraft series 200B console has been ordered for use on their highly acclaimed 'Sole Night Out' show which is broadcast weekly from clubs and discos in and around the metropolis.

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Sound Operator and Sound Equipment

Philip Clifford

Sound operators make mistakes. That is the way in which they learn to operate one performance and the succeeding performances. These mistakes, inevitable as they may be, are in the short term very damaging to the operator's confidence and self-esteem. Quite naturally the operator at times like these will blame the mistake on anything in site—the darkness in which he works, the discomfort of his physical position, the unexpected suddenly springing upon him in live performance, ill-thought design of his equipment—anything, in short, that his own entirely natural human error.

Knowing this, many are inclined to discount complaints about equipment design which originate among operators. Conversely, many non-operational sound men, engineers and designers, for instance, readily suspect that such complaints are purely temporary and purely excuses for operator error.

They are very unwise in this. Operators, after all, are those most intimately exposed to the demands of the performance and most acquainted with the equipment's responsiveness.

Remembering the circumstances of the sound operator's work which I have just outlined, the general considerations governing control equipment design can be listed. Theatre sound operators should work in the auditorium of a theatre, unless the sound on stage is exactly the sound in the auditorium. Some sound men believe that the sound operator's position should be where the sound is best. I don't, thinking that if there is a "bad" position, its faults must be cured, if only for the benefit of those who pay to sit there. Such cures are nowadays certainly possible.

This may or may not be a unique set of circumstances; the point is that from these circumstances we expect difficulties and the operator's equipment must be designed and used in such a way as to overcome, or best avoid them.

At present sound controls are designed in white light and sold in white light. It might be better to design the colour and labelling of controls for shaded and coloured light, but in present circumstances a relatively large number of small light sources on goosenecks and with dimmers seems to be the best method of a light level that is comfortable enough to enable accurate work and yet not be obtrusively visible in the auditorium.

The working area that can be secured for the operator is most likely to be restricted and since we expect in the foreseeable future to be meeting (or trying to meet) an expanding demand with shrinking financial resources, this restriction must be expected to continue. Nevertheless, I am going to advocate the provision of devices that demand

space and are at present uncommon in operator's equipment.

The first of these is a script desk space. A script is typically an A4 booklet and this desk therefore must accommodate A3. No console manufacturer's product at present incorporates such an empty area, and if it did, it would be in the least convenient place. An obvious method of providing this work space is to order a console with positions for an unwanted number of control modules, and omit these modules, replacing them with blank panels. This is quick and easy, if you happen to be buying a console, but obviously extravagant and ultimately messy because it ignores the likelihood that the best position for the script will be the position more or less, of the most conveniently used modules.

The best solution is a work table that can be quickly moved aside and pulled back into the working position. Counterweighted arms, lazy tongs and so on might work; but what does is a table which slides on a railway across the control surface. Some desks will provide the rails (or equivalent bearing surfaces) without modification, or with very little. Essential features of the design are that the table, and its railway, do not come nearer the operator than the top of the faders and that the wheels incorporate ball-bearings—otherwise, they'll squeak. If the table is made of perspex or transparent P.V.C. quick visual checks across the whole console surface are possible; or a timber table can be attached to the bogey by hinges for the same purpose.

This seems an appropriate point to consider the operator's paperwork, typically the script, the plot and the equipment layout. For many operators, in many circumstances, it seems difficult to write the plot in the script, but it seems to me the obvious place. By saying that making a complicated reset from the script means the risk of losing one's place in the script, we seem to acknowledge that sound operators don't know the script well enough.

The solution to that difficulty is obvious, and if a reset plotted on page 22 will take so much time that when it is complete, the performance will have proceeded to page 23, then the solution is to plot the reset twice, once opposite page 22 and once opposite page 23. The plot we are discussing will be a plot only of the work necessary to reset from one cue to the next and will not necessarily represent the complete state of the console; this must, and does, cause serious difficulty when it is necessary to go back from cue 12 to cue 7 for say, a scene change rehearsal when a change in the state of a channel made between cues 9 and 10 is not cancelled in readiness for 7 because no retrospective note has been made on the cue 7 plot.

A like difficulty arises when there is a rehearsal starting at any place except the beginning. In a show of any complexity, it is essential to keep two plots, one of operator's performance, and the other of successive states of the console controls. This, in any large-scale show means two operators.

And two methods of keeping the state plot are possible: one graphical, the other tabular. The direct visual relation of plot to console might seem to make it the only possible method, but the display of redundant routes and inadvertent errors that the columns of a table afford is invaluable. Neither method is ideally applicable in every case. For shows with frequent occasional resets—sound effects shows, typically—tabular plotting is best; for shows with infrequent resets perhaps only daily checks, of very big consoles, the visual clarity and directness of graphics is probably best. It might be asked—why not work from the state plot? State plots to convey the required detail are very big and working from them in technical rehearsals takes too much time.

At present, we perhaps think that the connectors with which a device is equipped are not part of the operator's concerns. This view implies a very restrictive view of the operator's responsibilities and abilities in any case and it certainly neglects the possibility that at any time the operator may be called on to alter the connexions, internal or external, of the desk because of catastrophic failure. It is obviously always best, from the point of view of reliability, that any device should be connected as directly as possible to the console, so that a microphone, for example, is best connected by one cable to an XLR connector on the rear of the desk.

Practically considered, this can lead to enormous difficulties. The sheer quantity of cable that is left lying about inevitably leads to rat's nests; and in many cases it becomes a matter of minutes, not seconds, when a cable change becomes necessary. Many desk manufacturers have now considerable trouble in producing a tidy and logical connector layout and even more trouble in labelling it logically. The rear of the desk is inevitably the darkest and most cramped of all the cramped and dark corners in the equipment, and it is common for operators to find themselves reading the console labelling upside down, or counting to find the nineteenth XLR from the left. Lastly, the incoming cables in this arrangement must be labelled since their origin is untraceable.

Some patching device is obviously essential and I see no reason to choose anything but the G.P.O. pattern jackfield. Since, in addition to the existing connectors, we are introducing at least two jacks and two plugs, it is obvious that this additional equipment

should be chosen on the basis of performance and not price; but the G.P.O. plug and jack are fortunately still a cost-effective system.

The advantages of the jackfield are such that only those who've used them will fully understand them, but it is obvious that the jackfield can be conveniently placed, well lit, logically labelled and permits anything to be plugged into anything. In a restricted space it also offers a high packing density, although I think that the higher density of the two traditional G.P.O. types is as small as I would like to go. The more recently developed high density type is very hard to read accurately. The 'bantam' jackfield is I think perfectly useless in our application. The jackfield is best installed in a 19" equipment rack within reasonably comfortable reach of the console, and it is imperative that space be left in this rack for the installation of many more runs of jacks during unforeseen but inevitable future developments.

The leads between desk and jackfield can obviously be terminated in XLR's to plug into the desk's standard connectors, but if this connexion is being planned in connexion with a new desk, multicore connectors should be seriously considered. They are cheaper, the best multicore connectors are better than the best XLR's, the cables are less bulky, moving the console from one location to another becomes much easier, and mistaken cross-plugging of individual lines is eliminated. Rectangular plastic-body connectors are much used in this application, and it would be hard to make a serious case against them until it becomes necessary to extend the cables by plugging one into another, when it is immediately clear that much more expensive circular connectors are worth every penny.

Much discussion of sound consoles assumes a quite illusory freedom of choice of facilities, formats and performance characteristics. Most of us have sooner or later to acknowledge that in choosing a console, we are looking at equipments made for markets with more stability and purchasing power than our own and making the best of a bad job. Typically a theatre with money to spend will today be likely to buy a desk with eight bus outputs, remixed to stereo and four auxiliary outputs. The output modules

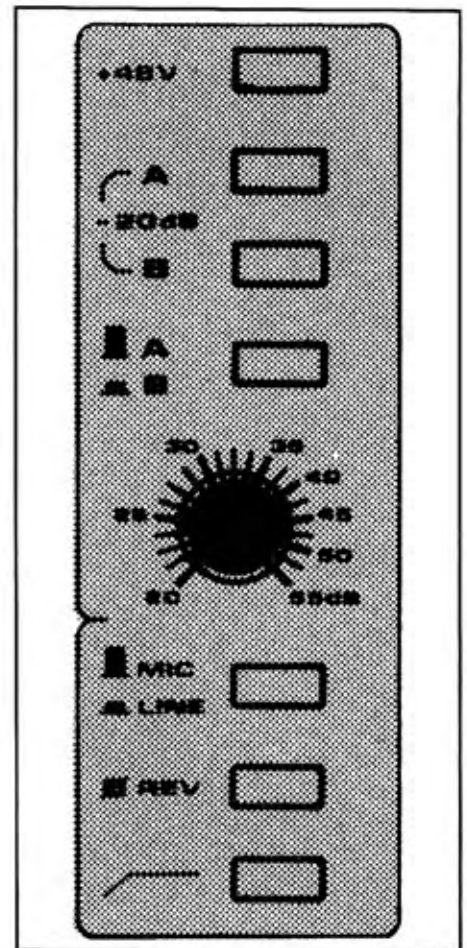
will very likely contain monitor returns for eight or sixteen tape recorder tracks or a so-called output matrix which is very little more use but seems to permit the manufacturer to describe his product as a theatre desk.

I would not for a moment deny that some (not all) of these consoles are truly high quality equipment and that some (not all) offer true value for money. But I would deny that discriminating on grounds of performance between one well-made example and another is any more than a matter of taste or of avoiding the firm who made the last one.

Looking at equipments to be found in theatres, including my own, I would go further and say that, where discrimination is possible, we neglect to make the effort. Desks do, after all, differ one from the other in ergonomic qualities; and whereas we have to take the manufacturer's word for the electrical performance of his equipment, since most of us don't have the test equipment to check it, we can check the quality of the control surface by the existence of our eyes, hands and brains.

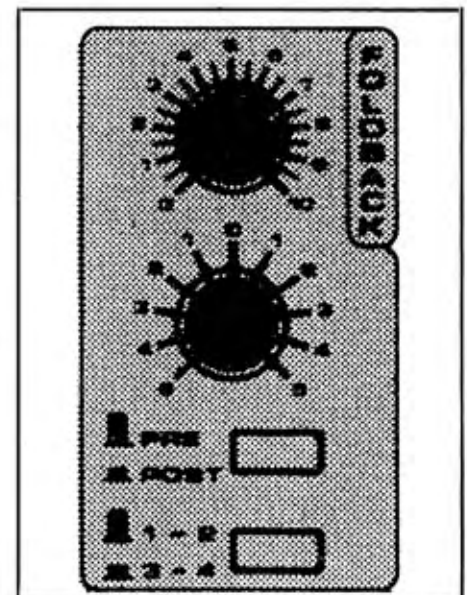
What will be found by these means is at least as important as the 'Q' of an equaliser or the distortion of an output stage in assessing the suitability of an equipment. The most important function of a control desk is to enable control, the sound operator's control, and I hope to indicate some of the ways in which good, that is effective, control surfaces differ from ineffective and bad ones.

The use of pushbuttons is generally misunderstood. Whereas a group of output selectors are well implemented by pushbuttons, because they offer immediate confirmation of the existing selection, other switch functions are very badly implemented by this means. For instance the pre-fader/post-fader switch for auxiliary output routing always requires a diagram of pushbutton alongside the button to make its function clear, whereas a toggle-switch is just as quick to operate, conveys no less information with much less ambiguity and is capable of switching to and displaying three states. The pushbutton seems to be in the mode, largely because it suits the manufacturing process, perhaps, but also because it seems to offer a precise choice of function. I think this is illusory and I think that it offers irresisti-



In order to keep cost of manufacture down, manufacturers use arrays of pushbuttons to control input switching which on more expensive equipment is handled by a single rotary multi-wafer switch.

ble temptation to manufacturers to answer the problems of formatting the console surface even before the problems are clearly understood.



In this typical use of pushbuttons the operator is obliged to transfer a representation of the button's position into the up-down movement of the button in order to know whether he's selected pre-fade or post-fade action. This inevitably leads to either confusion or delay.



The Soundcraft Series 500 desk—representative of studio equipment imported into theatre practice.

The input section of a control desk module at present is likely to contain the following switches—mic/line, 20dB attenuator, phantom, phase—and a level control. The four switches offer sixteen possible combinations, only one of which can be correct at any time; it is very likely that hasty resetting of these switches is going to be required and that sooner or later the phantom power will be switched with the microphone live to a speaker. The alternative uses two switches, one multiple-position level control in 5dB steps and a phase-reverser, to do the work of three switches and one level control.

A few manufacturers take the minority, but sensible, view that changing the phantom power state is a drastic step rarely required and place the switch at the back of the module which must be withdrawn before the switch can be operated. In addition to its simplicity (and very high performance) the rotary switch has the advantage that it can be (and is) operated with complete accuracy by connecting the clicks from one or the other extreme of rotation—in poor light, or while looking at a meter. It is also exactly consistent in performance from one occasion to another and very consistent from one module to another.

In an aside, I would like to dispute the view, sometimes tempting, that consistency of performance is absolutely essential, from one time to another, from one example to another, and that absolute accuracy, while desirable, is less essential. The consistency required of the equipment can only be achieved by testing. This testing uses a standard, and that standard might as well be absolute as not in the testing process; in operations it is hopelessly confusing to remember that +8 "means" +4 in the other desk. Plus 8 can only mean one thing: in the G.P.O. it might mean +8dBm, in Broadcasting House it might mean +8dBu and in America it might

well mean +8VU (a very different thing). But there is no need whatsoever for inaccuracy.

The operator's monitor is first and foremost a headset. A pair of loudspeakers is irreplaceably useful in sound rehearsals, but monitoring in performances—and at many other times—is by stereo headphones. The phones and their amplifier should be capable of exceeding comfortable listening level so that the operator can monitor during a noisy performance; but the normal listening level should be exactly resettable, so that an unusual level noticed during a check cannot be ascribed to vague error in setting the headset level. The operator's primary monitor is the performance itself and many theatre consoles offer only pre-fade-listen for monitoring. I think this a limitation; monitoring in stereo of sources and outputs is very desirable.

The view is often expressed, by an authority, that "sound operators never look at meters". While agreeing that sound operators may well not use meters as effectively as they might, I must say that operators very sensibly use meters in a basic and primary fashion all the time, to check for the presence of a signal which is failing to emerge from the console; and if the signal is clipping, then the meter is the first place they look. This is certainly not the methodical use that prevents errors before they have the chance to happen.

The dispute about p.p.m. and VU meters seems less acute than it was. The influential view, if not the majority, favours p.p.m.'s and an operator who cannot constantly watch meters is very wise to use meters which hold peaks. I frequently have the chance to use p.p.m.'s and VU meters simultaneously when recording from a desk with p.p.m.'s into an Ampex recorder equipped with VU meters; the meter reading on VU is so low that it is difficult to believe—so low that one

occasion I re-checked with line up tone.

In-line LED displays are now increasingly used for metering. The high density of information they offer is obviously necessary in multi-track recording; in line displays at present suffer from the disadvantage that there is no standard value of indication so that without an effort of memory we interpret the display as three-state i.e. OK, danger and oops!

This no doubt can be sorted out, but the inherent disadvantage of linear displays will remain. A needle swinging in a window has a clearly defined start and stop point; furthermore it has a third, unacknowledged but very valuable reference, our sense of vertical, so that when the needle is in the right-hand portion of the meter scale we are keenly, if subconsciously aware of its displacement from 90° to horizontal, which is conventionally the 'safe' area of indication. This all suggests that my own preferred meter is the B.B.C. peak programme meter, and this is so; but the white-on-black form of its display is a severe drawback in poor light. Suggesting a change to black-on-white (for instance) would introduce confusion between the BBC instrument and the E.B.U. p.p.m. which already has a black-on-white scale. A wholesale change to EBU metering is unlikely, since the in-line meter can be expected to gradually take over. But it's a pity.

PHILIP CLIFFORD is the head of sound at Manchester's Royal Exchange Theatre, and his article is based on a talk given to members of the Association of Theatre Technicians during ABTT Trade Show North in October. He is a Cambridge arts graduate who was head of sound at the Royal Opera House Covent Garden for seven years before founding Autograph Sound Recording Ltd. He then worked freelance for several years before joining the Royal Exchange Theatre in 1984.



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'The' Great British Success Story . . . In Lights

Julian Williams

One of our great pioneers of stage lighting for the theatre recently expressed his view on where we are at with the art in 1985. ". . . Gadgets and technology do not however make good theatre. Let the lighting designer always remember the fundamentals of lighting on the stage, which are the support of the actor and the enrichment of live communication with his audience . . ." . . . so says Richard Pilbrow.

