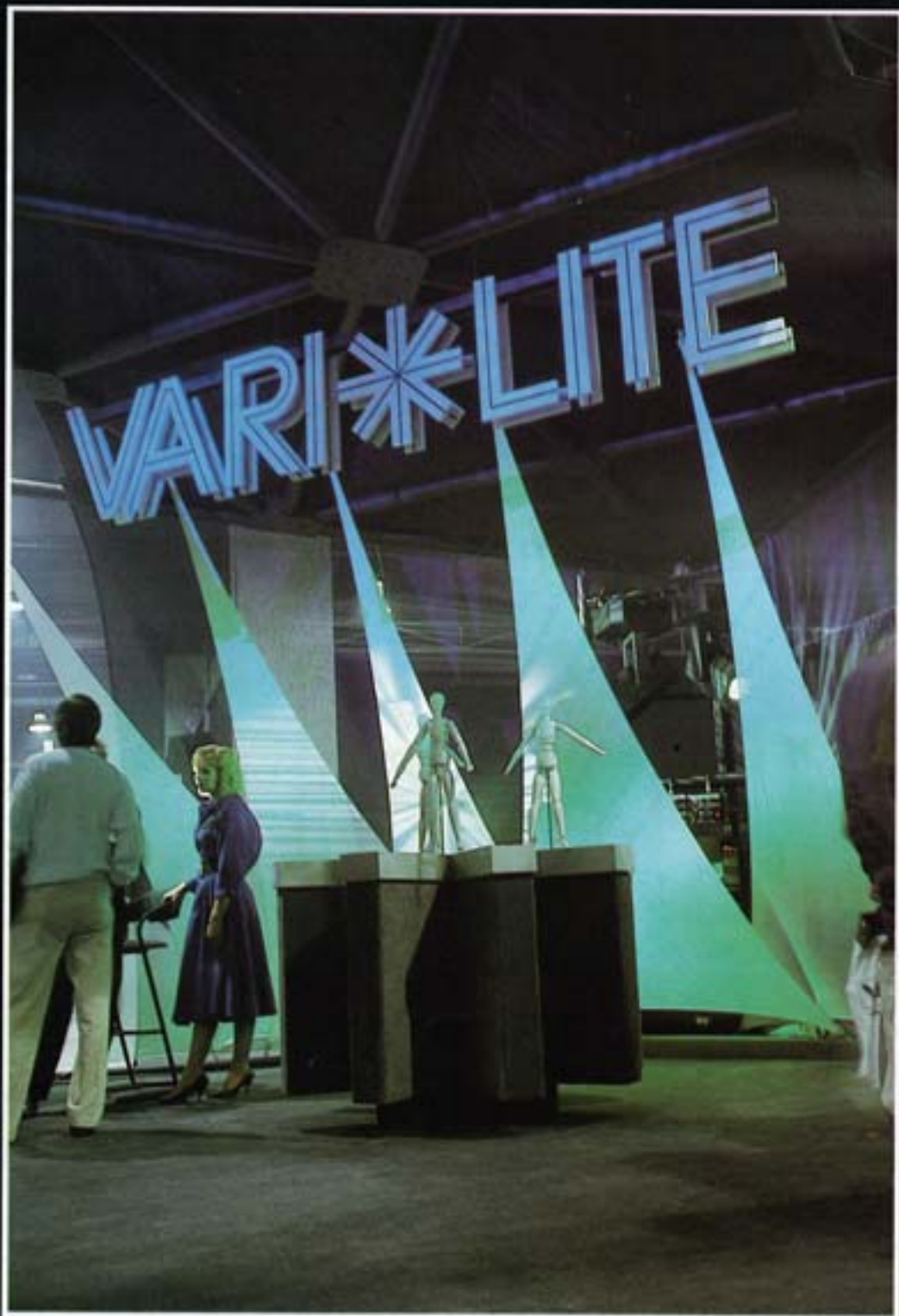


LIGHTING+SOUND *International*



Stand of the Show: the Vari*Lite display at Lighting Dimensions 88, Dallas.
(Full report of the Show in this issue, starting page 15)

PLASA
PROFESSIONAL LIGHTING
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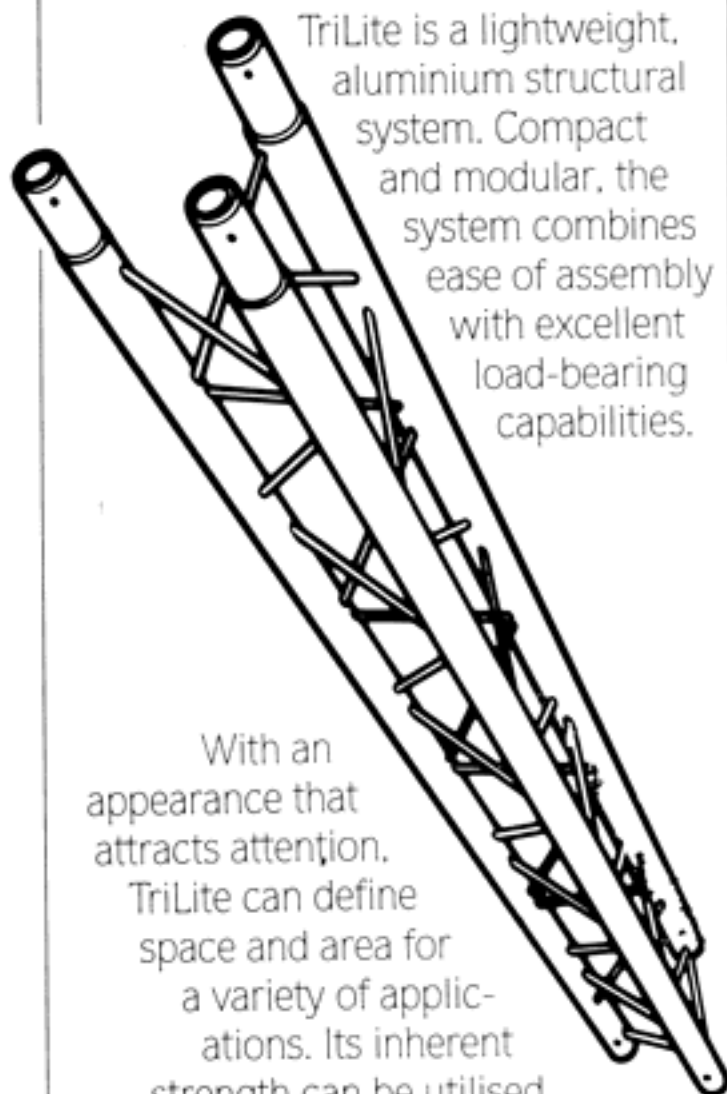
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Par Opti Projects' Paul Raymond pictured in the Tomorrow's World studios at the BBC alongside the specially manufactured Parglow curtain. Also in picture is one of the specially designed Parglow 'features' being used in Doncaster this Christmas.

Parglow and Tomorrow's World

Shown for the first time at the recent PLASA Light & Sound Show, Par Opti Projects Limited's new Parglow fibre optic material was featured on a recent 'Tomorrow's World' programme on BBC1. A special fibre optic curtain using the new product was commissioned with just a few days' notice, and presenter Maggie Philbin made her entrance through it at the start of the show.

Parglow is unusual in that it lights 'sideways', with the glowing colour strings continuously changing colour. It is highly versatile, and can currently be seen to excellent effect in Doncaster city centre and other nearby shopping areas where it forms the major feature in the seasonal decoration scheme for the district.

Since the television programme, Par Opti director Paul Raymond told L+SI that they have been besieged by enquiries for Parglow passed on from the BBC.

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End of the Year News

Ruth Rossington checked out 1988 around the Industry

Harrison Information Technology (Hazel Simpson): "Frantic but fun! We expanded the factory, opened a US subsidiary and launched four new products. Expectations for 88 were pessimistic due to the state of the Pound, but we have been pleasantly surprised by continued growth and optimism world-wide, in spite of HM Treasury Department."

Allen and Heath (John Ball): "We've been happily rowing against the trend, as far as the market is concerned. Turnover is up by over 30% and we're very very happy."

CCT Theatre Lighting (David Manners): "From our point of view it's been an excellent year for just general trading plus we've had some very large world-wide contracts. I think there's been a total up-turn in the year in the sale of lighting instruments... it's gradually getting better, maybe our products are getting better!"

Icelectrics (Rob Peck): "For our company, 88 saw a great change due to our merger with Le Maitre in April. The company is moving forward to greater and better things, we're improving productivity and looking at new and existing products in order to strengthen our position in the market."

Par Opti Projects (Paul Raymond): "It's been an extremely good year for us, a growth year in fibre optics. We see people moving to our form of decorations, particularly Par-Glo. The PLASA show

brought a lot of enquiries and next year we hope to consolidate the present success of fibre optics."

Rosco (Mike Hall): "We moved in July to new premises to accommodate a continuing period of growth mainly in the overseas market but also in real terms in this country."

Cloud Electronics (Roy Millington): "Ooh, bl**y awful! (he tells lies). The company has consolidated the progress made over the last few years, this year has seen the launch of several new products, which makes the 1990's look very exciting. Happy Easter!"

Anytronics (Bob Hall): "Bl**dy marvellous. This year we have made excellent progress, both on the home market and the export market. I emphasise both because they have led to a considerable increase in turnover which means new premises in January. It's been a very good year world-wide, except for France!"

Shuttlesound (Tony Oates): "We had an excellent year and see 88 as the year in which the pro-sound contracting market started coming into its own, although there's still a way to go. We also experienced a greater level of professionalism in the market place and are looking forward to 1989 being an even better year with more growth in the audio industry."

Multiform (Iain Price-Smith): The launch of Scorpio

has opened up brand new markets for us. Turnover is already up 30% and we have appointed new distributors in four European countries since September. 1989 heralds the launch of Quattro for which we have great hopes."

Celco (Tim Bridle): "We are very pleased with the way things are going. The year has been extremely successful and a great deal of that is due to the efforts of our distributors. With their continued support we'll have a great new year."

Starlight Design (Marion Smith, with the odd aside from Graham): "This year the manufacturing side has taken off, which has been well received within the industry, and we're very pleased with this reaction. The increase in manufacturing turnover has resulted in a wholesale increase and we are actively promoting the export market."

Pancan (Fergus Veitch): "The move to Brighton was very successful, the new R and D workshops are now in use and improved software has been developed for the System 2, on top of which we've substantially increased our client list."

WB Lighting (Mike Wood): "The company has done extremely well on the disco front, but the TV market is somewhat quiet at the moment prior to 1992. The disco/club market is extremely busy and we just wonder how long it can last bearing in mind the sudden fall-off in the US market... I hope it doesn't die!"

Powerdrive (Nigel Clarke): "We have moved up into a more professional market over the last year. Our ever expanding range has opened up much wider markets for us."

Mushroom Lighting (Paul Butler): It's been a most
continued on page 11

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ON



DIR



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3-4

4

5

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AUX 1

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2

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IDDA 
SOUND THINKING



Green Ginger Drop Test

The Lytemode design team put their new Green Ginger Dimmer through some very rigorous tests recently. One, the B.S. 415 drop test for electronic equipment, calls for the unit to be dropped 50 times from a height of 3" (75mm). In comparison to the average handling of touring equipment this height seemed inappropriate, and Lytemode decided on a more stringent test.

To simulate falling off the back of a lorry, the dimmer was dropped from a height of 5'6" on to a concrete floor. The unit was still found to be, not only electrically safe, but also to operate normally and, though some minor mechanical displacement occurred, the major damage was done to the floor. As a result of this test all Green Ginger dimmers will have rubber end cheeks fitted as standard in order to protect concrete floors!

BUSINESS

- **Allen and Heath** have appointed Stage Electrics of Exeter and Sound Electronics of Newcastle as live sound distributors for their range of mixing consoles. North of the border Northern Light of Edinburgh and Glasgow join the ever growing list.
- **Stretton Leisure**, the Warrington-based audio

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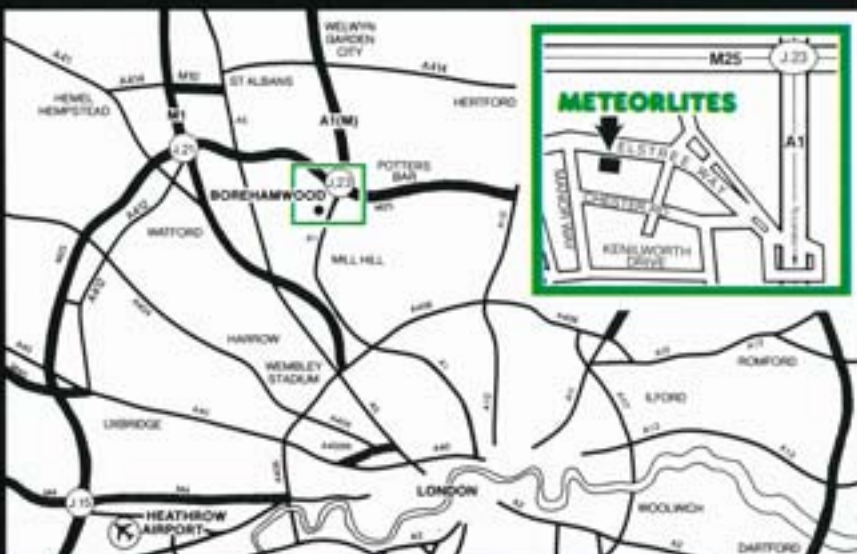
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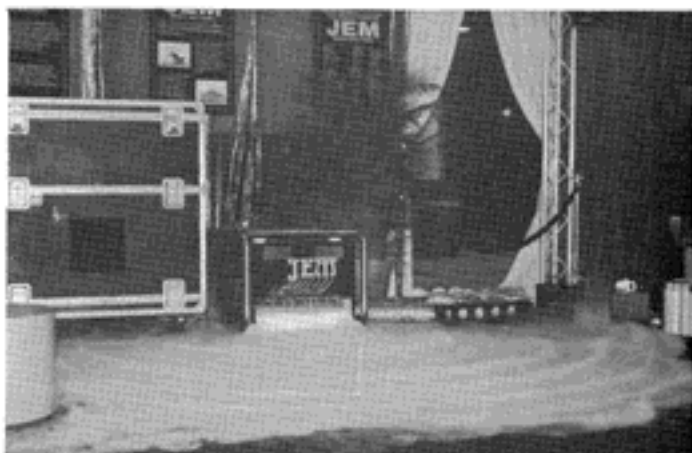


THE CATALOGUE

AUTUMN
1988



Checking the trade figures: Neil Rice (Optikinetics), PLASA general secretary Tony Andrew, and PLASA chairman-elect Rob Peck pictured with commercial attaché David Hallett (second from right) at the recent Lighting Dimensions show in Dallas.