The last decade has been a very significant time in our business with the close scrutiny and tightening up of all finance alongside a simultaneous and tremendous growth and expansion of automation technology. It is truly remarkable that in spite of the rough ride taken by our industry it has been quick to change, and assess itself accordingly. The show has to go on!

With an estimated 39 million audience attendance (7.5 million in the West End alone) in 1985—almost 45% tourist input—producing an estimated theatre box-office take of about £200 million*, this year has been a huge achievement in both theatre marketing terms and in the quality of productions. The theatre lighting industry, being part of this

achievement, is on its way to firmly establishing itself as a great British success story!

It has also been the year of innovative products such as the ABTT award-winning TBA low voltage 'Magic Lantern' luminaire, with a debut multiring at the New American Theatre, Rockford, Illinois (and soon to be seen in Vancouver at Expo 86), and the BBC computer interface from Pulsar allowing any 0-10 volt control signal dimmer channel hook-up to your micro.

The Varilite from the USA is now firmly established not only as a significant luminaire for illuminating purposes but has also added a new dimension to stage lighting in becoming a performer. It takes its place down-stage centre with all the regalia of associated effects, showing that stage lighting has now come down from the grid (masked by black borders) to present itself in full view of the audience, and with a very supportive role in a production.

Theatre lighting service companies have expanded and joined forces with others, such as the new Samuelson/Theatre Projects Services enterprise. AJS of Bournemouth

have opened up an office in the middle of London's dockland, Mike Sweetland Lighting have opened up additional new offices in both Birmingham and London, and jointly taken on with Eurolight the old Theatre Projects lighting shop. Playlight now have four regional offices. Donmar have established a sales force attached to their Earham Street shop with on the road personnel covering a geographical radius of the GLC area and the south. Ancient Lights and Leisureplan have both moved into larger premises while new supply and hire enterprises have formed and established themselves up and down the country. Rank Strand have a more consolidated company structure with Strand Century in the States. Other have been taken over such as Tulla, while some have rationalised and become smaller. Even the original, all-in-one, T.P. has reduced itself in size.

In the year when the Arts Council is fighting for the survival of all subsidised theatre throughout the country across the whole spectrum of fringe, national, subsidised, and repertory companies, as with other industries both commercial and subsidised,



The ABTT award-winning TBA low voltage Magic Lantern made its debut at the New American Theatre, Rockford, Illinois.

1985 has been a year when we have had to stand up and be counted. And we are told by the Arts Council that if artistic standards are not good enough, companies will be dropped from their support. This was the year when The Royal Opera had its operation under financial threat, when The National had to close one of its theatres (which having now reopened may have to close yet again) and The Royal Court had to seek support from a sister theatre in New York. For an industry that cannot raise its prices according to increasing costs as other industries do, relying completely on 'bums on seats', it has been a year of survival of the fittest in all areas of the business.

This successful year of 1985 has seen effects and lights in British theatre that have never been seen before. Moving on from the enormity of 'Starlight Express' with the ever increasing demand on designers to create the biggest, best, most mobile and realistic sets, the lighting designer has had to echo this change accordingly. **Mother Courage**, designed by John Napier, with its permanent backcloth of smoke, ended with a stunning burst of light! William Dudley's **Mutiny** gave us a new dimension in stage design with his amazing creation, the hydraulically activated (and forever revolving) ship rolling the waves at the Piccadilly surrounded by Mark Henderson's lights.

Some of the more successful productions in which our own lighting designers have played a most important part this year included the very expensively designed ENO production of Gerald Scarfe's **Orpheus in the Underworld**, giving us the most enormous

cartoons on a stage backdrop calling for Nick Chelton's operatic expertise against such powerful images . . . **Les Miserables**, **The Government Inspector**, **Jumpers** (with the scintillating Felicity Kendall shining on a suspended moon singing her heart out), and Glyndebourne's **Albert Herring**, all having David Hersey's illuminations. Then we had William Bryden's—best Director award 1985—**The Mysteries** was both designed and lit by Bill Dudley (with Lawrence Clayton) with all its festive atmosphere of miniature flickering lights and God's white beams . . . **The Seagull**—with Vanessa Redgrave's best actress award 1985 for her performance—having David Horn's contrastingly brilliant outside lit dining room windows . . . The RSC's **Red Noses** designed by Farrah and lit by Terry Hands having its search light effects amidst steamy dry ice . . . Leo Leibovivi's memorably lit Coronation scene in **Richard III**—Anthony Sher best actor award . . . **Coriolanus** with John Bury's Grand Civic Arena, Ralph Koltai's setting for **Troilus & Cressida** lit by Jeffrey Beecroft . . . **Are You Lonesome Tonight**—Best Musical Award 1985—with Voyteks excellent 3 Cadillac radiator bonnet setting . . . and the power of Bob Bryan's lighting for RSC's **Henry V**.

1985 was also the year of the train. Moving on from last year's array of railway trains on the race track at Victoria, where Rusty still keeps puffing along, the train dominates such settings as **Breaking the Silence**, charged with Chris Ellis's battery of FOH booms keylighting from one direction into Alison Chitty's open pullman carriage set, and departing from our very eyes upstage before

disappearing over the Russian border. Meanwhile Tommy Steele's real steam engine was still chugging along in the black-out in all its glory and with shining headlamp, while on the same nights could be seen the ghost train coming up over the horizon with its headlamp shining towards us yet again as it arrived downstage centre on real railway lines and beautifully lit by Bob Bryan at the Olivier in John Gunter's award winning setting for **Wild Honey** . . .

Torville and Dean was perhaps the largest ice show this country has ever seen, and it commenced a world tour at Wembley Arena in London to move on to a special tent capable of housing all the equipment and effects in Nottingham. Lighting designed by Andrew Bridge not only created 'sound to light' with his entire rig but also theatrically linked his lighting to the skaters' movement in a subtle form, making full use of swinging and revolving light beams, continuously changing colour.

The musical revival has also maintained its momentum with the new **Gigi** (Andy Phillips), **Guys and Dolls** displaying Hersey's New York neons everywhere, **West Side Story** (Chris Ellis) and **42nd Street** (Joe Davis/Leonard Tucker). Then there are the long runs such as **Cats**, **Evita** and **Singing in the Rain** with its special rain truck that has rained every night for 894 performances (and flooded the depths of the Palladium on some nights!) while Richard Pilbrow's mini Par lamps (stimulating film set lighting conditions). This show is to continue at other venues in the coming year. Meanwhile energetic high flying and totally dedicated



Starlight Express—"where Rusty still keeps puffing along".

photo: Nobby Clark.



"Swinging and revolving light beams, continuously changing pattern and colour"—created by Andrew Bridge for Torville and Dean, also pictured below.

Michael Crawford can be seen in 'his' **Bar-num** surrounded by CCT Silhouette light beams with all the colours of 'his' life creating multi-domino type patterns on the floor beneath him at the breath of a scene change.

At a time when some are concerned that the industry is going over the top with technology and theatrical effects overtaking their purpose in a production, have we merely seen the tip of the iceberg? Coming up in 1986 we still have to look forward to a galaxy of new shows using all the latest techniquess in lighting technology to be seen on stage.

Some of the extravaganzas we will be seeing are already on the drawing boards prior to entering the competition for the biggest and the best. From the US is **La Cage Aux Folles**, straight from Broadway with its real life backstage settings and Jules Fisher's traversing light booms and associated tricks. For the new Abba/Rice musical **Chess** Michael Bennett directs, with lighting design by Tharon Musser, whose simplistic style can be seen from solitary overhead individual lights along the 'Chorus Line' and also in 'Dreamgirls' where mobile lighting trucks move about the stage area and follow the sets with the ultimate effect of dropping in all the lighting bars to the deck . . . for the dancers to do a routine and dance along the top of them! She has the reputation of being one of the most respected theatre lighting designers in the world today and has probably the longest career since Joe Davis, our own great pioneer in British lighting design, sadly departed at the end of last year.

Reputed to be the largest and most expensive theatrical production piece ever will be **Time**, the ultimate mix of rock and roll and musical/operatic theatre, with a complex LX rig and unique set, complete with all the latest projection, fiber optics, lasers and



luminaires. With design by John Napier and lighting by Andrew Bridge it promises to be a technically and visually exciting show.

The end user has never had it so good—with such a vast choice of good quality products of lights, control equipment and associated accessories. So coming to the end of 1985 with such optimism in our industry, where will technology and lights lead us from here . . . ?

Notes:

1st Para. Part of Richard Pilbrow's speech at 'Showlight 85' in New York.

* Source: Mintel estimate to end of 1984.

Awards referred to in paragraph 10 are the 1985 Evening Standard Awards.

JULIAN WILLIAMS is the editor of the **ALD Newsletter** and works in various capacities in the field of lighting.

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Upstairs to Paradise

John Offord visits First Leisure's "most beautiful discotheque in the world".

Carrying on from where we left off last month and not bothering to count the miles of Tivoli at the Dome in Birmingham, Watford's new 'Paradise Lost' is another venue that will have the local electricity board rubbing their hands with glee.

A staggering £1½ million has been spent transforming the former Bailey's restaurant nightclub into what First Leisure are billing as "the most beautiful discotheque in the world". Paradise Lost has no centre piece as such, like the Dome, but relies on an all-over sophistication of lights and effects. There is nothing astounding in its own right, but as an overall 'experience' from the front door onwards, it is certainly worthy of any quotation John Milton would have penned for paradise. It officially opened on November 15th, and the queue endeavouring to sample the first night's delights extended way back down Watford's Parade.

Paradise Lost is built on two main levels, with the lower one predominantly the action area with the main dancefloor optically designed to 'float' on a series of miniature lakes. Four plush bars are located at strategic points around the dancefloor area, and also on this level there is the Pasta Paradise restaurant and a separate, quiet lounge area with individual sofa seating.

The colour scheme is an attractive combination of light and dark grey, silver and beige and the bar areas, counters, backfittings and ceilings all have the First Leisure hallmark of mirror cladding, enhanced by pinspots and Tivoli inserts.

The upper level is designed for "sophisticated relaxation". There are two high level walkways around a wide centre well that provides spectator viewing of the dancefloor, and a long walkway, with decorated trees, spans the opening. The up-

per dancefloor is located by the spectator walkways, and is close to the point where the rise and fall DJ console arrives. This level of the complex has three bars serving eight different seating areas, plus the a la carte 'Milton's Restaurant'. The colour scheme is warm beige and copper tones.

If there are centre pieces, or talking points about Paradise Lost, then the designers of any new First Leisure complex will always give you something that is a "first", or "unique" to discuss. This time it's the "largest of its kind in the world"—a 20ft. wide waterfall that cascades down from the higher ceiling level, in tiers, to the lower level, where its onward path is to flow under bridges and into the miniature lakes surrounding the dancefloor area. Obviously colour and lighting enhance the effect, and keep you gazing,—and drinking.

The other story is about the "unique" DJ



Paradise Lost, Watford. The ultimate in discotheque sophistication.



Managing director of Zero 88, Peter Brooks, at his "own" Eclipse lighting control with the venue's lighting man, David Parry, formerly lighting jockey at the Camden Palace (nearest to camera).

console which rises "excalibur-like" from the "depths" of a miniature lake and can extend right to the upper floor. This console alternates throughout the evening, serving both floors.

Lighting effects are controlled by a Zero 88 Eclipse 60-way board, and four spaceframes hold the lighting rig. Each of these frames holds a Contra Helicopter, Tivoli features, 16 neon bars on 16 channels, 8 halogen Scanners, and 32 Par 36s. In addition there are 128 ceiling mounted pinspots and $4 \times 6 \times 1000$ par cans on 24 channels for stage effects. On the balcony and bridge are mounted 2 Tricopters, 4 Sound Scanners, 2 Mirrorballs, 6 Scanners and 62 Par 36s. All electrical installation, including effects, was by Lighting Effects of Leicester.

On the sound front, Martin Tasker, that man from the Dome at Birmingham we talked to last month, tripped down the motorway network to build and install the basic sound system, utilising some existing equipment from Bailey's and around the Group, and supplementing with new as necessary. The end result is provided via a 24 channel Soundcraft mixer, a Crest amplification system, Martin Audio speakers, cross-overs,



Paradise Lost—the DJ console serves both levels, and rises "excalibur-like" from the depths of a miniature lake.

BSF Brooke Syren systems and a graphic equaliser. The main dancefloor area has 4 Martin bass bins, 4 Martin philishaves, and 4 Martin horns with JBL drivers. The smaller dancefloor on the upper level is serviced by 2 flown Martin LE200 speakers. The peripheral system and DJ console was installed by Cloud Electronics.

First Leisure is looking for a very wide market to repay its capital investment on the complex, and to bring additional profits to its burgeoning disco empire. Apart from the large population within easy driving distance, promotion is aimed at the capital itself, and even further afield—particularly with the almost-complete M25 within a short driving distance.

You get the feeling Lord Delfont's group have felt the pulse of this part of the entertainment and leisure industry, have read the signs and decided to plough the money in on the main chance. The words "mega-lux", "sophistication", "luxurious" and "unique" appear regularly on all the hand-outs, and when you visit the venues, you come away feeling slightly naff at having to repeat the same terminology.

But if you happen to agree, then why not?

Next in Line

Although *Paradise Lost* is the last of the "new concept" discotheques opened in 1985 by First Leisure—the earlier ones being at Bristol, Oldham, Bradford, Gillingham, Doncaster and Birmingham (2)—the company is set to continue with its high profile activity in this sector of the industry.

Two more existing sites are currently receiving treatment with Sheffield's *Romeo and Juliet* due to reopen early in the new year, and the *Empire Leicester Square* coming on stream in mid-1986.

And there will be acquisitions too. Managing director of First Leisure John Conlan, told L+SI that signature was close on the purchase of three more venues and others were under negotiation. Announcements are expected during December as and when deals are finalised. He was confident that the first of these would be opened under the group's banner in February, March and April 1986 if everything goes according to plan. "Expansion will be very much on the same lines,"

Conlan told L+SI. "We are looking at the larger capacity venues in the 1000-1500 range."

Although fashion in the disco industry is ever-changing, the major building work undertaken is determined on the basis that it will see the venues through at least a 20-year period. "We make sure all the toilets, bars and catering and kitchen areas are in the correct strategic positions so that no major structural change has to take place frequently," he said. So if fashions change, the effects equipment and decor, for instance, can change with the times.

And business at the new First Leisure venues is reported to be good. At Birmingham's *Dome*, featured in our first issue, business is booming on Thursday, Friday and Saturdays, although management have admitted that the Monday night live entertainment needs more time to build up. "But it's on the way," promised John Conlan. And a very encouraging sign is that First Leisure's plush 'Pagoda Park', just one block away from the *Dome*, has actually been increasing on admissions and business since the spectacular *Dome* first opened its doors.



The main dancefloor viewed from the upper level, and showing two of the venue's four spaceframes holding the effects lighting equipment.

The Point Lights Up

UK's first multiplex opens at Milton Keynes.

On November 21 Bass Leisure and AMC Entertainment (UK) Limited, revealed for the first time the interior of Europe's first fully-integrated entertainment centre, 'The Point' in Milton Keynes. The venue, which stands on a site fronting Midsummer Boulevard and opposite the main entrance to Milton Keynes shopping centre, went public just 8 days later when AMC (American Multi-Cinema) multiplex opened on November 29.