JEM's Heavy Fog brought out the superlatives in Dallas: "Boy, can this thing dump fog"... "So this is your big honka"... "What a sh*t buster"... "This is an awesome machine"... "This is an ass-kicking machine"... (etc.)...

and video system designers, have just completed a major installation for Courage. A critical element in the success of '31 Corn Street' in Bristol has been the sophisticated video and audio system which incorporates advanced computer control electronics and Bose loudspeakers to provide the latest in multi-media entertainment. Mark Plumtree, head of the in-house design team told L+S: "We wanted to create a different type of environment; one that could vary its character during the course of all-day opening to attract a wide variety of customers. This is a unique venue for Bristol and, with a spend of over £400,000, quite a high risk venture."

● **Harrison Information Technology** have purchased an additional factory in Cambridge to cope with the increased demand for the Xi-Series Amplifiers and their newly introduced Modular Mixer. The new factory doubles Harrison's available floor space and has been totally refurbished, with part of this new facility now housing the expanded R&D team. This complex represents a considerable investment, and includes full C.A.D. stations and a wealth of computer hardware. The expansion also means additional staff are being sought, particularly in the field of electronic technicians - no easy task in this part of the country.

● **Smithfield Electronics** have been appointed UK agents for two British products. The Chester-based light and sound company is to provide showroom facilities for the ranges of both Wembley Loudspeakers and Scott Sound Systems, as well as organising promotional activities.

● Recently appointed UK sales manager Alison Brett has announced a complete re-structuring of Soundcraft's dealer network. The total number of dealers has been reduced from 43 to 21, and the company has stopped direct sales to end users. Product access to individual dealers will be tightly controlled, protecting the market value of key products and minimising inter-dealer competition.

Alison Brett explained the new strategy to L+S: "We needed to look carefully at how Soundcraft was being represented in the market and the level of service being given to our customers. The market is changing and requires a more professional approach; manufacturers can no longer rely on the 'hard sell' and must look towards building complete service packages to maintain their competitive edge."

Alongside its UK dealers, Soundcraft have appointed new dealers in India, Kuwait, Sri Lanka, Thailand and the Philippines. A complete list of the dealer network is available from Soundcraft Electronics Ltd.

● **Electrocomponents Plc** have announced that group operating profit for the half year has increased by 18.5 percent to £23.1 million. The new products and service features introduced during last year enabled RS Components to increase both sales and profit. The franchised component distribution companies in the UK have now been combined and management has been strengthened in Germany and the companies distributing to the retail market have seen substantial increases in sales, say the company, aided by two acquisitions made last year.

● A unique new way to buy lighting is now available both to the general public and to the contracts trade. Offering everything from candles to complete lighting systems, **After Dark** is a new retail chain store opening its first shops in London this winter. As well as catering to the domestic buyer, the shops will also provide a complete contract service to the specifier and end user, with over 1,500 sq ft of showroom space devoted to architectural and technical products, many of them exclusive, including two new low voltage halogen systems from Switzerland.

● Due to continued growth, **Lamba Electronics Limited** has now become **Lamba Plc**. The change reflects the confidence and commitment of the directors and shareholders in the future of the company, they told L+S.

● American precision instrument manufacturers **IVIE**, formerly CETEC IVIE, have granted exclusive distribution rights for the UK and Ireland to **Vector Marketing**. The IVIE range of professional sound measurement products includes established spectrum analysers IE-10 and IE-30, plus tone generator IE-20B. This already comprehensive range has recently been expanded by the introduction of the PC-40, a fully portable and self-contained computer spectrum analysis system. To enhance their service to existing and potential IVIE users, Vector have joined forces with audio consultant Paul Trew to form **Smart Acoustics Ltd**.

● Norfolk-based theatre lighting suppliers, **Angles Lighting Hire** launched their new disco and sound hire operation last month. The open weekend was supported by Gradav Theatre Services,

End of the Year News (from page 7)

successful trading year... We've moved to larger purpose-built premises increasing our space eight-fold, we've taken on more staff and completed several major hire contracts throughout 88. It's been by far and away our best year."

Lynx Lighting (Nick Searle): "We've made a lot of new contacts, the overseas market is looking better and we're looking forward to 1989."

Pulsar (Ken Sewell): "It has been a momentous year with a huge increase in turnover, well over 25%, and noteworthy because of close co-operation with Clay Paky on Golden Scan and the acceptance of Oska in the industry."

Farrah Sound (Kevin Swain): "Farrah Sound saw continuing expansion this year as well as an increase in the provision of equipment and services for a large variety of projects around the world. We recently gained the distributorship for Apogee Loudspeakers and launched the Metro range of audio equipment."

Formula Sound (Sandra Cockell): "1988 has been the best year yet for Formula Sound with product sales beating all previous records. We would like to take this opportunity to thank all our customers for their support and wish everyone a Merry Christmas and prosperous New Year."

Optikinetics (Neil Rice): "This has been another

record year for us, with acid house music reviving liquid wheel and projector sales. The Light and Sound Show moving to Olympia certainly got us out of the red (and into pink) and more recently Lighting Dimensions in Dallas. Our congratulations to the organisers for a professional show. All this has meant continued growth for us and all our friends in the industry world-wide."

Cerebrum Lighting (John Lethbridge): "Sales have exceeded our targets, and we have seen a big growth in the Japanese market in particular, after years of hard groundwork."

Zero 88 (David Catterall): "The launch of the Sirius lighting board made 1988 undoubtedly the year of Zero 88 with substantial and sustained sales growth in all markets. As far as 1989 is concerned you ain't seen nothing yet!"

Lamba Plc (Neil Drain): "We have found trade very buoyant this year particularly now that we have established ourselves as the sole national distributors for Numark mixers, Martin fog machines and NJD disco products to name but a few. It's been a very successful year."

Lighting+Sound International (John Offord): "As this is the only space left in the magazine, I have to use it to wish all our readers a Happy Christmas and highly prosperous 1989. And thanks for your continuing support"



Pulsar's Derrick Saunders shows Oska to Peter Stringfellow at Dallas (full LDI 88 show report pages 14-20).

Soundcraft, JBL and Cloud Electronics. Part of the display was given over to disco/club lighting and speakers, desks and light boxes. The grid had a new sound-to-light fanlight from Germany; 2kW gobo rotators and projectors from CCT Theatre Lighting; pinspots, scanner dice and light balls from UK Distribution, and a range of light boxes from Mystical Lighting Ltd.

The Citronic Thames II system was also in evidence as was a large array of NJD and Cloud desks and the lighting control was courtesy of a Celco 30 with soft options and Green Ginger racks. Soundcraft provided all the mixers while JBL and HH amplifiers exercised the speakers of JBL, Electro-Voice and Bose. On the microphone front Sennheiser were well to the fore, especially their broadcast standard radio mics, together with products from AKG, Amcron and Electro-Voice.

● Steve Harvey, Les Call and Chris Heaney have pooled their knowledge and ideas in the creative use of lasers, computer graphics and animation to form the company, **Laser Magic**. Their service incorporates the latest developments in holography, purchasing, hiring, servicing and updating of any system, all, according to the company, at extremely competitive prices.

● UK distributor, **Britannia Row Productions** received delivery of a RAMSA WR-5840 monitor console earlier this year, which will be followed by regular shipments commencing in January.

February will see the arrival of the WR-5852 house console and an extension of the company's policy. Mike Lowe, director of Britannia Row, explained to L+SI: "The first console, the WR-5840, is being retained for loan to potential clients. Most of the major UK sound companies have already expressed an interest in the console and will be appraising it over the next few weeks."

● **C Audio**, regarded as one of the UK's leading builders of professional power amplifiers, has topped the 3,000 mark with sales of its SR series power amplifiers, to PA hire companies. Speaking about this success story, managing director Phil Hildrow told L+SI that he attributed it: "... to product reliability and performance, coupled with the

Britannia Row takes RAMSA



Brian Grant, managing director of Britannia Row productions (centre) seals the deal with Ian Sharpe, Ramsa sales and marketing manager. Also in picture is Mike Lowe (left).

very best after-sales backup service."

● **European Leisure Plc** has recently acquired Mister Craig's, a night club and restaurant in Leeds, for a cash consideration of £1.25 million. The company feels Mister Craig's to be one of the leading night club and theme bar venues in the North. The complex comprises a substantial discotheque, catering for up to 1,000 people, a restaurant and three adjoining theme bars.

In a separate transaction, European Leisure has also purchased Le Cafe Noir, a popular theme pub in Perth, for a cash consideration of £300,000. Both acquisitions will be funded from the com-

pany's existing resources and the two purchases will continue European Leisure's strategy of making selective acquisitions in order to enhance their existing portfolio of leisure venues.

● The Sirius lighting desk spotlighted the plight of Children in Need during the recent charity marathon. **Ancient Lights** in Cambridge supplied the two desks, designed and manufactured by Zero 88 Lighting, for the attempt to raise money for deprived children. Since its release in June, the spotlight has regularly fallen on Sirius, and now the desk has focused its spotlight on a worthy cause thanks to Ancient Lights.

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Lighting Dimensions 88

John Offord and Tony Gottelier report from Dallas.

Firstly my impressions, and the quick answers to the frequent questions I received once I got back to the UK. What was it like, and how did it go?

It was like the recent PLASA Show at Olympia, without sound exhibitors but still with the noise, and about two-thirds the size. Pro-rata, the visitor count was about the same: I understand just over 3000 people turned up to view. It covered everything from top end discotheque to legit theatre with a healthy chunk of concert touring in the middle. The programme included workshops, and the show was well organised.

Certainly Lighting Dimensions International will now be a regular on the calendar, and if that's the basic info you're looking for then you can now start reading the pictures. But for more information, please read on, or go to Tony Gottelier's mini-overview which will give you a much more seasoned review . . .

The first buzz was plastic Par cans. Well, it would be, wouldn't it? **The Uni-Par Corporation** bill themselves as the 'lighting manufacturers of the future' and their Uni-Par plastic can has a suggested retail price of \$54.95. Certainly this little stand got the show talking, and it will be interesting to see if any major touring companies pick up a few and give them a road trial.

Also at the top of the innovation hit list was Crystal Color from the **Artifex Corporation** and demonstrated on the stand of **TMB Associates** of Burbank California. The product is listed in detail in our special survey of remote controlled luminaires in this issue. Certainly many people believe this is one of the major ways forward in colour change, and it is a development that has been talked about for many years.

Also on the stand of TMB and drawing a lot of interest was the new VSC series connectors for the professional lighting industry. Designed by Veam-Litton, they are totally compatible with Socapex and SAP 19-pins but according to TMB "far exceed their engineering standards" and are designed for years of trouble-free use.

Just launched the previous week at Dusseldorf, ColorRay was given its first US showing in the **Lasermidia** booth (see Tony Gottelier's review) and this was coupled with the best display of laser graphics I've seen to date.

More conventional colour change and remote control systems were in evidence elsewhere, of course. **Avolites Inc.** had Celjet II, **Great American Market** had Colorwiz and Lightwiz and **Dyna-**



The Intomart, Dallas - venue for Lighting Dimensions 88.

Might Sound and Lighting had their various Moto-Light systems.

Everyone expected **High End Systems** from Austin, Texas to have a big presence on their home patch, and their well-established Color Pro system was much in evidence. On their main stand it was back-to-back with their other winner, **Laser Chorus**.

High End act as US distributors for several British and European majors and one major booth was given over to **Clay Paky** of Italy who did the obligatory Golden Scan show with **Pulsar's** Oska in command, faithfully flanked by Mick Martin, Carl Dodds and John Alan Lindsell.

The third High End booth featured **JEM's** massive Heavy Fog machine, which led to many an American visitor shooting for their much renowned superlatives, plus **Lynx Lighting** with Color Pros in a Proteus moving rig and a launch of their Synchro Pin, a new synchronised single beam lighting effect.

Over on the **Coemar** stand Bruno Dedoro was

hosting an effects show with the latest in their range including the new Jupiter effects projector that can run to 36 colours and 12 gobos.

On the follow spot front, **Phoebus Manufacturing** were showing an 'S' or 'Simplified' version of their Mighty Arc II which has had the rapid zoom replaced with manual control of focus and a price reduction to match. They will be launching a range of xenon searchlights at the USITT show at Calgary next March.

Lou Farina of **Lycian Stage Lighting** was demonstrating their new 1271 Starklite spot for truss mounting for the touring industry. It utilises a 1200 HMI lamp. More information on this will be included in a forthcoming Equipment News feature in L+SI.

Production Arts Lighting of New York were looking after Ludwig Pani's range as usual, but the accolade for the biggest piece of equipment on show went to **Engineer Lighting** of Tokyo with their massive Robo Search searchlight. By using a conventional lighting console (at the show it was Celco) each function of each light is assigned to one channel, and for each light eight channels are needed. Features available include variable speed pan and tilt, shutter and colour change.

Back again to the TMB stand, and moving to lighting control, **Jands** ESP 24 and 36 controllers were on view (now available in the UK through AC Lighting), and across the way **Avolites** had their Precept 36 and the new QM500 on display. The compact QM500 was developed in England in conjunction with English Opera North and was featured in L+SI earlier this year. It is now in full production. Q-Patch and the Linklight Multiplexer completed the Avolites spread.

The other big name in lighting control for concert touring, **Celco** had their Baby and Series 2 30, 60 and Gold on view under the command of Keith Dale, Colin Whittaker and Norman Wright of Celco Inc.

Much in evidence at the USITT Show at Disneyland in March, **Teatronics Inc.** had many lighting control systems on view and introduced Producer II Plus, a computer-assisted manual console with CRT and disc drive, Midnight Special live entertainment console, and the MD-288 modular dimming system. On part of the Dyna-Night stand, **Electronic Theatre Controls** had their line-up of Vision, Impression and Concept memory lighting control systems.

At the real sharp and small end, **Zero 88** had Sirius and **Great American Market** had Access - just



Randy Wimberley shows the Uni-Par plastic cans.



Tomcat's Chris Cronin (left) shows the latest system to Peter Clarke of Supermick Lights.



Darnell Witten (right) of Zero 88 Inc. demos the Sirius.

as you would have expected. Freddy Lloyd went out from England to back up the Zero 88 effort, and GAM had designer Gordon Pearlman on hand to demonstrate Access.

For the discotheque industry **Advanced Lighting Systems'** Enigma control system drew a lot of interest, and John McPhail was delighted at its first US showing. "They take computers on board much more readily in the USA," he told me.

As you walked into the main hall the stand of **Thomas** (James Thomas Engineering) was big and colourful with the first US showing of their new lightweight trussing system, launched at the PLASA Show in September. Other trussing companies were around, but the big boys in the business are mostly British, and **Tomcat** had something new: the biggest truss ever. It is designed to span up to 80' and support a five ton load. Director Chris Cronin walked in with a 6' section tucked under his arm on the second day of the show.

Optikinetics' TriLite can always be seen at exhibitions, even if there isn't an official Opti stand. For this show, many of the British contingent were housed within the same much photographed TriLite stand that stole the show at PLASA in September.

For Optikinetics themselves it was time for a celebration. Directors Phil Brunker and Neil Rice had just tied up a deal for the manufacture of TriLite in Canada and the formation of Tri-Lite Inc. The new company will be based at Renfrew, Ontario under the wing of Kenneth E. Lindsay, vice-president, marketing. Phil Brunker will be president of 'Inc.' lighting-wise, Opti had their new Strobeflower and Flatspot effects on demo in addition to the old 'Acid House' effects.