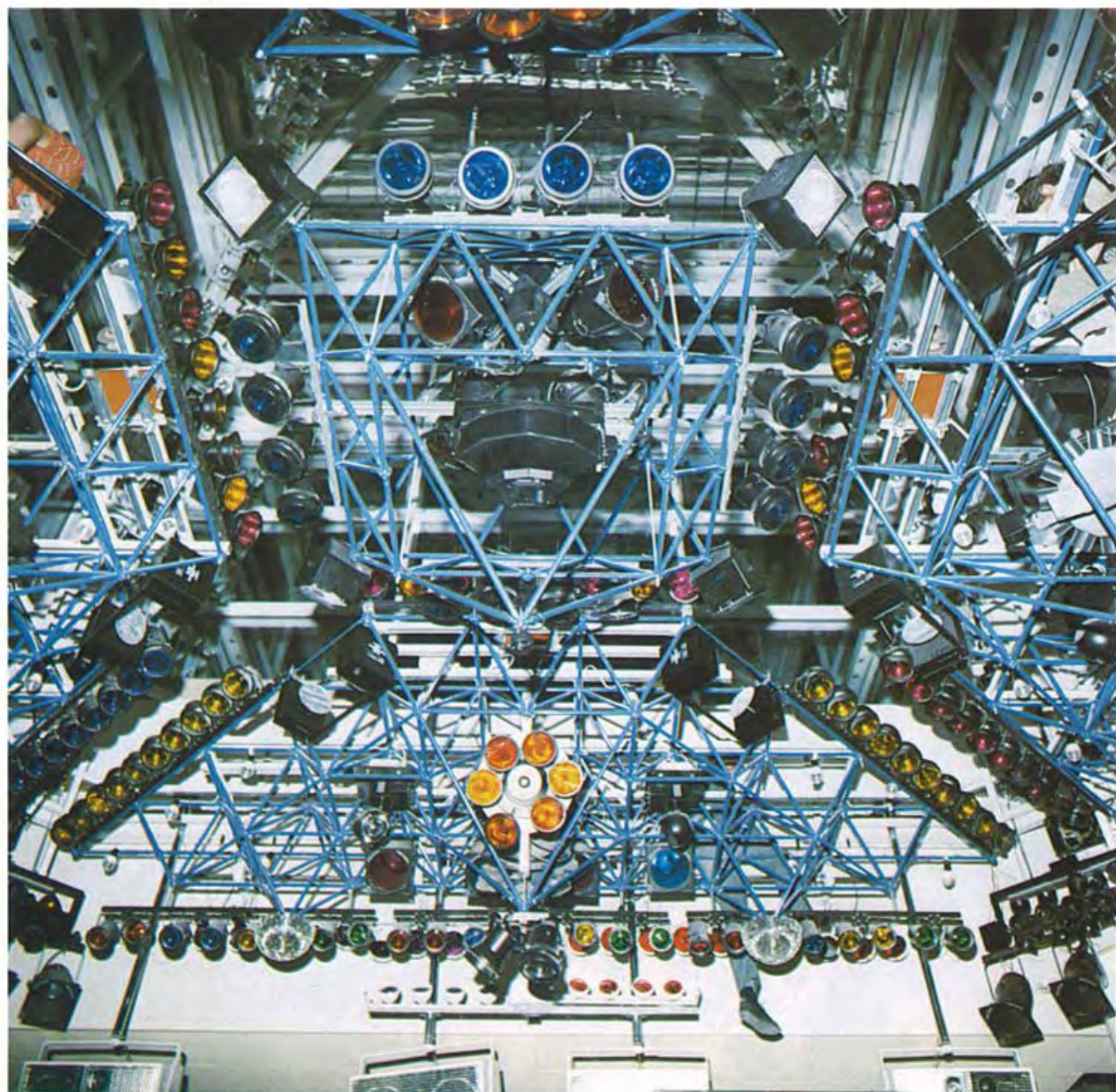
With 10 auditoria and a total of over 2,000 seats, each unit has fully automated projec-

tion facilities, pioneered in the US by AMC. This includes the ability to show the same print of a movie in a number of auditoria simultaneously and enables the management to keep abreast of viewing demands.

Computerised ticket sales, highly competitive admission prices, a complete 'no smoking' rule and a wide range of refreshments will ensure an enjoyable evening of entertainment in Britain's most exciting venue say the owners. Seats are all well spaced and include exclusive drinks rests.

Bass Leisure, who admitted to being sceptical when it was first suggested they join with a film exhibitor to provide entertainment for Milton Keynes, are now convinced that this American formula can be successful in Britain.

The Point is a £7.5 million development that has become a focus in Milton Keynes whilst under construction (work commenced in August 1984) and it gets its name from its shape. Most accurately it should be described as a ziggurat, and beneath its 70 foot high



'The Point'—lighting effects are suspended in a glass cube surmounting the first floor.

glass form there are a host of other entertainment facilities in addition to the integrated cinema complex described above.

There is a total of 70,000 sq ft of floor space, and the venue will accommodate up to 5000 people at any one time. The 10-screen cinema complex is housed in a rectangular section at the rear of the ground floor level. Elsewhere in the building there is the 1,500-seat Coral Bingo and Social Club, a 'club' area able to offer live and recorded entertainment with a capacity for 400 people, a 130-seater restaurant, a 140-seater brasserie, and an American-style bar.

The whole venue was the result of an initiative by Bass Leisure in conjunction with AMC Entertainment Inc. who won the chance to build the centre by agreement with Milton Keynes Development Corporation.

Conceived by Neil Tibbats of Birmingham-based Tibbats and Company, the building was designed by architects and engineers Building Design Partnership, with the intention of creating a landmark for the city of Milton Keynes.

Inviting and colourful by day, imposing and dramatic when illuminated at night, the mirror-sided construction has a superimposed tubular pyramid structure in red that carries solar shields and supports lighting and visual displays, whilst the zigurat shape of the main building allows the introduction of outside cinema terraces at ground and first floor levels. Throughout the building, lavishly decorated and landscaped interiors, designed by Tibbats, create a light and airy environment, making maximum use of natural sunshine and contrast interestingly with the high tech structure.

Occupying the entire first floor of The Point, the Club's 400 sq metre floor space is on three different levels and includes a moveable stage, a dance floor and two bars. High above the floor, effects lighting equipment is suspended in a glass cube within the apex, and it's reckoned the "show" will be visible from as far away as the M1 motorway.



'The Point', Europe's first fully-integrated entertainment centre, in Milton Keynes. The complex comprises a restaurant, bar, brasserie, club and 10-screen cinema and bingo and social club.

A mixed programme of entertainment will be provided, aimed at the over-twenties. On summer evenings, the glass doors will be thrown open to give access to the terrace, which is, in fact, the roof of the ground floor of the ziggurat. From here, club goers will be able to have an excellent view of the light show.

Although the Club is primarily a night spot, it will also be available for private hire during the daytime, when the management will be promoting it as a venue for promotions and presentations.

To promote events at The Point, and just to remind you it's a high tech complex, the entrance to the building is dominated by an IGG Electronic newscaster board, programmed to light up forthcoming attractions.

TECHNICAL FACILITIES

Ground Floor Control Module

Audio

- 2 x Technics SL-1200 turntables + Ortofon cartridges
- 2 x Professional Series C/D Players CDP-3000 and Controller CDS-3000
- 2 x Sony Beta Hi-fi VCR SLHF 100 UB
- 1 x BOSE Digital Music System
- 1 x Sony Tuner STS 444ES BL
- 1 x Sony Cassette Deck TCFX 705 BL
- 2 x Broadcast Microphones Shure SM57
- 1 x Radio Microphone Sennheiser

Gaming Machine Area:

- 2 x BOSE 1800 Series II Series Dual Channel Power Amplifier for AWP and AXP areas
- 4 x BOSE 101 Ceiling Loudspeakers

Ground Floor Stage:

- 1 x BOSE 1800 Series II Dual Channel Power Amplifier
- Public Address System
- 1 x BOSE 802 System Controller
- 2 x Pairs BOSE 802 Loudspeaker and Stands
- 1 x Micro HS 200 R Stereo NAB recorder/player
- 1 x CQ HSE Splicefinder/Eraser
- 1 x Micro Rack
- 1 x Formula Sound PM 30 Audio Mixer
- 1 x Studiomaster 24-8-2 Audio Mixer

Video

- 1 x Sony SMC 70 GP Video Image Composer ind-Monitor
- 1 x Phillips Laser Disc Player
- 1 x Sony VTX 100 UB Tuner
- 1 x Sony TXT 100B Teletext Unit
- 1 x Sony TXT 100 UB Viewdata Unit
- 1 x National Panasonic VHS Hi-fi NV 830
- 1 x Sony PV M411CE 4 x 4 Monitor Kit
- 1 x Sony KX20 PS1 20" Monitor
- 1 x Muchworth MWX 7 input 15 output Matrix Zone Access Selector
- 2 x Sony VP 5630 Record/Playback u-matic
- Various Equipment Housing Racks and Desks

Ground Floor

Monitors

- 13 x Sony KX27 PS1 27" Profel Monitors
- 13 x Pairs BOSE 101 loudspeakers
- 12 x Unicol Brackets (for monitors)

Audio System

- Bar Brasserie:
- 2 x BOSE 1800 Series II Dual Channel Power Amplifiers for Bar Brasserie
- 4 x Pairs BOSE 402 Loudspeakers
- 1 x BOSE 402 Equaliser



Entrance foyer of the 10-screen cinema at 'The Point'. The cinema complex, containing 2,000 seats, opened to the public on 29 November.

Restaurant:

- 3 x BOSE 1800 Series II Dual Channel Power Amplifiers
- 6 x Pairs BOSE 402 Loudspeakers
- 1 x BOSE 402 Equaliser

Discotheque

Sound System

- 6 x Pairs TEC FR200 Loudspeakers White Laminate finish with chrome grills
- 2 x Pairs TEC FR200 Bass Cabinets
- 16 x Chrome Grills
- 5 x Harrison P900 Dual Channel Power Amplifiers
- Racks for above
- 3 x Technics SL 1200 MK II Ortofon cartridges
- 1 x Micro HS 200 Stereo NAB Cartridge Player
- 1 x Shure Microphone
- 1 x Sennheiser Radio Microphone
- 2 x Sony Professional Series CD Player CDP-3000 and Controller CDS-3000
- 1 x Formula Sound PM 80 Mixer
- 1 x Formula Sound SE1 Graphic Equaliser
- 1 x Drawmer Limiter
- 1 x Sundholm 2-way Crossover

Schedule of Effects Lighting and Locations

Fixed Outer Frame

- 8 x Nisel BAR 1's
- 4 x Rotamax 6's
- 4 x CR4 VV Wavers

Top Cube

- 16 x Aircraft Landing Lights in vertical rises to each corner.
- 64w 250v. Total 64.

Central Structure—Meroform

- 4 x PAR 64 wide angle Lanterns
- 1 x Coemar Mantra M3
- 4 x Starflash Strobes
- 20 x Golf Ball Wrenco Lines
- 12 x PAR 36/100 watt Pin Spots
- 1 x Neon Square 1500 x 1500
- 1 x Half Mirror Ball
- 2 x Opti-mist Smoke Machines

Side Structures—Meroform

- 2 x CR90 Super Slow Scanners
- 2 x CR36 Super Fast Spinners
- 2 x Nisel BAR 1's
- 8 x Fanlights
- 1 x Sound Animated Solar 250
- 2 x PAR 56 Super Scanners
- 4 x PAR 56 Lanterns
- 4 x Half Mirror Balls
- 4 x PAR 36 Mirror Ball Spots
- 12 x Egg Strobes
- 1 x Harvester 12

(All the above equipment is repeated on all 4 side structures)

Side Structures (Motorised Pieces)

- 2 x Astron 3's to 2 x sides
- 2 x Atobeams to 2 x sides

Lighting Controllers

- Central Structure:
- 1 x Light Processor 818
- 1 x Light Processor 434

Side Structures:

- 2 x Light Processors 436
- 2 x Light Processors 434
- 1 x Light Processors Scene Set
- 17 x MP1
- 5 x MP2D
- 1 x MPX Control Packs
- 5 x Becker Cranes operated by a System Controller move the central and side structures

Discotheque Stage Lighting

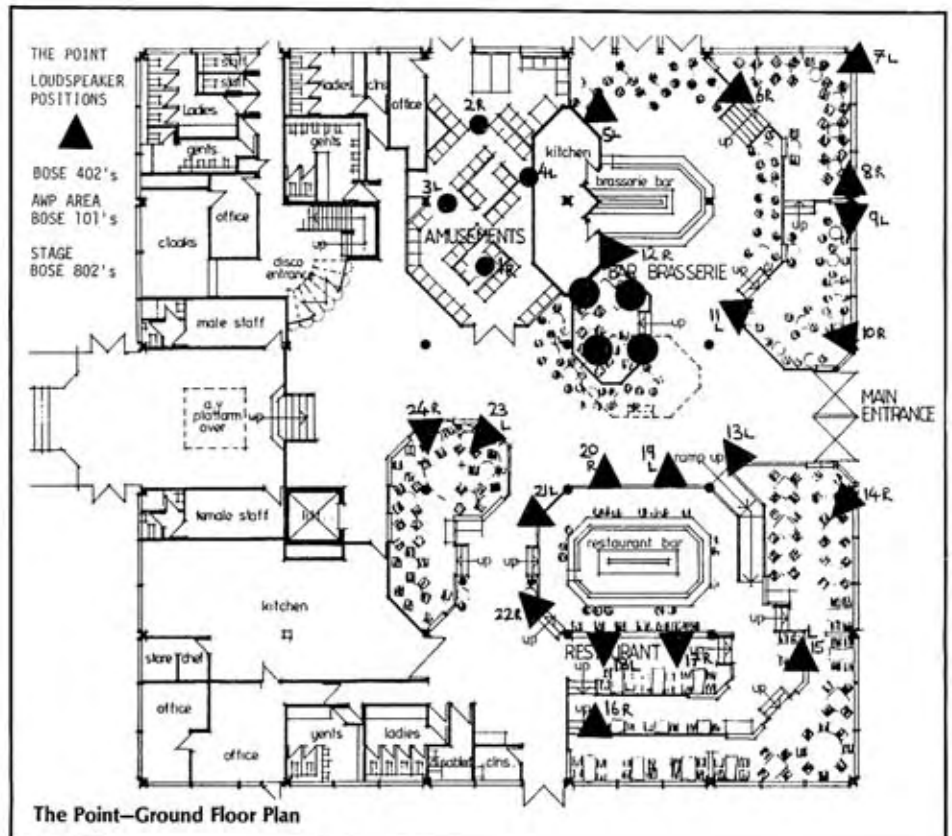
- 16 x Pulsar PAR 56 Lanterns
- 1 x Pulsar Rock Desk to control above

Stage Audio

- 1 x Pair BOSE 802 Loudspeakers
- 1 x Harrison P900 Dual Channel Power Amplifier for stage use only
- 1 x Studiomaster 6-2-1 mixing desk
- 2 x 6 x 10 amp dimming packs for use with Rock Desk

External Effects

- 1 x 28 Module IGG Elite Newscaster Board with 4 Module Newslane. Controlled by IBM PCXT in AV Module
- 2 x Lucas Marine Display Searchlights
- 220v 1000w Tungsten Halogen Lamp



The Point—Ground Floor Plan

The Direction of Entertainment:

The Point Milton Keynes

DESIGN, SUPPLY AND INSTALLATION
OF DISCOTHEQUE AND INTEGRATED
AUDIO-VISUAL SYSTEM BY:

TEC LTD.



In Times Past

John Pick

This Christmas, audiences may well be prepared for comedians to be unfunny, for singers to miss their notes, or for the Principal Boy in the pantomime to be—horror of horrors—an actual living **boy**. They will not however be prepared to tolerate poor sound, mis-cued lighting or other technical problems. The expectation now is that the performance will be technically perfect, though the performers may be pretty terrible. As managements everywhere know, nobody bothers to complain about indifferent performers, but as soon as anything goes **technically** wrong . . .

It was different in past times. The lighting of the stage in the eighteenth century—from candles in chandeliers, in footlight floats, in wing-ladders and in concealed traps in front of the proscenium—half blinded the audience placed too close to them, and offered those sitting further away a **danse macabre** of grotesque shadows that mocked the gestures of the players. Playgoers particularly detested the footlights—which had been imported to the British theatre after the Restoration—and which gave an eerie corpse-like appearance to the actors' faces: 'that tormenting line of lamps at the front of the stage which wrongs everything it illuminates'.

Playgoers and critics however never harped on the unnatural appearance that such lighting gave to their favourites. They accepted the wierd flickering world of the stage, and they accepted the bawling of the players as they attempted to shout above the conversations of an audience that was lit almost as brightly as they. They knew too

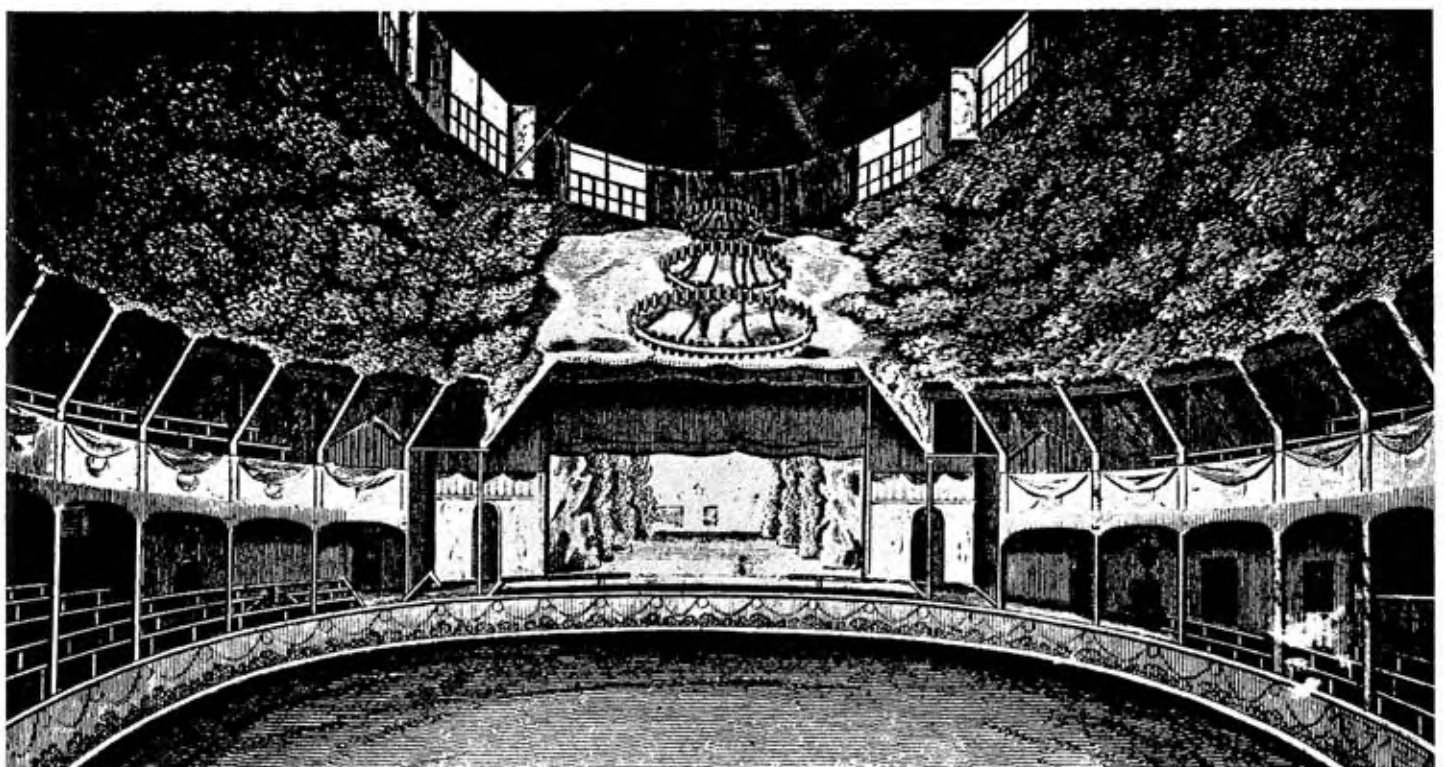


In the wings during a Victorian pantomime.

that the theatre—built of wood and containing hundreds of unguarded naked lights—were also places of great physical danger. Fires were common, and in the late eighteenth century it was the dancers, with their highly inflammable costumes, that suffered the greatest carnage. Most traumatic of all however was the great fire of 1794 which consumed the great amphitheatre at Astley's, which had become the home of pantomime, and in which many of the

horses used in the shows were killed.

Such holocausts hastened the introduction of a safety curtain for theatres, and one was proudly introduced at Drury Lane in 1794. At the end of the performance on the 21st April, an actress with the company, Miss Farnen, stepped down to the audience and informed them that such a curtain had been installed and they were now completely safe from fire. The curtain was indeed lowered, and to appreciative applause, a stage hand



Astley's in about 1792, just before it was destroyed by fire.

tested its security by beating down upon it with a hammer.

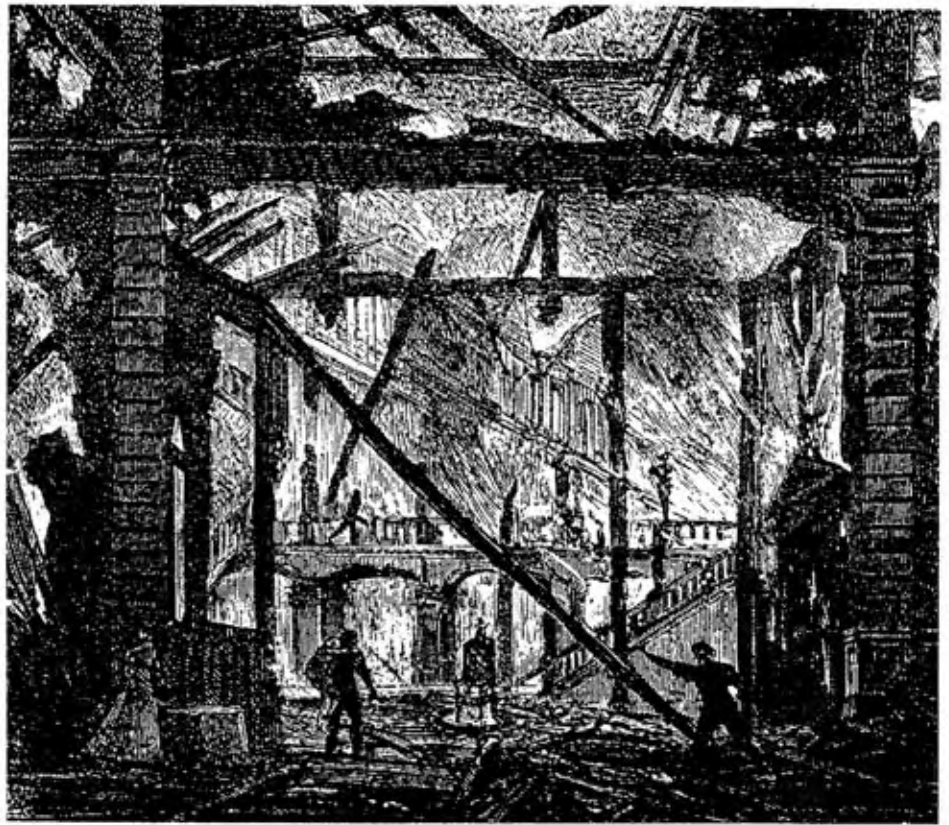
Fifteen years later the theatre burned down. And, as the other patent theatre at Covent Garden had burned down the previous year (with the loss of twenty three fireman's lives), the search for a safer method of stage lighting was given considerable impetus. It concluded on the 6th September 1817 when the old Lyceum theatre was the first English theatre to be lighted entirely by gas. The stage had been fully lit by gas a month earlier, and on that momentous evening lighting by coal gas was introduced throughout the stage, foyers and auditorium. **The Times** approved the innovation:

'Since our last visit the interior of this elegant theatre has been lighted with gas round the boxes; the lights are enclosed and festooned with cut glass from one to the other. (It is) as pleasing to the eye as it is tasteful and elegant.'

But the same writer went on to point out that Covent Garden was still more elegant and that more spectacular coloured effects were still to be found in the higher class displays in the pleasure gardens of the capital.

Gas was however rapidly introduced in many of London's theatres, giving a light described by **The Examiner** as being 'as mild as it is splendid—white, regular and pervading.' It was generally felt to be more constant in intensity, and capable of being better regulated. Nevertheless some theatres reverted to older techniques. The small Olympic theatre, in Wych Street, went back in 1822 to the use of wax candles, and the Haymarket was lit in the 1820s by oil lamps.

In general, entertainments could now be both more realistic and visually a good deal more exciting. As that notable theatregoer Henry Crabbe Robinson remarked in 1823 of



Fire effects viewed from the auditorium (Moynet, 1873).

a show in Drury Lane:

'The scenery is so beautiful that I actually cared nothing for the execrable stuff of **words** by which it was accompanied.'

Spectacle could now grow apace, and the nineteenth century pantomime, with its transformation scenes and magical effects, nevertheless was eventually well enough lit for its comedians to gain their effects by facial expression as much as by elaborate knockabout comedy. Grimaldi, the star of Sadler's Wells pantomime in the decades before it had gas lighting installed, was driven to an early death by the demands of stage tumbling. Dan Leno, star of Augustus

Harris' Drury Lane pantomimes later in the century, was able to rely upon the twitch of an arched eyebrow and the broad infectious grin for his comic effect, confident such detail could be seen by the whole house, although, sadly, it gave the little comic no longer a life.

It was Henry Irving who perfected the use of gas lighting as an art, and it was he too who insisted upon the dimming of the auditorium lights throughout the performance. Irving gave a great consideration to side lighting, and lighting through coloured



Henry Irving in 1876. Irving perfected the use of gas lighting as an art.



Grimaldi in Mother Goose.



Dan Leno as Mother Goose in 1902.



An "electric scene" in the pantomime of 1883-4 at the Theatre Royal, Manchester. This illustration appeared in the 'Mechanical and Steam Users' Journal', 16 (1884).

"For the pantomime of 1883-4, the management of the Theatre Royal in Manchester connected their fairies to the main supply. At this theatre the auditorium was lit by a "sunlight" of 200 electric lamps, though the stage had only coal-gas. For the climactic effect, the stage lighting was extinguished and the power supply of the auditorium sunlight switched to the fairies on stage."

Terence Rees in 'Theatre Lighting in the Age of Gas'.

gauzes. In his theatre, the Lyceum, Irving so constructed the gas lighting that it was entirely controlled from a 'Gas Board' in the prompt corner. Effects varied from the starkly melodramatic lighting of *The Bells* to the intricately staged *Faust*, which caused his stage crew such nightly palpitations. His use of gas was complemented by his use of

limelight (which had been developed as a stage lighting technique in 1816), and, even after the introduction of electric lighting in theatres in London he seems to have stayed with the older techniques, claiming that gas and limelight gave softer, subtler stage effects.

Electric lighting was first introduced into



Lighting the footlights.

theatre auditoria in the 1870s, but the first theatre to be fully lit by electric light was the new Savoy theatre in 1881. A total of 1200 bulbs were used throughout the theatre and, at a performance of *Patience* on 11th October, D'Oyly Carte walked on to the stage at the matinee, holding a bulb in his hand which, after he had warned the audience not to be alarmed, was illuminated, followed by the complete electrical illumination of the entire building. He was 'cheered to the echo'. Some commentators however found the illumination of stage and auditorium too much, and urged the D'Oyly Carte management to follow the innovation of the Lyceum's darkened auditorium.

By the end of the nineteenth century audiences were in general so much more respectful and attentive that little use was made at first of the new techniques for amplifying sound. Popular entertainers of the music hall and pantomime were proud of their abilities to be heard without any of that 'new fangled gadgetry', and it was not until the 1920s, when the new broadcasting service was encouraging people to speak or sing rather than more *solto voce*, that microphones came to be generally installed in variety theatres. By then too most of the old trappings of nineteenth century stage lighting had disappeared—though variety theatres often retained a system of footlights, and the fairy queen in the pantomime was still likely to be lit by a lime follow spot.

It was almost certain too, all those Christmases ago, that there would be virtually no recorded music in the theatre. Musicians could still be afforded and the cheapest pantomime would have its own live orchestra.

Attention was focussed still upon the players, not upon the technicalities. It is sad that in our own time, the skills of the lighting and sound technician have become so great, so dependable and so seductively appealing that they have more appeal to the audiences than do many performers. Not a few entertainments, from the humblest pantomime to *Starlight Express*, will at this festive season be packing 'em in because they have those twentieth century star attractions, Spectacular Lighting and Shattering Sound.

Note:

The illustrations of *Fire Effects* (Moynet, 1873) and the *Electric Scene* at the Theatre Royal Manchester appear in 'Theatre Lighting in the Age of Gas' by Terence Rees, and published by the Society for Theatre Research @ £7.50. The Society is based at 77 Kinnerton Street, London SW1X 8ED.

The illustration 'Lighting the footlights' is reproduced from 'Theatre and Playhouse' by Richard and Helen Leacroft and published by Methuen. The source was the Eyre scrapbook in Suffolk County Records.

Other illustrations, original source unknown, are from the archives of the editor.

JOHN PICK has researched the history of theatre administration for many years, combining his active interest in popular entertainment with his work in management studies. He has taught in such different venues as Moscow, New York, Hong Kong and Athens and has recently been awarded the Chair in Arts Administration at City University, London—the first such award in any UK University.



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With this most advanced, yet surprisingly low-priced system, you can link your stage lighting to a micro-computer and program all your cues long before the curtain goes up.

The Intelligent Interface, which is fast becoming the first choice amongst schools and colleges, can handle up to 36 channels of dimmers at once.

Better still, it comes complete with a cue controller and essential software for the BBC Micro, to provide you with a lighting board that has the performance of a memory system many times its price.

Even Scrooge wouldn't argue with that.



PULSAR
Lighting for Effect.

ON TOUR

Keith Dale

Sade's current British and American tour forms the basis of this month's feature article as Catriona Forcer takes a look at her subtle lighting production and designer Mike Cooper.

Supermick dominate the 'Equipment on Tour' column with a selection of their current work whilst Entec have been busy with miles of cable in the Bay of Muscat, Oman. Back in England Theatre Projects and lighting designer Andy Bridge are currently involved in what would appear to be a very large presentation for Ford at Castle Ashby.

Sade Tour

Catriona Forcer talks to Lighting Designer Mike Cooper at Brighton Centre

It was the day that Sade's album 'Promise' had gone straight into the album charts at No. 1 and the audience at the Brighton Centre were all too willing to be charmed by her smooth, velvety voice and her dark, sultry style. It was another excellent performance to add to her already immensely successful tour, and Mike Cooper had produced a stylish show to compliment the sophisticated artiste.

He explained to me his way of approaching lighting design and also described what he had been doing recently: "I've been lighting a great variety of gigs from very small clubs or colleges to large tours like Sade. I've done bands like Orange Juice, The Farmers Boys, The Roaring Boys and some smaller ones. I'm actually a freelance designer who also owns his own equipment (a small lighting rig) so I am able to do lights for new, smaller bands and to go along with them as they develop. This can be a bit frustrating as you're limited budget wise, but at the same time it becomes a challenge to do the best with what you've got. It is just as difficult to do a good and interesting show with 300 lamps as it is with 36 lamps: it is just a difference of scale. Obviously with a larger band and bigger budget you can experiment more.

"I approach my lighting design by trying to compliment the music wherever possible. I like to be able to research the songs and their lyrics because I hate to see lights which are meaningless to what the songs are about. For example one of Sade's songs 'Maureen' is about a friend of hers who died—but you wouldn't know that unless you had studied the lyrics. It is sad, but she does sing about the good times that they had had together. I hope that my lighting reflects this mood.

"To me the music comes first, and I believe that the lights must not detract from it or the band. I enjoyed doing Sade's lights because,

as her music is so subtle, they were a great challenge.

"I think most lighting designers have a trademark—but I'm not sure what mine would be! As I've looked after the lights for such a variety of bands, the shows that I've been involved with have all been so different. I try to personalize each band. With Orange Juice I had a brief for a stark light show so I used very simple colours—green, purple, blue and white—all set up so that each lamp was on an individual channel. Perhaps the fact that I use a lot of individual channels is my trademark, and I admit I like the flexibility and the option of more movement they give you. I have also been blamed for using a lot of dimmer channels.

"I use a lot of ray lights because they are very fast to react and because they are light in weight you can use many on one rig. Original Par lamps are 110 volts, so normally you pair two together to work off 240 volts. But you can use 240 volt ray lamps and have an individual lamp on one channel. They are also only 500 watts, as opposed to 1000 watts, so when you're on smaller gigs that haven't much power you can have more lamps up which are actually drawing less current.

"You can also do little tricks with ray lamps. With Sade I have 8 of them forming a sort of fan like 8 aircraft lights; you can also have them individually on or off. I like my lights to be versatile, so I aim to make the maximum



Sade in concert at Brighton Centre.

use of each individual light.

"Sade is good to work for in that she will say clearly what she likes or dislikes. On her first tour, most of the design was left to me—and I had more freedom to do what I wanted. Now she has been able to step back and think more about the overall production. If an artist has specific ideas, it can sometimes be good because as a designer you're basically working from things you know, things you know work, or things you've seen work and have liked.

"So someone can give you new or abstract ideas you may never have thought of yourself. I think that a designer has to interpret what an artist wants, and then find out whether it is technically feasible. I also find that it's good to work with other designers as they stimulate you, and your ideas.



Mike Cooper.

"I like to have the opportunity to experiment, and if my ideas do not turn out right for a particular band I'll save them until I have the opportunity to use them well. We did some weird things with The Farmers Boys like having the lead singer playing behind a white gauze screen for a couple of numbers.

"Luckily I like all sorts of music, and I don't think there are any bands I wouldn't work for. I used to do some of the early punk bands like The Vibrators and The Tourists. It's a pleasure to work for a band like Sade's because they are interested in their visual presentation. Some bands think that lights are just a way of being seen whereas others spend a great deal of money on their light production, and possibly waste money, when so much can be done with a small amount of equipment if it's done in the right way. I like to get involved with all aspects of the visual presentation including the set design and construction.

"One band I would like to light is King, because Paul King is visually a very interesting person. He seems to have ideas about how he wants to present himself, and the music is quite interesting. Another is U2, because I was once doing the lights at The Marquee when they played there, and the atmosphere was electric. It would be fun to look after the lights for a big heavy metal band who have a large budget!"

Equipment on Tour

Elaine Page

5 November to 3 December 1985.
Supermick.
Tel: 01-221 2322.
Lighting Design: Stephen Hall.

Lamps/Trussing:

36 x 24 Pre-rigged Thomas box truss.
(c/w 168 Par lamps)
10 x assorted Leko's
16 x ACL's.