Still under the TriLite roof, **Mode Electronics** were presenting their latest range of control equipment as seen at PLASA and **Formula Sound** were doing the same, with System 2000 to the fore. Advanced Lighting Systems I've already mentioned, and completing the contingent was **Wembley Loudspeakers**, with Paul McCallum showing off the kilt in competition with ALS's John McPhail.

Wembley were also showing off, to good effect, their various loudspeakers. "They all love the looks," Paul McCallum told me, referring, of course to the equipment. "The Deuce concept has been very well received as has B-Line. After two years of Deuce and one year of B-Line I can safely say 'we're on our way' ". Amazingly, Wembley may well be selling the equipment for



Barry Widdison (right) goes into detail on Mode Electronics' control range.



TMB Associates had an ever-busy stand with Crystal Color, Jands controls, and the new VSC connectors on view.



Andrea Tawil and Bob Gordon of The Great American Market with Keny Whwright (centre) of Wybron Technology, the designer of Colorwiz.



Catching up on the latest: Peter Stringfellow pictured with Neil Rice of Optikinetics on the PLASA group stand.



Avitec UK's sales director Andrew Morris (left) goes into Color Pro talk with High End Systems' Bob Schachel.



Dick Ollett (left) and Steve Warren (right) with Avolites' QM500 compact.



US connexion: Colin Whittaker and Keith Dale of Celco (London) with Norman Wright of Celco Inc. (New York).

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The Vari*Lite system goes public.



Engineer Lighting's Robo Search system was difficult to miss.



Wembley Loudspeakers' Paul McCallum (centre) with Julian Russell of Stringfellow Enterprises (left) and Peter Stringfellow.



Strong International's Jack Schmidt demos Super Trouper with Moto-Light front end.

in-car entertainment! Evidently a serious enquiry was received from someone who converts old cadillacs and he wanted the 18" driver and cubes for this purpose.

Ness Imports of Hackensack, New Jersey are responsible for selling a very broad range of discotheque products across the States, and they had the new Pro-Mist fog machine on view for the first time. Under their own Optec banner they introduced the Moonflower effects unit for which a high power version is available for outdoor events. Also shown were their Neonstick, Linocolor and Xenonline effects.

Other new equipment on the Ness stand included the Diamond Scan from SLE (Germany) and the SummaStar laser effects sequencer from Summa Technologies Inc. of San Jose.

Martin had a mix of their own and **Lampo** products on display in a discotheque environment, and new product here featured the Martin Fogger Magnum 1600, the Ministar economy moon effect, the Lampo Derby and Superlight 2.

Rosco had a sort of 'meet the people' stand where you could go to talk about their huge range of products. They introduced Motion Effects - lighting fixtures that create moving lighting effects such as water, fire, clouds and rain. Also shown was the Rosco/SCI pin connector range of electrical connectors.

There were numerous other major stands, in themselves featuring further companies. **Times Square Lighting** of New York were showing **Teatro** and **Desmar** were with **DeSisti** and **Omnisistem** had products from the **Programsistem** range.

And that's where my notes end after endeavouring to fit in the most noteworthy things I could find in between manning the stand for this magazine and PLASA.

John Offord

Any doubts which may have lingered as a hangover from the notorious farrago of the Billboard organised US trade shows in the late 70's, were swiftly dispelled on arrival at L.D.I. 88. Here was a well organised show in a building seemingly tailor-made for the occasion. Yet the Infomart, a metal and glass structure modelled on the original Crystal Palace, which housed both the

exhibition and some of the seminars, is apparently one of the smaller conference centres in Dallas. Which perhaps explains why the Loews Anatole Hotel, which was the nucleus of after-hours show activity, has no less than 2,000 rooms built around two massive atria and a tower and providing every possible facility. Quite a hotel for £45 per night. British hoteliers - please note.

Perhaps because everything else in the States is supposed to be bigger and better, as witness above, the show itself seemed smaller than expected. But, it has to be recognised, exhibitors find it impossible to support every exhibition and, since L.D.I. is a new show, there must have been those who were unsure and played safe and others who had already expended their budgets for the year.

However, I am confident from the feel of the atmosphere that L.D.I. will swiftly become the premier US lighting show for all disciplines and will therefore be the one the manufacturers will support with a major effort. Obviously the fact that it is organised by a much respected trade magazine helps, and provided they maintain a similar level of organisation in successive years, and don't succumb to the temptation to increase the frequency, L.D.I. will be a must for exhibitors and visitors alike. The word among the exhibitors was L.D.I., PLASA and Rimini, with Dusseldorf on alternative years.

It was good to see substantial British participation reflecting our historical position in the US market. Equally pleasing was the introduction, by American companies, of innovative products of their own, not plagiarised from European sources. In particular, Lightwave's ColorPro and Laser Media's ColorRay, no doubt Vari*Lite showed what was possible with an original idea. The ColorPro has been extensively covered in this magazine recently, whereas ColorRay is relatively new, having been launched at Dusseldorf. It uses laser scanning techniques, in combination with dichroic colour change, to manipulate beams of light delivered by fibre optic from a single Xenon source. Thus, in smoke, it will deliver tunnels, cones and fans in combination with high speed colour mixes. This product is not intended as a laser simulator but as an effect in its own right in

the Colibri/Minilite mould, and certainly, in the dark of the demo booth, it was impressive. A basic system consists of four heads and a programmable controller.

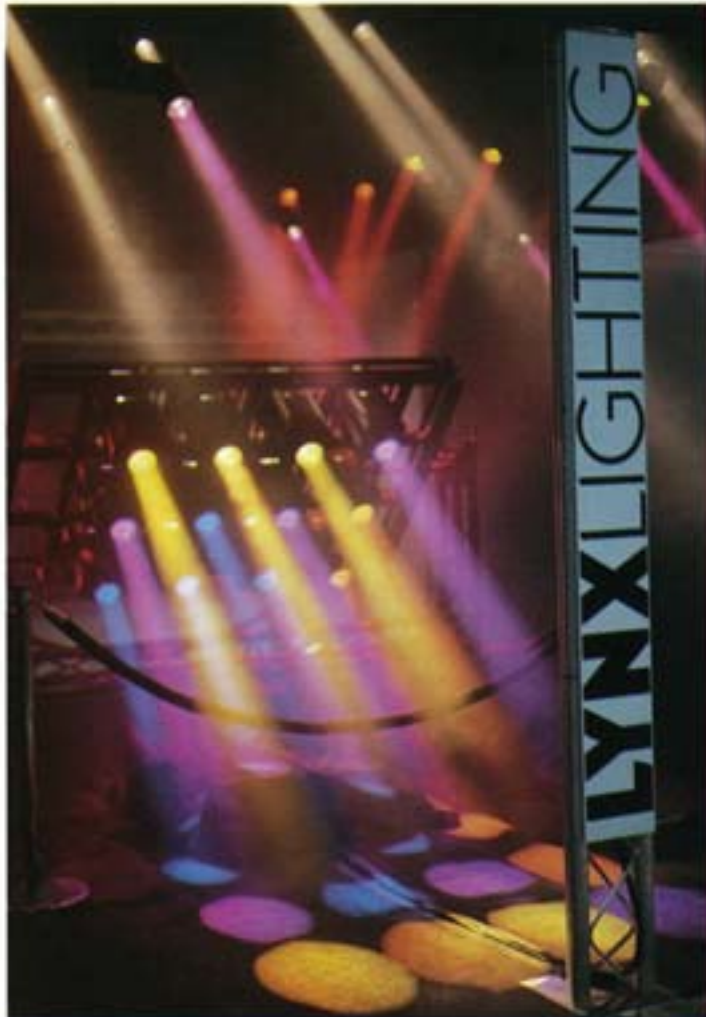
There was some discontent about the entrance charge for the seminars and workshops organised around the show but, despite this, I found them very well attended. What I found less palatable was the choice of subjects, some of which, though designed to stimulate argument and discussion, led to rather sterile debates about the rights and wrongs of one manufacturer's approach as opposed to another's.