Effects:

2 x Patt. 252 effects project.

Desk (Control Board):

Avolights 84 way.

Dimmers:

1 x 72 way Avolights Dimming System.

Spots:

2 x Long throw Lycian's.

Paul Young.

28 November to 18 December 1985.
Supermick.
Tel: 01-221 2322.
Light Design: Phelina McMahan.

Lamps/Trussing:

48 x 20' pre-rigged Thomas box truss.
(c/w 216 Par Lamps).
48' Pre-rigged Thomas box truss (front truss)
(c/w 72 Par Lamps).
64 x ACL's.

Desk (Control Board):

Avolights 84 way.

Dimmers:

2 x 72 way Avolights Dimming Systems.

Spots:

7 Short throw Lycian's.
2 Long throw Lycian's.

Boomtown Rats.

6 November to 25 November 1985 (Italy).
Supermick.
Tel: 01-221 2322.
Lighting Design: Pierce Ellis.

Lamps/Trussing:

2 x 40 Pre-rigged Thomas box truss.
(c/w 120 Par Lamps).
32 x ACL's.
20 x assorted floor lights.

In addition to designing the lighting for the Sade tour Mike Cooper has been designing for the Fairport Convention World Tour. "I worked several years for Fairport Convention when they were really big, and they have kept in touch with me. Their tour goes out during the Sade tour so a stand-in is looking after it for me until I can take over," he explained.

The Sade British tour finishes with two nights at the Albert Hall, London on December the 1st and 2nd before it flies off to the States. A European and world tour are planned for early next year.

KEITH DALE, our correspondent for "On Tour" was born in Brixton and moved about various parts of South London before establishing the world's first psychedelic Grand Prix Circuit at the age of eleven—using sweetpapers on toy racing car headlights. His interest in rock lighting developed during his final year at school, and the original version of 'Celco' started whilst he was in college.

After deciding the Ministry of Defence Electronic Quality Assurance Directorate didn't offer much of an opportunity for lighting design, he left after a three-year stint and went on the road with 'The

Desk (Control Board):

Avolights 60 way.

Dimmers:

1 x 60 way Avolights Dimming System.

Ford—Castle Ashby.

2nd December to 20th December 1985.
Theatre Projects.
Tel: 01-622 4272.
Lighting Design/Production: Andy Bridge/Imagination.

Lamps:

236 Par 64's.
160 Raylights.
24 Leko's.
34 Patt. 23's.
6 Patt. 243's.
17 Patt. 743's.

Effects:

16 Mirror Balls.
25m Arcline.
Thousands of feet of festooning and fibre optics.
8 Patt. 252's.
24 CCT Coloursettes.
8 Silhouette Strobes.
7 400w U.V.s.

Desk (Control Board):

Celco Series 2 90 channel.

Dimmers:

2 72 way Avolights dimming system.

Spots:

3 Patt. 765's.
1 Short throw Lycian.
2 R+V Beam Lights.

Bay of Muscat, Oman.

Entec.
Tel: (09328) 66777.
Lighting Design: Klages.

Lamps:

40 x Molefays c/w Colourframes and Barndoors.
92 x Par 64 Floorlights.
4 x 6 Lamp bars.

Desk (Control Board):

2 x 6ch Custom desks.

Dimmers:

2 x 60 way Avolights dimming systems.

Pleasers' in September 1978.

Since then it's been a mixture of work for Celco and touring the world on lighting design, but with the responsibility of marketing the company's products he doubts whether much more touring will come his way, due to lack of time.

He told **L+S** his interests were "all forms of entertainment and lighting, particularly classy rock lighting—and any theatre work by David Hersey". Despite pressure of work, and success of his company's products, his ambition is still to "get out of the office and tour a.s.a.p."

Information for 'Equipment on Tour' welcome

please post details to:
Lighting + Sound International
12 The Avenue, Eastbourne,
East Sussex BN21 3YA.

The Optikinetics Story

Beam Effects Light Up the Way Back

John Offord visits Optikinetics' Huntingdon and Luton production units.

Ten years of continual success from start point in 1970 took Optikinetics to a £1½m turnover situation and international recognition by the end of the decade. The company could look back on ten hyperactive years, having risen from the rough work benches of a tumbledown farmhouse near Hatfield to the crest of the booming disco market.

However, this early success proved to be short-lived. Immediately they turned the corner into the eighties the bad news of the recession knocked the operation sideways and almost out of existence. Turnover plummeted to unforeseen levels, falling to almost a third of the previous high. Staff numbers were halved, working weeks shortened, and



The Solar 250 is the hub of Optikinetics comprehensive effects system and is recognised as the world's most adaptable effects projector. Inset above is the Sound Animated and a basic 250 with a Crystal Pulse attachment, taking advantage of the latest in liquid crystal technology to produce startling effects.



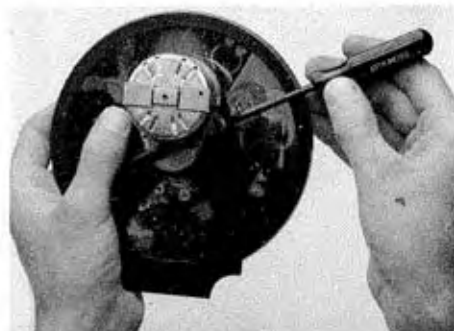
Neil Rice, Chairman of Optikinetics Limited.

by 1981 only Neil Rice of the original founding directors was left to see things through.

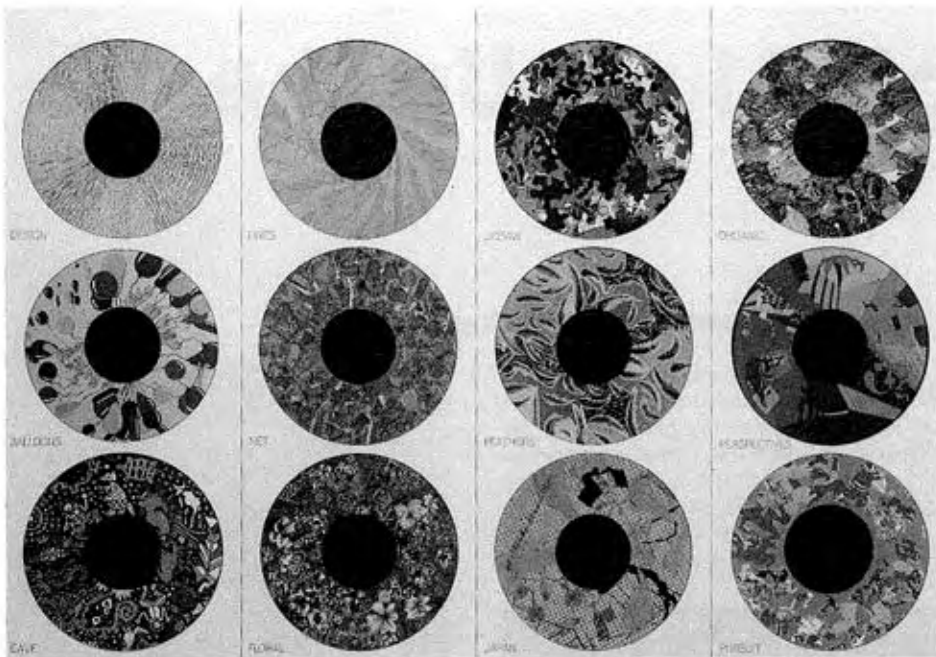
But Optikinetics weathered the storm, obvious from the fact that we're writing this feature, and now have a more comprehensive line-up of products to shout about, just five years after the original celebrations and with one corporate heart attack in between.

The first products to come out of the old farmhouse were effects wheels, and at that time Rank Tutor 2 projectors were re-worked to hold the Optikinetics accessories. After customising many such machines they asked Rank to let them purchase the basic chassis at the relevant stage of production, but a firm "no" gave them the incentive to manufacture their own projector.

The legend of the 'Solar' was the result. Today the Solar 250 is the work-horse for the industry, and it is the direct descendant of the original 100 model. And it is one of life's lovely ironies that it was a fresh look at the potential of the Solar that began to change the fortunes of Optikinetics during the dark days of 1982.



The majority of Optikinetics 6" Effect Wheels are designed for use with the Ultra Slow or 1/3rpm Wheel Rotator, whilst other speeds may be used for Beam, Distortion or Spektrflash wheels, and sound animated effects.



A typical selection of 6" effect wheels available from Optikinetics, reproduced from the company's catalogue.



The Cassette Autochanger accepts any four Optikinetics 3" Effect Cassettes.

Colin Freeman, managing director of the company, joined Opti in 1981, at the urging of Neil Rice, to become UK sales manager ("the rep"). "One of our customers put forward an idea to me for generating a laser-type beam with the effects projector. I came back to the factory and knocked up a prototype which we tried out and 'saw it to be good'. Neil took over and developed the idea with our team, and out of it came beam cassettes and wheels," he explained.

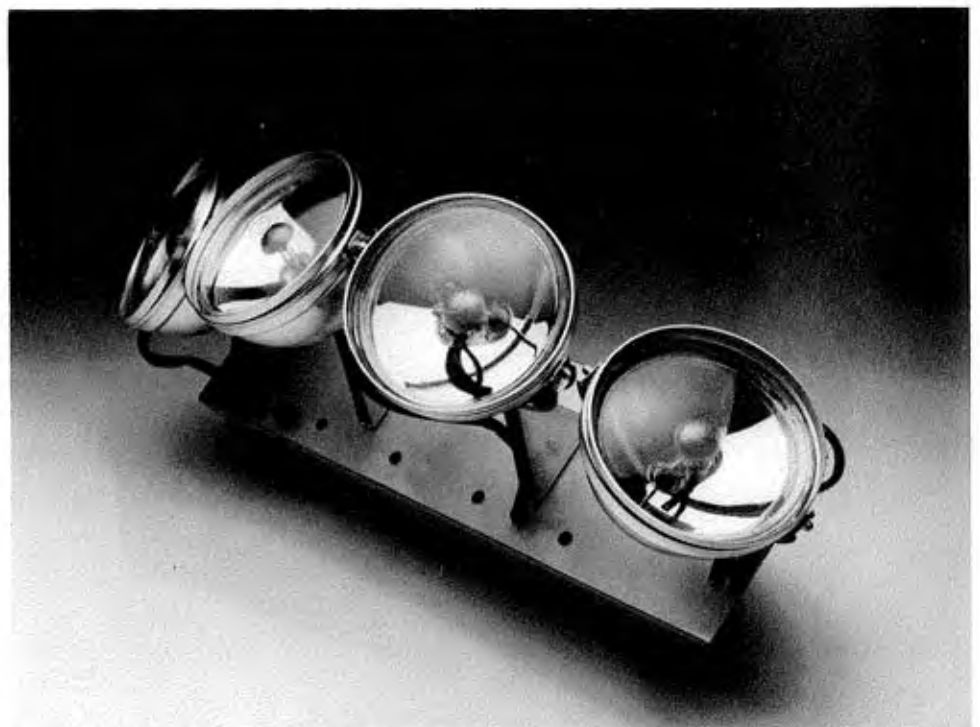
They were simple, cost-effective to produce, and most important of all gave everyone the psychological boost so much needed at the time. Alongside this, develop-



Optikinetics managing director Colin Freeman presents the finished product ready for despatch—in this case a Sound Animated Solar 250.

ment was going ahead on the Soundscanner and the Fanlite, and all these products were officially launched at the BADEM show at the Bloomsbury Crest in September 1982 to high acclaim.

They turned the corner during 1983. The success of the beam effects also helped boost projector sales, and the Soundscanner soon made its presence felt. And 1983 was the year of touring exhibitions—the Opti team toured as many as they could find to spread the word. It was back-breaking work, but turnover was now on an upward path, and the range of products gave an in-depth strength lacking in earlier years.



The Soundscanner (left) and the Fanlite (right) were both launched at the 1982 BADEM Show. The scanning unit works through 360 degrees and is designed to animate a light beam to music. A simple connection from any sound source between 1/2 and 1000 watts will activate the Soundscanner and up to three slaves. It is available in Par 36 or Par 56 versions. The Fanlite comprises four 30 watt 6 volt Par 36 lamps mounted in an arc which can be swivelled individually through 90 degrees.



Optikinetics UK sales representatives Julie Garton keeps the company's products in the limelight through their network of main dealers.

During 1983 they held their first "seminar" in association with one of their dealers and this idea developed to such an extent that they found the need for a structural system that was light-weight and easily assembled, but robust enough to take the weight of equipment and heavy usage—in effect a touring grid to show off and sell their product range.

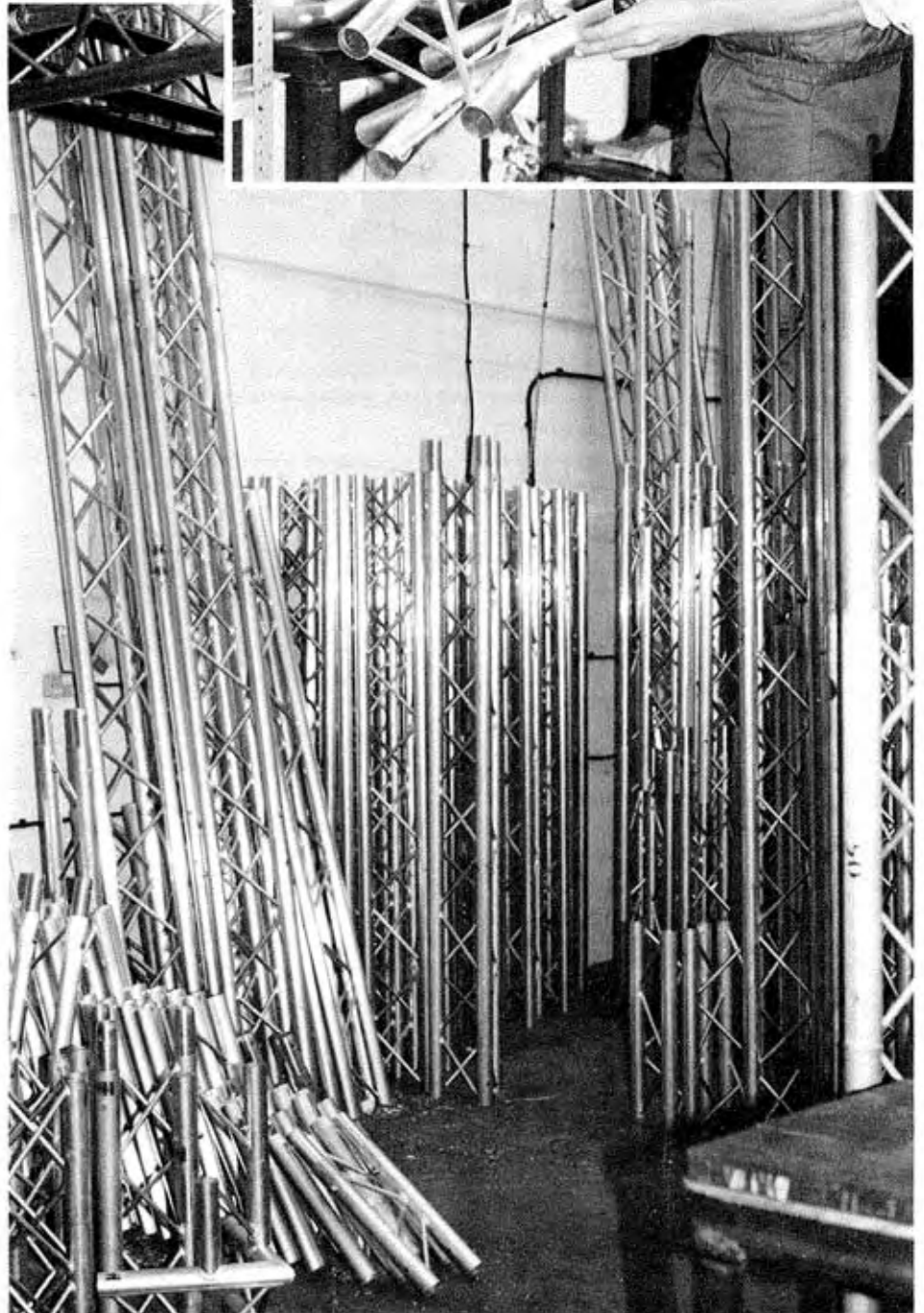
It turned out that as much interest was shown in their specially commissioned aluminium structure as in the equipment they were out to sell, and the spaceframe idea developed to such an extent that by the spring of 1984 they had decided to set up an in-house manufacturing facility.

Which is exactly what happened, and Trilite was launched at the PLASA Light and



Production director Ted Jarvis pictured in his Huntingdon office working on a special "one-off" order for Trilite.

Chris Robinson, production manager in charge of Trilite, checks a junction section.



Trilite awaiting packing and despatch—there are nearly 50 standard parts available in the range. The product has been the subject of a "test to destruction" operation at the Structures Laboratory at Cambridge University Engineering Department—an exercise that cost the company over £5000 in equipment and fees. Full technical specifications and details of the complete range is provided in a comprehensive brochure available from the company together with colour code cards for customised finishes.

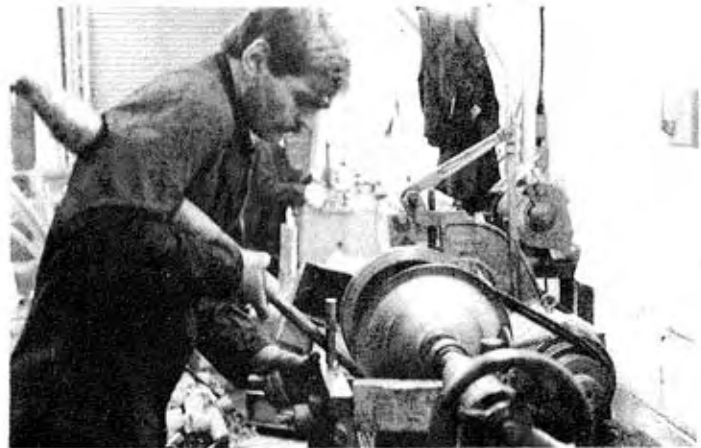
The Huntingdon end . . .



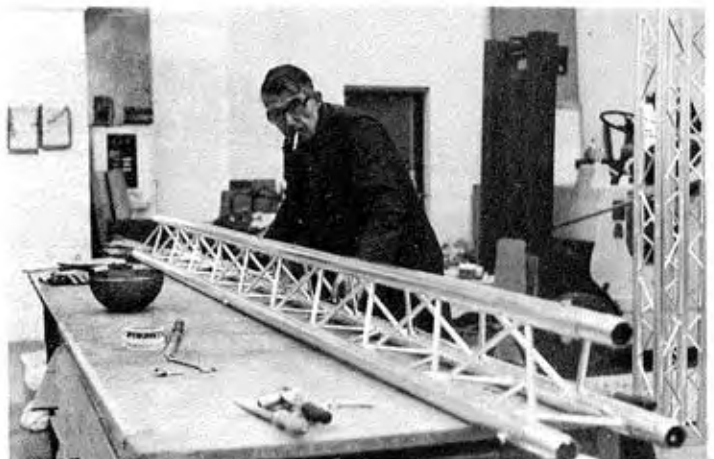
A high speed tungsten saw cuts component parts for Trilite at Optikinetics new production unit in Huntingdon.



Ray Turner at work welding spars in a 5m length of Trilite. Aluminium welding requires both special skill and equipment.



Another highly skilled operation. Metal spinner Tony Coley working on the rear half of a Globe Strobe.



A Trilite section is inspected prior to packing.

The Luton end . . .



The Luton storeroom holds over 600 different component parts for Optikinetics products.



Final assembly of the Par 36 4 way Helicopter.

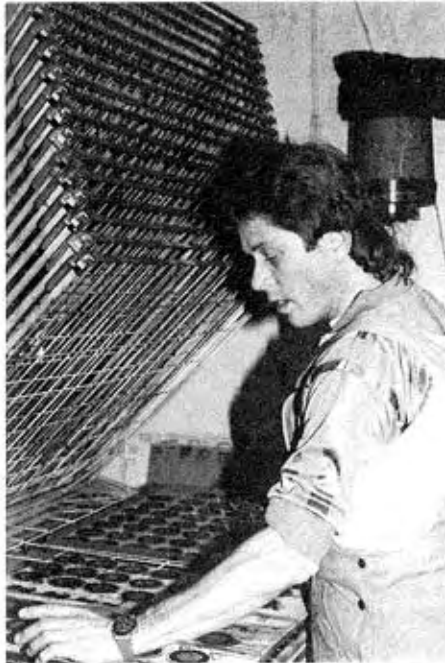


The Cassette Autochanger during production.



The Autochanger nears completion.

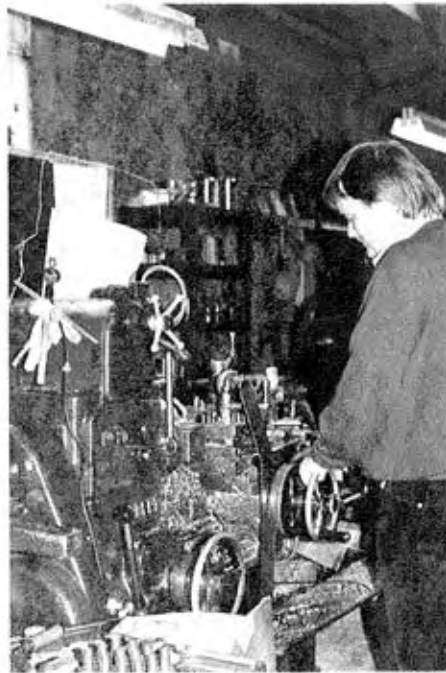
Sound Show in September 1984. The product already accounts for around a quarter of the company's turnover, and the production area has had to be enlarged three times within twelve months, with two new units in Huntingdon now almost totally given over to manufacture of the system.



Creative and screen print manager Martin Burwood inspects a production batch of 3" effect cassettes. All effect wheels and cassettes are manufactured at Luton.

The raw parts for all Optikinetics products are made in the various Huntingdon workshops, and they are then shipped out to paint shops as necessary before completing the journey to Luton where assembly, packing and distribution takes place. Also in Luton is the silk screen and design section under Martin Burwood, where the effects wheel and cassettes are produced.

Colin Freeman thinks of Optikinetics as a "professional company making professional products for professional people". Certainly



A capstan lathe producing helicopter drive pulleys. The company has its own toolmaking facility in this original Huntingdon factory unit.



Finished product: Optikinetics Par 36 4 way Helicopter. Separate lamp and motor circuits, tilt adjustment, external fusing and gel retention colors are features of the product.

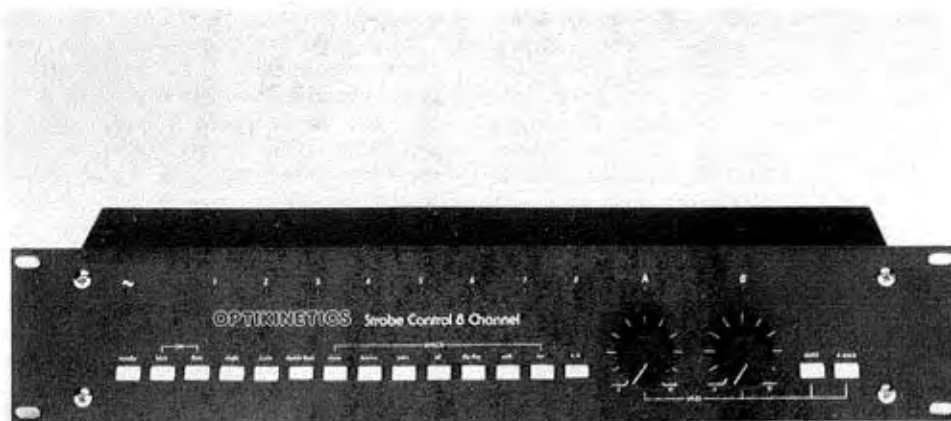
the impression is one of a team effort, even though various operations carried out at different venues and with an hour's driving time in between can't be easy.

Export sales are now back to their "true proportion" of 60 per cent of total business, and as this feature was in preparation, Neil Rice was mid-way through a world tour drumming up future markets. With total turnover now back to the late seventies high, and three new products in research and development under the direction of Phil Brunker who rejoined the company in October 1984, the future looks very exciting.

I can't release details of what those new products are, but sufficient to say that one has been worked on for five years, and all are major items "in line with Optikinetics traditions".



Solar Rotators reach the end of the production line.



The 8 channel Strobe Controller was launched in September 1985 as was the Globe Strobe (right).

Financing the Three-Month Fashion

The pulling power of a major new disco lighting effect will begin to decrease only a few weeks after it has been installed at a venue, and by the time a few months has passed, it will have become an accepted fact—part of the furniture.

Alistair Peacock of Astron Hire, a company based at Tarporley in Cheshire, set up a scheme in late 1984 to provide a solution to the problem. He is able to offer clients the opportunity of a rental scheme where discos and clubs can hire major effects for three-monthly periods, provided they've agreed to at least a year-long contract. Apart from the original installation charge, there is no addition to the basic hire charge when the effect is changed over.

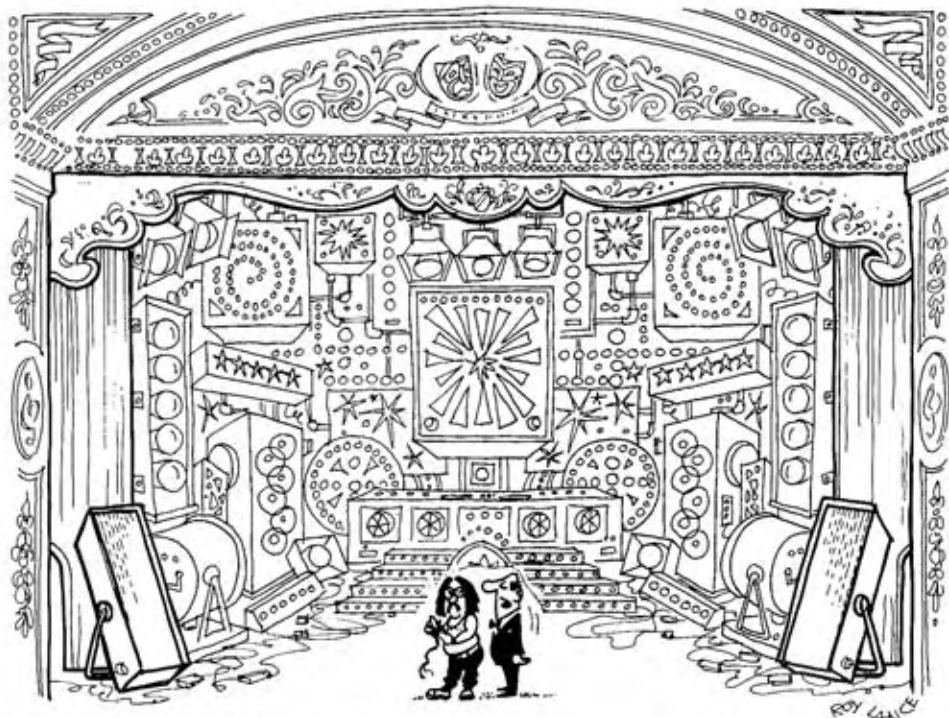
For four effects within the price range when new of £1000-£1500 each, the rental charge inclusive of 24-hour service, and maintenance or replacement as necessary, is between £100-£125 per month, with a once-only installation charge of £185.00.

More recently the company developed the concept, and has extended it to include hire facilities for complete lighting schemes, rigs, or general lighting equipment for periods of not less than 12 months. Charges vary according to type of equipment, because some items of equipment require more maintenance than others. The budget guide given to prospective hirers is based upon the formula of £40 per month per £1000 value of equipment, plus insurance and maintenance.

These arrangements were set up after he saw the obvious need for financial assistance in this sector of the entertainment industry, and the great difficulty in finding the right sort of finance, even if you could find it at all. Obviously, he carried out his own checks, and with an intimate knowledge of the business can ask the right sort of questions when needed.

L+SI spoke to Alistair Peacock about the background to the situation and what advice he would give to would-be equipment hirers or purchasers.

"When a client approaches us to arrange hire purchase or a leasing deal, several factors have to be borne in mind. Most finance houses regard the entertainment trade, and in particular clubland, as a pack of wolves with persons of considerable bespoke disrepute in control. Therefore their willingness to even consider an enquiry is a long way down the preferred customer list, and high on interest charges. Second, the availability of H.P. or leasing depends upon the goods themselves in that they must be leaseable. In other words, they must be readily identifiable with engraved serial numbers; they must be easily recoverable in default situation and must have both a resale value and available purchaser/market. They must also be capable of lasting the period of the finance.



"I know how excited the Choral Society were about your spectacular lighting accompaniment to the Hallelujah Chorus, but you've spent our entire entertainment and technical budget in one foul swoop on those new-fangled gadgets advertised in *Lighting + Sound International*."

"Most H.P. or leasing companies will not lease intangible items such as labour or installation, but it is true to say some do turn a blind eye to the subject from time to time. On occasion a supplier will tell us they have an excellent finance house that deals with all their enquiries and accepts all sorts of grey area deals. This is also true, for generally the lessor or financier has built up a relationship with his agent; however should one of the contracts go wrong, especially a grey one, just watch the fur fly. In most cases the door is well and truly shut for the future to all!

"Finally, on H.P. or leasing it should be remembered that the finance house operates on a very small profit margin over a long period at high risk and generally they will require more severe conditions as the value of the loan rises. It is common to expect bank references (good for the sum and purpose), two trade references, and a UAPT credit check for unpaid debts and judgements (High Court judgements are not recorded and reported in the same manner as the County Court). They will also generally request a current balance sheet, profit and loss account, and cash flow forecast to mention but a few. H.P. or lease can generally be provided quite easily for sums up to £3,000, above £3,000 to £10,000 and the going gets harder, after £10,000 'tough'. With personal guarantees and cross guarantees now surfacing, the rules vary for client status or 'worth' and for private individuals, T/A's, Partnerships and limited companies.

"On the subject of finance schemes, too often we are approached at a late date by a client who is running out of money and who now needs to finance some of his purchases. In many cases he knew this could happen at the outset. Unfortunately he will by now have secured a brewery loan, possibly some

bank overdraft monies and outside loan, will have arranged H.P. or leasing on odd equipments and by this time is possibly "overgeared" as the pundits say. At this stage any rescue can be very time consuming with poor results—mainly due to the fact that a pecking order has been established by the present line of creditors, none of whom wish to move an inch. If however, the project is discussed in detail at the beginning, the problem of security to the lender can be reasonably settled, and a financial package prepared. This does however mean that the borrower, whether individual or company, will have to prove his 'worth' ('worth' being what you are worth in cash if you sell everything), and provide a business proposition in writing with cash flow forecast and or balance sheets.

"It has proved in our experience that many of the propositions are badly prepared, with lack of foresight or market research. This does little for the prospect of raising money, and those contemplating raising funds for say a new restaurant or club would be well advised to have the project appraised and or a proposition prepared by a company that knows and understands the requirements of the lender—even if it does cost money.

"And there is a final warning! There are a lot of so called professional companies and individuals offering to raise more for you, in most cases for a price, very few of whom succeed in producing anything, apart from their own invoices. It has taken us eighteen months to find just a few highly professional companies who can deliver the results. In general you would expect to pay something in the order of 2% commission for a £500,000 loan with an arrangement fee possibly in the order of £250. But take good advice first."

Forthcoming 'Major' Attractions at Avitec



Superbly powerful beams of light from this new range of fittings now available for the first time in the UK, and only from Avitec!

The near parallel light beams are produced from specially designed reflectors and quartz lamps within PAR56 lanterns. Lamp life is an outstanding 2000 hours on the ten lamp units and 1000 hours on the six lamp units, and lamp failure indicators are standard on all units. The all aluminium construction makes light work of mounting, and the range of bars, pyramids and frames is equally at home creating impact in any club light show as it is for stage and rock lighting.

Full details on the exciting Major lighting fittings in the new Avitec 85/86 catalogue available NOW.

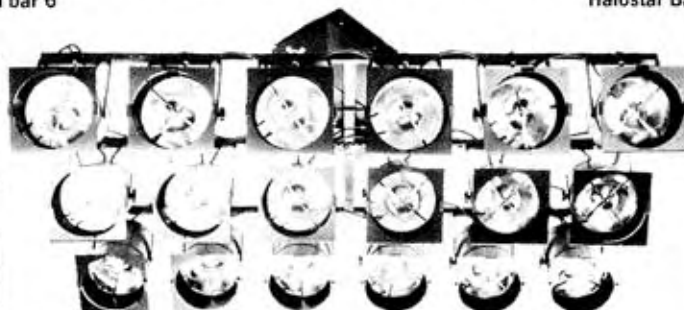


Powerbeam bar 6

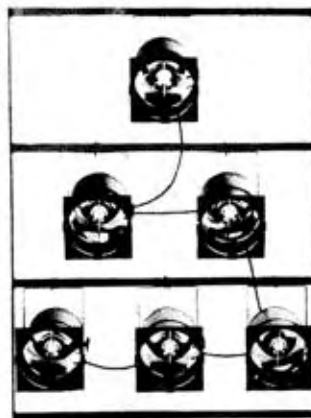
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Turbosound TSE in production



Announced in the November issue of *L+SI* (Equipment News, page 56), the 3 components of the new TSE series are pictured above. They can be used separately or the 'TurboPoleKit' is available to mount the TSE-111 at the optimum height above either of the bass units as shown.