In fact, on the whole, it would seem that this problem was caused by attempting to maintain a constant series of these discussions throughout the three days and thus spreading the subject matter too thinly. Perhaps fewer sessions with longer breaks between would be preferred by all, especially the exhibitors. Similarly, it would have been preferable if all these sessions had been held in the same building as the show, rather than holding some in the hotel. However, these are small points of criticism which could easily be rectified next time around.

I would like to have been able to comment from personal experience on the official evening entertainments, but unfortunately I was unable to attend any of these. The visit to Dallas Alley on the opening night, where no less than eight clubs co-exist under one roof, would have been particularly interesting, and those who went certainly found it a fascinating concept. I gather that the tour of Southfork on the Saturday night was less successful, leaving regrets at not having attended the Clay Paky party, hosted by High End Systems, at a local disco instead. Doubtless, however, the lucky ones with time and tickets for the ballgame on Sunday afternoon, and who saw the Cowboys roundly beaten, enjoyed that uniquely American experience.

Of course there is always a load of bull flying around at these affairs, but in the main I think the euphoria surrounding L.D.I. 88 was well founded and I, for one, look forward very much to L.D.I. 89 in Palm Springs - although I can think of more accessible locations.

Tony Gotteller



Lynx Lighting's Proteus moving rig for Color Pro.



Mick Martin and Oska in control of Golden Scans.



Optikinetics seal a deal for Canada: Kenneth Lindsay of Renrew Ontario (left) with Phil Brunker and Neil Rice and a symbolic piece of Canadian TriLite.



Tomcat quartet of (left to right) Chris Cronin, Mitch Clark (Midland, Texas), Ken Leichhardt (Nashville) and Dave Tomkins.



High End Systems' Color Pro show.



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PLASA general secretary Tony Andrew (left) with Mervyn Thomas of James Thomas Engineering.



John McPhail had a non-stop three days introducing Enigma to the States.



Mike Lowe of Teatro (right) with Luther Turnbull of Times Square Lighting, their US distributors.



Cerebrum Lighting's Rod Bartholomeusz (left) with Frances Thompson and Mike Garl of Thomas Inc.



In spirited mood: Bruno Dedoro of Coemar with Maria Esther Rodriguez of Futuro Cercano SA of Mexico.



Business first: PLASA chairman-elect Rob Peck, David Hallett (commercial attaché at the British Consulate in Dallas), general secretary Tony Andrew, Andrew Flores of the Dallas Chamber of Commerce, and Bob Naifeh (commercial attaché).

Seminar Views from Lighting Dimensions

The travelling circus came to town with a vengeance, and those that didn't have stands were there as visitors. L.D.I. got it right! When one considers it was their first attempt at an exhibition, Pat Mackay and her staff should be congratulated, not only on the choice of venue and organisation, but also on the quality and quantity of both exhibitor and visitor.

Apart from the noise and smoke, a phenomenon to which we have all, unfortunately, become semi-acclimatised through years of practice, the most significant difference between a standard European show and a US 'Expo' are the seminars. These are a standard feature in the US, and one which I think we Europeans would do well to encourage the introduction of, provided they are not used as simply another way of promoting 'my latest product' or 'my latest installation'.

I had the good fortune to be invited onto one of the panels for a seminar. It nearly worked! After the commercials were over, we began to get down to the nitty gritty of the future trends in lighting control, most of which was fairly in-

teresting to the audience. The subject did not surface however until we were quite some way into the discussion, and as usual, just as it got interesting, we ran out of time! It could make a subject for the London show. couldn't it?

Freddy Lloyd Zero 88 Lighting

Balzers' presence in Dallas, in the shape of myself, was for two reasons. Firstly, to take part on the panel for the 'Colour Wars' workshop, representing the interests of dichroic filters (Dichrolight). Secondly, to assess whether developments now occurring in Europe, are being duplicated in the US.

On the application of the dichroic technology, it is clear that a few major manufacturers have already established a lead, which is now being followed by others in improved colour change/colour mix systems. Other emerging products, like a colour change system based on liquid crystal technology, seem to indicate a great deal of interest in producing more colours from one single light fitting, and more permanent colour

change systems.

The title 'Colour Wars' seemed a touch dramatic for a workshop session which discussed the relative merit of gels, dichroics and colour media in general. Nevertheless, the large attendance reflects the intense competition in the gel market, and the increasing number of applications requiring more permanent and sophisticated media e.g. dichroics. The workshop took the form of individual panellist presentations, each representing the 'War's' participants. These were then thrown open to the audience, with questions ensuing on theatrical, discotheque, concert and architectural applications. The prevailing topics being a filter's durability, temperature resistance, colour consistency, permanency of colour, colour range and price.

There was an obvious interest in the technology of thin film coating, of which dichroics are a product. Despite the lack of time to present this in any detail, there is now at least a room full of manufacturers and designers with a greater understanding of where, how and even why dichroics can be successfully applied.

Peter Knight
Balzers High Vacuum

Clay Paky: Dimensione Luce

John Offord features Clay Paky and meets the men behind the Golden Scan.

A few miles north of the sprawling industrial suburbia alongside Autostrada 4 about 50 kilometres east of Milan, leading discotheque lighting equipment manufacturers Clay Paky srl are based in sophisticated designer-style premises at Pedrengo, a small town near the attractive medieval city of Bergamo.

Everything about the complex is spacious, clean and classy, and out of it comes products that have an international reputation. Though small in relation to many manufacturing companies in industry at large, Clay Paky can be numbered amongst the elite band of Italian operations who are not only good at making imaginatively designed products, but also good at selling them, too. Despite the strength of the home discotheque market, about 80 per cent of output is exported.

Directors Pasquale Quadri and Julio Savoldi were both professional musicians and have known each other since the late sixties. "We felt something was missing from discotheques and that we could add something to them," said Pasquale Quadri, "so we tried our first commercial experiments."

These experiments involved buying standard projectors and modifying them for discotheque use, and also buying other existing products and 'playing' with them. Clay Paky as such didn't exist at this time: Pasquale Quadri (Paky for short) was working in the pharmaceutical industry and playing piano or bass guitar at night, and Julio Savoldi was teaching guitar.

Clay Paky snc was formed 15 years ago, and Paky's original partner 'Clay' was killed in a motor accident just a few months later. Julio Savoldi then took Clay's place and joined Paky to begin the development of the company as we know it today.

"At this time there was an agreement between us to make some lights and sell them to groups," Paky explained. Julio Savoldi then began presenting the products that Paky was producing. "It was very hard at the beginning, but we got the machinery moving," he said.

"For more than a year we didn't take a penny from the company," said Julio, "but we made money on guitar lessons! We worked for free, but little by little things changed."

Clay Paky's first exhibition was at SIM in Milan - a music trade show - in the early seventies. They showed various projection effects equipment with their LX3 stealing the show. "The criteria was then advanced," explained Paky, "and the LX3 light gun is still in production and it still sells. Substantially it is still the same, although it may be pensioned off very soon because discos want more power. In those days there wasn't the necessity to introduce new products every few months. It was more a case of modifying and improving the design."

It was now 1974, and next came the 'Olimpic' Sfera-Vibrante (vibrating ball) - another steady seller and also still in production today. "At this point something strange happened," said Paky. "Many people

started to copy us, and steal our ideas. We realised we were not alone in the field. Others were waking up to the potential of the market place."

To stay ahead in the race the company had to keep producing new ideas. "A very important change, which no one else had attempted, was the concept of utilising just one lamp in one product, while others were using many lamps. This was a revolutionary idea at the time," explained Paky.

Out of this thinking came Astrodisco in the early eighties - a "smash hit" success. As Paky confirmed: "It was a bigger success at the time than even Golden Scan is today. Also

from the same concept came the Astro Beam, another major success, and then the Astrosfera followed by Saturno and Marte. The competition kept following us, but we managed to stay first - particularly against the Taiwanese."

As the early brochures can confirm, the company moved several times within the Bergamo area in the formative years, and sometimes from garage to garage, before finally taking its present premises about six years ago. They started with 2000 sq. metres and last year built further space, giving a total of 4000 sq. metres today. In all, 26 people work at Clay Paky's headquarters, and



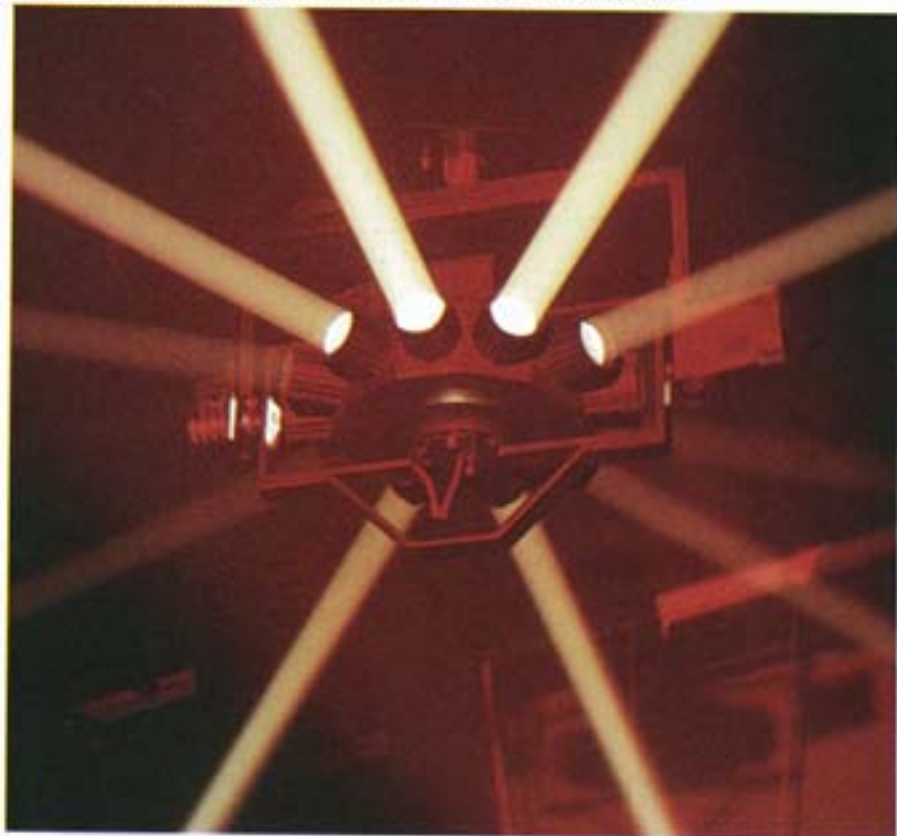
Julio Savoldi (left) and Pasquale Quadri - the Clay Paky driving force.



Clay Paky's newly-expanded Pedrengo headquarters now covers 4000 sq. metres.



Still in the catalogue: the Magic Ray is based on the stalwart LX3 Light Gun.



The Astrodisco: there are numerous variations across the range.



Pasquale Quadri (left) with sales manager Luciano Salvati (centre) and Julio Savoldi.



Designer-style entrance to Clay Paky HQ.

four different companies supply components on a contract basis.

From the first exhibition, when business started in earnest, Clay Paky's major sales effort has always been directed to the export market. In the beginning at least half of all goods were sold abroad and the proportion has steadily risen ever since.

I asked how new products were developed, and where the ideas came from. "Sometimes they come out of mistakes!" said Julio Savoldi, "and it happened that way with Golden Scan. We try to observe carefully other products, and also look closely at customer requirements. Then we go into costings, and so on, and drop many ideas because they are uneconomic. We hope to come up with a product that is suitable for the market, and it is usually a compromise across all these areas."

But back to Golden Scan, one of, and possibly the major effects lighting highlight of 1988. It is the story of the Brilliant Scan, and Paky described how they very nearly took a nasty tumble before



All Golden Scans go through an extensive test procedure before leaving the factory.



Golden Scan - the 1988 highlight.

they managed to correct matters.

"There were many scanners on the market, so we felt the necessity to build one. Since we were late on the scene in this area, for once we had to copy some of the ideas others were using. And since we were in a hurry we almost committed suicide, because the servo motors broke down. We were very worried. We had to stop production and change the components, and it put a lot of pressure on us. We had to stall for about three months.

"But out of it came Golden Scan as a new product, which had a new motor and components. We then suddenly found ourselves ahead of other manufacturers."

The problem solving in respect of the eventual Golden Scan came about as a result of a much closer relationship with Pulsar Light of Cambridge, who designed and provided the complete internal electronic control system. A stepper motor was introduced, and this solved the problems of the original servo motors.

"We've had a mutual understanding with Pulsar for a very long time," explained Julio Savoldi, "but our work on Golden Scan has certainly been a turning point on a much closer co-operation. Over the past two or three years we've worked on ideas and worked closer and closer together. We spent many long nights with Pulsar's Paul Mardon here in Pedrengo, and we've actually hurt our eyes and burnt our faces while testing products. It took so much work and goodwill to get it right, and that's why it is now such a success."

First introduced at the Frankfurt Music Fair and then at SIB in Rimini earlier this year, well over 1000 Golden Scans have now been sold world-wide and Clay Paky and Pulsar are finding it hard to keep up supply of the product. Delivery is now about four weeks.

"It is important for our customers that we deliver fast, and the situation is worrying us



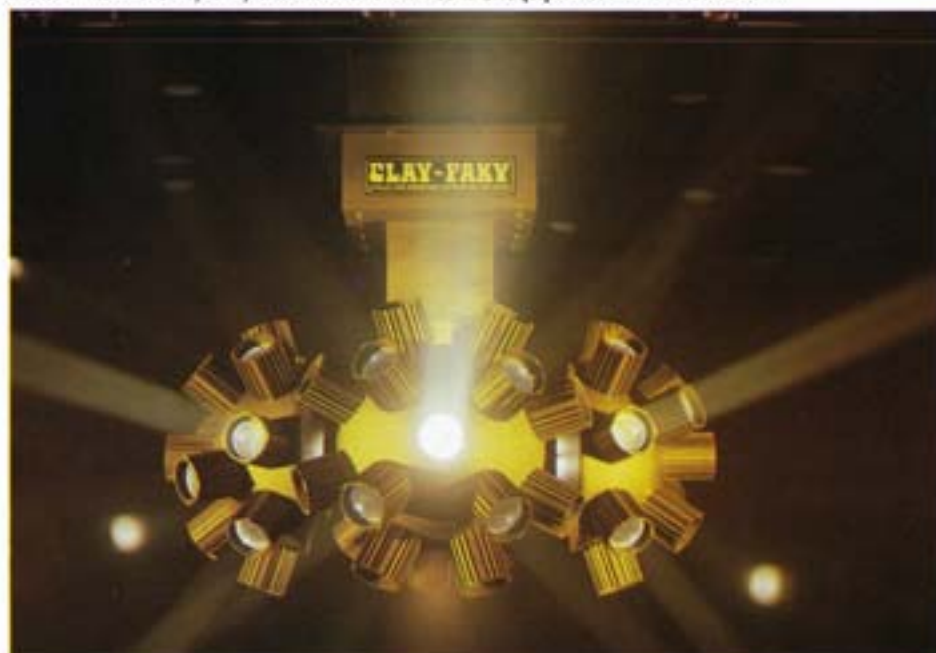
Golden Scans in production.