Now in full production, the company recently announced a good response from the products' first showing at the recent A.E.S. Show in New York with a large number of orders being placed.

All Turbosound products will now be distributed from the company's London office at 202/208 New North Road, N1 telephone 01-226 0099.

Primo Microphones from Studiomaster

Studiomaster have just announced that they are now the sole official distributor for Primo microphones in the United Kingdom.

Primo are a Japanese company based in West Germany and are one of the largest microphone manufacturers in the world. Many of the major microphones currently available, retailing under their own tradenames, are actually manufactured by Primo.

Through Studiomaster, Primo are providing a complete range of semi-professional and professional microphones including Dynamic, Condenser and Electret Condenser models.

For further information contact Studiomaster, Alcock Works, Chaul End Lane, Leagrave, Luton, Beds LU4 8EZ telephone (0525) 221331.

Lee Filters Introduce Polarising Filter Range

Lee Filters have announced a major new addition to their range—a set of polarising filters for use on lights and cameras to eliminate reflection.

The system works by managing the waveforms of light travelling to and from a reflecting area in such a way that the reflection doesn't show on film. Lee .006" polarising light filter is manufactured from a tough triacetate material, which has stronger handling qualities than regular acetates, and is available in sheets sized 19" by 19", or 19" by 50".

Polarisers for the camera are made from 0.3" thickness butyrate and are offered in nominal 4" and 6" squares, with other sizes available to special order. According to Lee Filters, the new polarising filters are an important addition to their range, making available yet another solution to a longstanding light management problem.

... and a new grade of Tough Spun Diffusion Material

Following an extensive programme of research into spunbonded polyesters, Lee Filters have added a new grade of Tough Spun diffusion material to their comprehensive portfolio of light control media.

This new product—Lee Quarter Tough Spun—complements the company's existing Full—and Half-Spun materials, and extends the performance capabilities of the range by giving a new and very subtle level of diffusion.

Lee say they decided to introduce the Quarter Spun in response to significant levels of demand from distributors and end users, generated by the success of the original grades. Quarter Spun is available at the same price as existing grades.

The product is manufactured from spunbonded polyester sheet, comprising continuous filament polyester fibres which are randomly arranged, highly dispersed, and bonded at the filament junctions. The straightness of the fibres gives a tight overall structure. This combination of physical properties gives the material high tensile strength, outstanding tear strength and toughness, together with excellent dimensional stability.

For further information on both products contact: Lee Filters Limited, Central Way, Walworth Industrial Estate, Andover, Hants. telephone (0264) 66245.

Pulsar's Monster Strobe (bigger than a Jumbo)

Pulsar have announced the introduction into their range of a new "blockbuster" strobe, the Monster. With three times the power of the already powerful Jumbo, the Monster utilises the patented Pulsar strobe circuitry to produce an absolutely devastating effect.

The 28600 measures 280mm in width, height is 360mm, and depth 185mm. It weighs in at 6 kgs.

Full details of Pulsar's Strobe range and all other effects lighting equipment is detailed in the company's new 40-pp all-colour catalogue. Contact Pulsar Light of Cambridge Limited, Henley Road, Cambridge CB1 3EA telephone (0223) 66798.

Slave Packs from Multiform

Complementing their Multipac dimmable slave power pack, Multiform Lighting of Uckfield Sussex have announced full availability of their 4 x 1kW zero-voltage switched slave power pack, the Switchpac 4x1.



Switchpac 4x1

Fitted in a 9" x 9" x 2" case suitable for electrical installation, the Switchpac has four high impedance low voltage control inputs, which can be adjusted from 3 - 15 volts to suit almost any controller provided with a low voltage D.C. slave output. It is also provided with a 'remote disable' input which acts as a master on all four channels, and an external D.C. supply.

Designed primarily for switching 240 volt resistive and inductive loads, the unit is fitted with a separate power input to the triacs allowing it to switch 24 volts A.C. directly if required.



Multipac 4x1

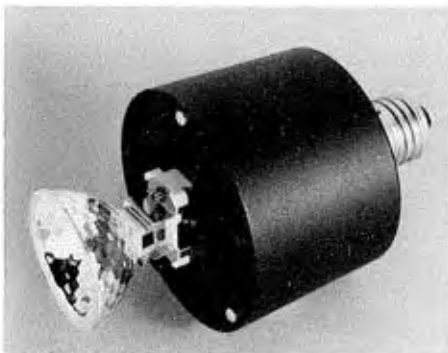
Multiform have also announced an improved version of their Multipac 4x1 dimmable slave power pack which can be used with most types of inductive load including neon. This unit provides similar facilities to the Switchpac but with the added ability to dim the lighting from zero to full power.

The Switchpac retails at £70 plus VAT, and the Multipac at £120 plus VAT. Full details available from Multiform Lighting, Bell Lane, Uckfield, Sussex TN22 1QL telephone (0825) 3348.

Switching to Savings with Low Voltage

Newcastle-upon-Tyne's recently refurbished Jubilee Club recently switched over to low voltage miniature tungsten halogen spotlights, and typifies the savings that can be made by the change. The Club installed 24 Thorn EMI downlight adaptors in existing fully recessed downlights and a similar number of 28W 2D recessed fittings. The lighting level has doubled compared to the old 150W PAR 38 lamps, with reduced power loadings and maintenance costs.

Thorn EMI's Lightstream range covers 20 to 75W ratings in narrow, medium and wide beam widths. Due to their efficiency they can normally be used to create the same lighting effects as a PAR lamp at about one-third of the wattage. In other words 150W PAR lamps can often be replaced by 50W low voltage lamps. The lamps do away with hot beams, thanks to their dichroic reflector coating, so equipment is not damaged and customer and staff discomfort is reduced. The equipment available for them extends from sleek track fittings with neat attachments to tiny downlights. Effects of differing character and poise can be created, some emphasising sparkle others eliminating backware glare or altering the beam pattern. Colour filters are also available.



Thorn EMI Lighting's Downlight Adaptor.

Particularly useful is the Downlight Adaptor. This unit can convert conventional reflector lamps to low voltage tungsten halogen lighting. The unit screws directly into a standard downlight socket giving instant aesthetic and power saving benefits. Applications are extensive in foyers, corridors, hallways, offices etc.

New Matrix Controller and Dimmer Pack from Pulsar

Pulsar's new Matrix system comprises a Matrix Controller and remote Matrix Dimmer Pack. The equipment can be used for a number of combinations, giving some fantastic effects for dance floors, wall and ceiling and other two-dimensional displays, say the company.

The Dimmer Pack controls up to 5 amps per channel of any type of load. The unit controls output on 4 live channels and 4 neutral channels. Normally the unit would be connected to a Modulator IV and a Matrix Controller. The Modulator delivers four channels of control to the dimmer pack, while the Matrix Controller directs the output of the dimmer pack either to channels 1-4 or 5-8. Thus the unit delivers voltage either to the X-axis of a display or to the Y-axis. In addition the Matrix Controller can direct outputs to a combination of X and Y, creating a Z axis which enables block patterns to move diagonally across the display. A further subtle effect is created by the partially-lit lamps on parts of the display which are only addressed on one axis.



Jubilee Club, Newcastle-upon-Tyne.

The Matrix Controller allows the operator to select output to the following combinations:

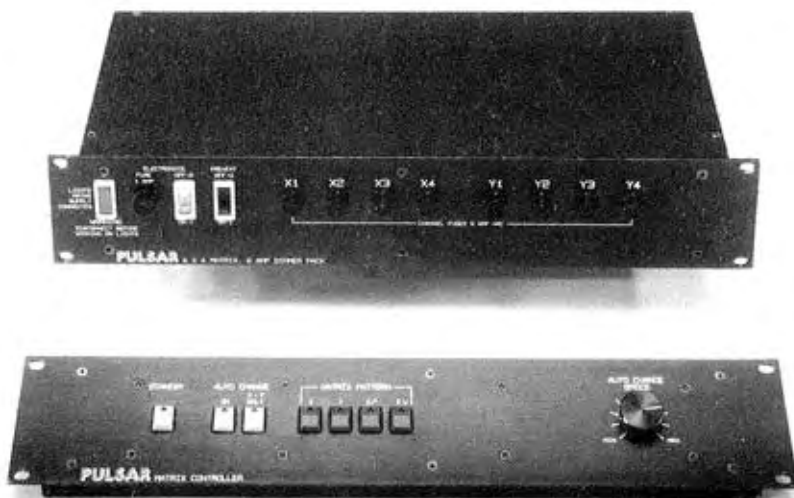
- X axis
- Y axis
- Z1 axis (tracing diagonal from bottom left to upper right)
- Z2 axis (tracing diagonal from top left to bottom right)
- Autochange between X and Y (with programmable speed)
- Autochange between X, Y, Z1, Z2 (with programmable speed)

The dimmer pack may be controlled by any low-voltage controller operating a 0-10v output. The Modulator IV is ideal for this: several packs can be

used together—2 Packs makes 8×8 display possible, 3 packs a 12×12 . All 8 outputs can be remotely addressed direct instead of by the Matrix controller, making it possible to use the computer-generated displays fed through the new Intelligent Computer Interface.

This new system combines the best combination of features possible, say Pulsar, with full dimming (not just switching), completely expandable to any size of display, X, Y and Z axis control, computer interfacing is possible, and it is reasonably priced.

If you want to find out more contact Pulsar Light of Cambridge Limited, Henley Road, Cambridge CB1 3EA telephone (0223) 66798.

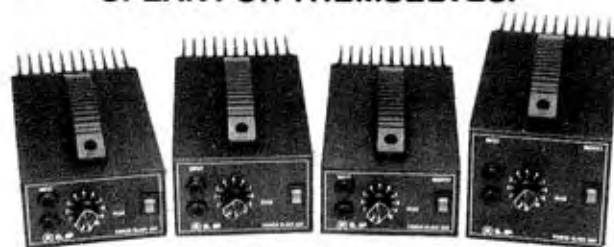


Pulsar's new Matrix Controller and Matrix Dimmer Pack.



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RANGE OF SLAVES	US12	US22	US32	US42
Output Power - full impedance	60W rms into 4Ω	120W rms into 4Ω	60W rms into 8Ω	120W rms into 8Ω
Total Harmonic Distortion (Typical) @ 1KHz	0.01%	0.01%	0.005%	0.005%
Frequency Response (-3dB)	15Hz - 50KHz	15Hz - 50KHz	15Hz - 100KHz	15Hz - 100KHz
Signal to Noise Ratio (DIN AUDIO)	100dB	100dB	100dB	100dB
Input Sensitivity	500mV rms	500mV rms	500mV rms	500mV rms
Input Impedance	100KΩ	100KΩ	100KΩ	100KΩ
Weight in grammes	410	520	420	650
Size in mm	120 x 78 x 40	120 x 78 x 50	120 x 78 x 40	120 x 78 x 100
Fuse A.C. 20mm Fuse Speaker 20mm	A/S 500mA Q/B 5.5A	A/S 1.25A Q/B 3.15A	A/S 500mA Q/B 2.0A	A/S 1.25A Q/B 2.5A
Weight	2.5 Kilo	3.3 Kilo	2.5 Kilo	3.7 Kilo
Size	7cm - H, 12cm - W, 29.5cm - L	8cm - H, 12cm - W, 29.5cm - L	7cm - H, 12cm - W, 29.5cm - L	11cm - H, 12cm - W, 29.5cm - L

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section comprising the phantom power on/off switch (48v) followed by a 30 dB pad which operates on the microphone input without affecting the input impedance. A phase reverse, mic gain (+20 to +60 dB) and mic/line select switch follow together with a line trim control (-10 to +20 dB gain) which at present is screwdriver operated—one of my few niggles with the console.

The equaliser section provides a versatile 5 band control of the audio signal. A high pass filter provides either a roll off at 50 or 200 Hz or 10 Hz when not selected with a slope of 12 dB per octave. Shelving filters at 12 kHz and 50 Hz complement two quasi parametric midband filters (Q 1.5) all providing ± 15 dB of control. (MFH1 500 Hz to 10 kHz, MFL0 50 Hz to 1 kHz). An EQ defeat switch completes the section.

The Auxiliary sends comprise six separate busses. Auxiliary 1 is independently switchable pre or post EQ, whilst Aux 2 is switchable pre or post fade. Aux 3 and 4 or 5 and 6 are switched together pre or post fade. The Aux 3/4, 5/6 switch allows the lower two Aux controls to either send to Auxiliary buss 3 or 5 or 4 or 6. The pan control follows together with channel mute "in place" solo and peak warning indicator (5 dB below clip).

The routing section comprises a simple momentary action push switch and LED indicator whilst the channel fader completes the module. Line and inject sends are provided together with an electronically balanced inject return.

The Master Module provides the usual facilities: power supply voltage check LEDs, monitor, aux masters, oscillator (50 Hz to 10 KHz), talkback (selectable to aux 1, aux 2, aux 3,4, aux 5,6, groups and masters and direct output for comms). The push to talk switch automatically dims the monitor (15 dB). The routing switch and two 100mm faders complete the section. Inject points are provided on the two master sends via the rear panel.

The subgroup module, in the form of a stereo pair, has two monitor sections per group both switchable as tape return (four tape returns can therefore be monitored per subgroup). The upper monitor section also has 2 band EQ (50 Hz and 10 kHz shelf filters). Fader reverse and full routing capability provides for example additional equalised and fully routable inputs during record or mix down. Inputs can be sent to aux 1 and 2 pre fade and aux 3 and 4 switchable pre/post fade.

The upper monitor signal can be routed to any subgroup or master via the digital routing system. Additionally the routing switch can be used as an "inplace" solo facility. Fader reverse, reverses the action of the channel group fader with the level control. The lower monitor section provides aux 1 and aux 2 sends pre fade and Aux 3 and 4 switchblade pre/post fade—the latter sends being switchable to busses 5 and 6. The subgroup routing controls the patch for the subgroup stereo pair or is used for interrogation. Each group channel has unbalanced send and balanced returns.

So having described the basic construction and facilities of the console, we now look at the heart of the CM4400—the digital routing facility. The 'brains' of the system is a Z80 A microprocessor with its ancillary Ram and Ep-Rom. The unit contains a stand-by battery supply capable of storing data for 60 days should the mixer not be connected to a power source. An override switch is provided, so that if a fault occurs, basic operation can still be maintained with all inputs and auxiliaries being sent to L and R master outputs.

The control unit stores up to 30 complete set ups or patches of desk routing in addition to the current one—selecting between them being a simple operation of the keypad.

As with conventional mixers, routing is a question of sending particular or designated signal sources to their required destinations. Potential signal destinations are the group modules i.e. master and stereo pair, whilst potential sources are the channel input modules and the pairs of tape returns in the group modules.

The method of setting the patches is very straight forward—first a destination button is pressed with it LED illuminating. The routing buttons on the desired sources are then pressed with their LEDs illuminating. The patch is then set up.

Once a complete patch is set up, the routing in the desk can be simply inspected by pressing source or destination buttons. When a source button is depressed, the LED on all its destinations are illuminated and likewise, when a destination button is pressed, the LEDs on all its sources illuminate.

The control section has a small keypad with the usual numerical keys and 5 further control keys and 2½ digit LED display. A reset button is also provided together with a LED which illuminates in the case of microprocessor or operator error.

To recall patches, the desired patch number is keyed in and the 're-call' button pressed. Similarly patches are stored by depressing the store button. A very useful feature is that patches can be inspected without bringing them into action by pressing 'interrogate'. It is also possible to sequence the memories or set ups or trip between them with just one command.

The digital routing can also obviously be 'muting' by not assigning a channel or group to a master in a particular memory.

The connection of a suitable personal computer to the RS232 interface brings about a further quantum leap in terms of control—though appropriate software is required to translate the system machine code to the PC operating system. Currently software is available in Basic for Commodore 64.

The addition of a PC and monitor allows a track sheet to be viewed. Routing can of course also be set up via the keyboard and write to any memory without affecting the live memory in use. Indeed you can actually interrogate the live memory or re-write it without any effect on the original live memory.

Perhaps one of the most powerful aspects of the digital routing and computerised control is the ability to lock the control into external sync signals such as SMPTE time code—allowing the desk to automatically set itself up in readiness for the next frame or scene etc.

Although to date the CM4400 has found most of its application in recording or A.V. Studios, at around £13,000 it is not out of reach of the budget for may live sound venues and theatres. The ability to control large groups of signal inputs—microphones, sources or effects at the touch of a button or sync pulse could bring about a minor revolution to live sound.

Peter Mapp BSc MSc MIOA MInstP MInstSCE AMIEE

Close Up



The Soundtracs CM4400.

Thanks for the Memory!

At first glance the Soundtracs CM4400 mixing console would appear to be just like many other professional modular consoles on the market ranging in its simplest form from a 1-2-2 configuration to a maximum frame size of 32-12-2. However, closer inspection of the console shows the normal array of routing switches to be absent, replaced instead by one push button per channel and a small keypad and display adjacent to the Master module—the routing being completely digitally controlled.

This facility coupled with the more standard but well executed features, make the CM4400 an incredibly versatile mixer which should be equally at home with live sound mixing as it will be in the recording studio or AV production suite. The ability to remotely control the routing via the RS 232 interface eg. with a suitable personal computer or via a time code generator or other suitable synchronising/control signal provides a versatility and flexibility not previously available within the conventional mixer price range.

Before looking at the routing control and switching in more detail we will take a brief look at the other features of the mixer. Essentially it breaks down into 5 modules: input, master, subgroup, routing and miniature patch pay (optional) together with a rack mounting external power supply unit.

The input module (1U wide) accepts both balanced microphone or line inputs. Input impedance is 4k 4 ohms for the microphone and 10k ohm for line. Input headroom is quoted as 26 dB.

Taking the controls in order from the top down, firstly we have the input

PLASA: Going for Growth

Two years ago, PLASA dropped its old name which reflected our firmly rooted origins in the 'Discotheque Industry'. Although this met with some criticism at the time, the use of creative lighting and sound reinforcement now crosses into so many market areas, not only in the entertainment industry, but into the communications, information technology, leisure, advertising and P.R. industries also.

The Committee of PLASA, which mainly consists of members who have watched this industry grow for ten years or more, felt that we had a responsibility to both our membership and their existing and prospective clients, to run an association that consisted of companies who have a totally professional service and run their operations professionally in terms of financial control, marketing and integrity.

Gone are the days when the original Badem Association fell over backwards to accept members. Whilst PLASA is keen to build up its membership, our standards of acceptance now are higher than ever, because we want our buying public to feel assured that they are dealing with a company that they can rely on to deliver a reliable, value-for-money product, on time, and with back-up if things go wrong.

In our attempts to increase market awareness, we launched this magazine which is distributed internationally to key personnel within the industries mentioned.

Fill in the form!

In addition, we are sponsoring a number of overseas trade exhibitions during the coming months, and are looking forward to major growth within our association and our industry in general.

If you are a company whose interest lies solely in one small sector of the market, or in simply getting a discount on an exhibition stand once a year, then maybe membership of PLASA is not right for you, but we would be very pleased to see you at the exhibitions, and to have your support.

If, on the other hand, you are a company or individual with products or services you are proud to be associated with, want to expand into a worldwide, multi-million pound market, and can meet our membership criteria, then I genuinely believe that

membership of PLASA will help you to achieve those goals.

Please contact the Association's general secretary **Roger Saunders** at 1 West Ruislip Station, Ruislip, Middlesex HA4 7DW, telephone 08956 34515 and he will gladly send you an application form. I look forward to welcoming you as a full associate member early in the new year.

Peter Brooks,
Chairman, PLASA.

ShowTech 86, Berlin

The wide-ranging ShowTech event will take place in the Exhibition Grounds and in the ICC Berlin from May 13-15, 1986. It looks like becoming a bi-annual, the first was held in 1984, and it endeavors to satisfy everyone involved in the promotion of events, from stage equipment to props and from safety equipment to ticket sales, across a spectrum from stage shows to broadcast and television.

Contact information is given in our regular Exhibition Diary.

PLASA and Photokina 1986

The Government have again offered financial assistance to BPEG to provide subsidised space and stands at Photokina in 1986. Once again there will be separate groups of exhibitors in each hall subject to a minimum of six companies wanting a specific hall.

For full details and the necessary application forms contact PLASA general secretary Roger Saunders at 1 West Ruislip Station, Ruislip, Middlesex HA4 7DW telephone (08956) 34515.

Entertainment 86 at the BIC

Bournemouth International Centre is the venue for Entertainment 86, the only entertainment and arts management convention in the UK. This is the fifth such event, the first being held at Harrogate in November 1981, and it brings together those who run local authority, state subsidised and arts centre venues across the UK and the companies and organisations who supply and service them. The event takes place from 4-6 February.

The range of exhibitors includes venues of all kinds, concert agents, promoters, producers, box office companies, seating suppliers, printers and lighting and sound companies. The BIC's main Windsor Hall will be the site for the Exhibition, and conference sessions will be held in the Tregonwell Hall and Stour Room. All late night entertainments will be held in the BIC and include a charity casino, fun events in the Leisure Pool and a huge array of lunch-time, evening, and late-night entertainment.

The Entertainment 86 colour broadsheet gives full details of the event including Exhibition information.

There are a few stands left in the Exhibition Hall, but potential exhibitors are requested to contact the organisers immediately for details of any space that may be remaining by the time this issue of L+SI is published.

A fully descriptive colour broadsheet is available on request from John Offord Publications/Exhibitions at 12 The Avenue, Eastbourne, Sussex BN21 3YA telephone (0323) 645871. Ask for Sandra Rowe or Ann Holland who will be pleased to help you.

Admission to the event is free (trade only), and tickets will be inserted in the January issue of this magazine.

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One New Show—Two New Venues

Club Pub and Catering Show moves to Manchester and a new one goes to Glasgow.

Despite, or perhaps because of, this year's Pub Club and Catering Show being "the biggest and best so far", organisers Iain Macfarlane Exhibitions have just announced that they are moving the 1986 event to the new G-Mex Centre in Manchester.

It will double the space available to exhibitors and have the advantage of being in one big hall. According to Iain Macfarlane this is the main reason for the move from Blackpool where they've promoted the show for the past three years, although the fact that Manchester is a regional centre with far better access has obviously played a big part in the decision.

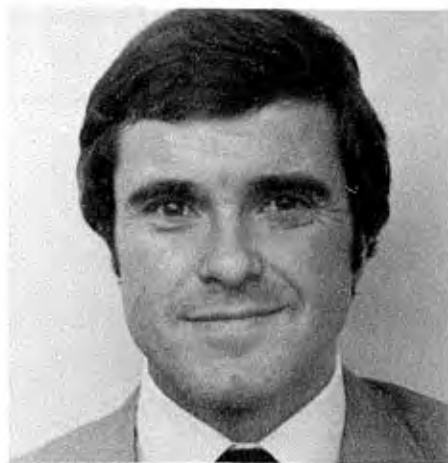
He was very confident about Manchester as a venue: "It will rival the NEC in many ways. Night life, clubs, theatres and hotels are all close, with G-Mex actually in the city centre". The 1986 show will have to run to a different format as far as the lighting and sound section is concerned and Macfarlane is currently working on ideas to keep this aspect of the show buzzing. Over 30 such companies were represented in one way or another at Blackpool in October, and the idea of disco-style presentations has been a key factor in the overall success of the ex-



Now nearing completion, the Scottish Exhibition and Conference Centre is very close to Glasgow city centre and motorway network, and will have parking for 3500 cars.

hibition. Dates for the 1986 event are printed in the Exhibition Diary in every issue of L+S.

Also just announced is a totally new show, the 'Scottish Club Pub and Catering Show' which will take place at the new Scottish Exhibition and Conference Centre at Glasgow in June. Iain Macfarlane told L+S: "We have already had a tremendous response from companies wishing to participate, both in the exhibition itself and in the Sound and Light Section. As with our Blackpool Winter Gardens show last month we will be having



Iain Macfarlane

a separate "Tomorrow's Disco Today" in Glasgow which will again be featuring a controlled seminar comprising effects by Laser Systems, Light Engineering, Mode, Optokinetics, Bose, Sound Electronics, SIS, Pulsar, McCormacks, Stardream/SAV, etc. The total value of this amazing display will be in excess of £1 million and will create a quite fantastic response in Scotland."

The show will occupy Halls 2, 3 and 5 and Hall 1 will be used for the disco presentations. And Macfarlane is confident both his Manchester and Glasgow shows will sell out in 1986. "We'll do it because our prices are reasonable," he told L+S.

Exhibition Diary

Salon International du Luminaire

January 9-14, 1986

Paris

Promosalons—French Trade Exhibitions,
54 Conduit Street, London W1R 9SD.
Telephone: 01-439 3964.

Light Show '86

January 12-16, 1986.

National Hall, Olympia, London.
Decorative Lighting Association Ltd.,
Bishops Castle, Shropshire SY9 5LE.
Telephone: (058 84) 658.

Entertainment 86

February 4-6, 1986.

Bournemouth International Centre.
John Offord Publications/Exhibitions,
12 The Avenue, Eastbourne, E. Sussex BN21 3YA.
Telephone: (0323) 645871.

Frankfurt Music Fair

February 15-19, 1986.

Frankfurt Fair Centre Frankfurt, West Germany.
UK Representatives: Collins and Endres,
18 Golden Square, London W1R 3AG.
Telephone: 01-734 0543.

ABTT Trade Show

March 20-22, 1986. Riverside Studios, London.
Association of British Theatre Technicians,
4 Great Pulteney Street, London W1R 3DF.
Telephone: 01-434 3901.

USITT

March 19-21, 1986.

The Hyatt, Oakland, California.

David Hand, c/o The Stage Engineering
International, Box 2699, Colorado Springs,
CO 80901 USA.

Pub, Club and Leisure Show

April 8-10, 1986.

Olympia 2, London.
Angex Ltd., Europa House, St. Matthew Street,
London SW1P 2JT. Telephone: 01-222 9341.

Audio Visual 86

April 14-17, 1986.

Wembley Conference Centre, London.
EMAP/MaLaren Exhibitions Ltd.
PO Box 138, Token House, 79-81 High Street,
Croydon CR9 3SS. Telephone: 01-688 7788.

SIB Rimini

May 6-9, 1986.

Rimini, Italy.
Ente Autonomo Fiera Di Rimini,
PO Box 300, 47037 Rimini, Italy.
Telephone: 0541/773553.
UK enquiries: Disco & Club Trade International.
Telephone: 01-278 3591.

Lighting World 4

May 11-13, 1986.

Los Angeles, California.
Robert Weissman, National Expositions Company
Inc., 14 West 40 Street, New York NY10018 USA.

Showtech 86

May 13-15, 1986.

ICC - Berlin.
UK enquiries: Spectrum Communications Ltd.,
183-185 Askew Road, London W12 9AX.
Telephone: 01-749 3061.

Scottish Pub, Club and Leisure Show

June 3-5, 1986.

The Scottish Conference and Exhibition Centre,
Glasgow.

Iain Macfarlane Exhibitions Ltd.,
15 Elm Grove, Didsbury, Manchester M20 0RL.
Telephone: 061-434 5300/0050.

NAMM Exposition

June 14-17, 1986.

McCormick Place, Chicago, USA.
Larry R. Linkin, 500 N. Michigan Avenue,
Chicago IL 60611, USA.

PLASA Light and Sound Show

August 31 - September 3, 1986.

Novotel, London.
Enquiries: (exhibition bookings) David Street.
Telephone: 01-994 6477.
Enquiries: (general) PLASA secretariat, c/o Roger
Saunders, 1 West Ruislip Station, Ruislip,
Middlesex.
Telephone: (08956) 34515.

Sonimag 86

September 15-21, 1986.

Barcelona, Spain.
Feria De Barcelona, Avda. Reina M.^a Cristina,
08004 Barcelona.
Telephone: (93) 223 31 01.

Photokina

September 3-9, 1986.

Cologne, West Germany.
UK Representative: Tony Pittman.
12/13 Suffolk Street, London SW1Y 4HG.
Telephone: 01-930 7251.

National Club, Pub, Hotel + Catering Show

October 7-9, 1986.

G-Mex, Manchester.
Iain Macfarlane Exhibitions Ltd., 15 Elm Grove,
Didsbury, Manchester M20 0RL.
Telephone: 061-434 5300/0050.

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Contact: R. Millington, Director.

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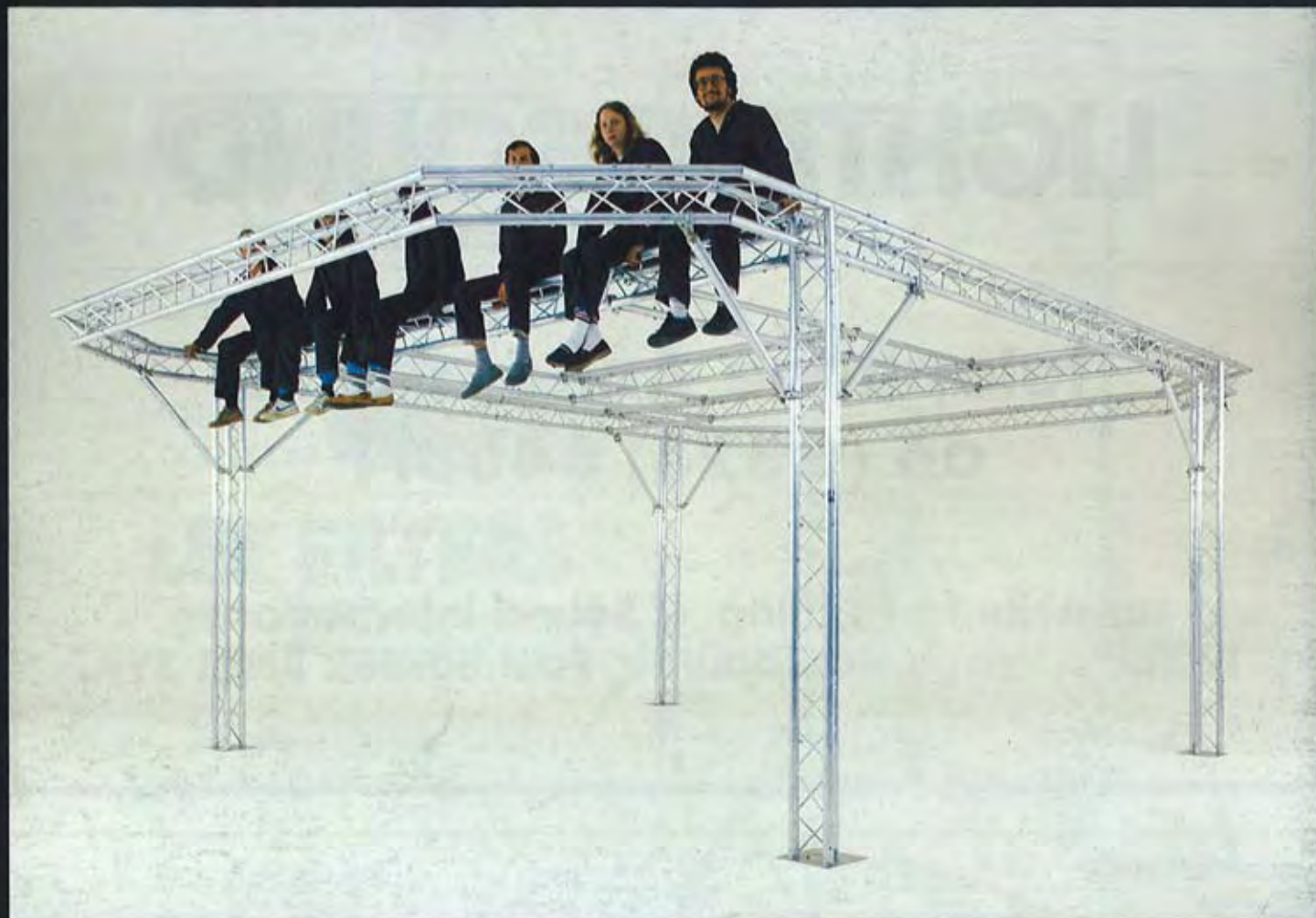
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ADVERTISERS INDEX

A.C.T. Sound & Light	62	Concord Controls	62	Multiform Lighting	10	Stage Control	9
Anytronics	63	Phillip L. Edwards	62	Musicraft Ltd	62	Stage Two	63
Audio Electronics	63	Hot Shots	20	Night Flight & Sound Ltd	62	Strand Lighting	63
Avitec Electronics	62	ILP Electronics Ltd	42	Northern Lights	62	TEC	26
Bose UK Ltd	39	J.S.G.	62	Optikinetics	7	Trafalgar Lighting	63
CCT	13	Leamington Sight and Sound	11	Primarc	62	Video Entertainments Ltd	62
Cerebrum Lighting (Sales & Hire) Ltd	3	Luton Sound and Light	11	Pulsar Light of Cambridge Ltd	30	WB Group	62
	2	MAC Sound Hire	62	South West Lighting	62	White Light (Electrics) Ltd	62
		Martins Sound & Light	20	Squire Light & Sound	12	Zero 88	4

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