The Clay Paky showroom: spacious enough to show the complete range to full effect.



SIB Rimini 1985: Clay Paky's stand with Pulsar control equipment much in evidence.



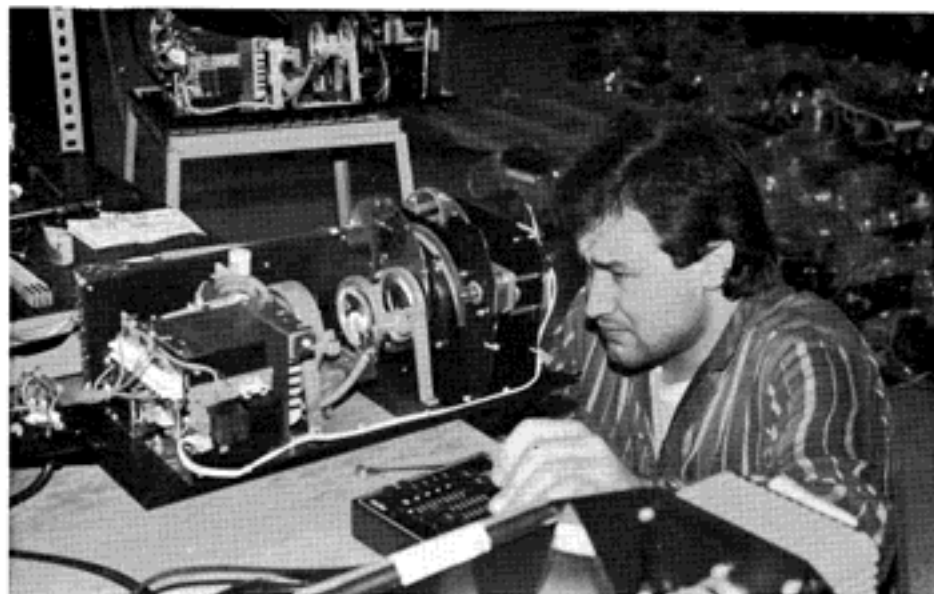
Typical Clay Paky: the Astrospider.



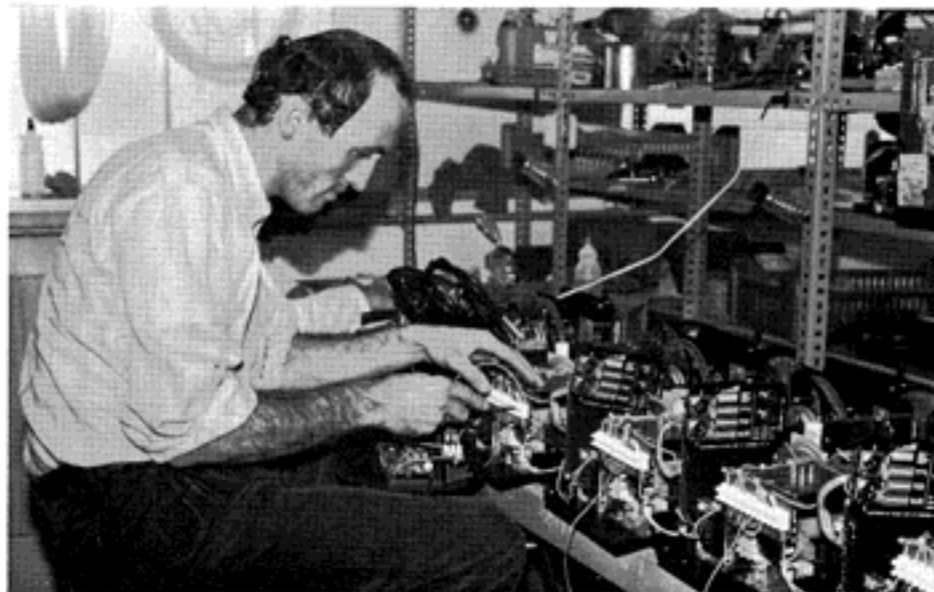
Pasquale Quadri is responsible for all aspects of production.



Part of the additional space provides a storage area for raw materials.



Attention to detail (above and below) on the final assembly of Golden Scans. Clay Paky are having difficulty coping with the demand.



-particularly as we have built our customers up one by one," said Paky. "In 1989 we will be altering our structure to deal with the situation. We have to up-grade to cope with demand. We are very well aware of the situation and we will solve it."

Up to now, Clay Paky has orientated itself directly to the discotheque market, but as so often happens, one new product can alter the stance of even the most entrenched position. "I am sure we are going to influence other sections of the industry," continued Paky. "Golden Scan has already been ordered by both television and live groups. I'm sure it will lead us into other areas."

In fact, Clay Paky will be moving even more positively into the broader live entertainment market in 1989. "We are working hard in other sectors, and we will be launching 'Super Scan' - a very sophisticated product for professionals such as theatre. And Pulsar will once again be heavily involved," continued Paky.

So at Rimini in 1989 no doubt you will see Super Scan put through its paces, and thereafter the name Clay Paky coming up as a regular trade mark on the theatre and concert equipment listings for the first time.

I am grateful to Luciano Salvati, sales manager of Clay Paky, who acted as interpreter during the interview. He made sure my questions sounded sensible, and the replies even more so.



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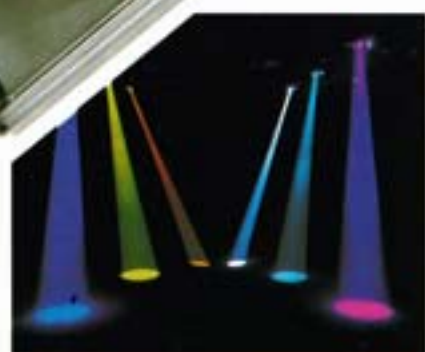
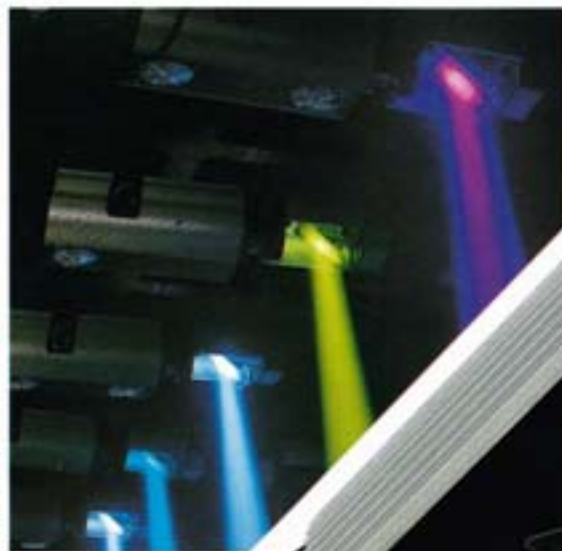
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CLOSE-UP

Paul Farrah Sound launch Apogee speakers

Having just been appointed exclusive UK distributors for Apogee Professional loudspeaker systems, Paul Farrah Sound gave a demonstration of Apogee's range of models at Gateway Recording Studios on November 25. Apogee speakers were first launched in the UK at the APRS show in June, though they've been in production in the USA since 1984.

The entire range revolves around dedicated, matching processors (see below), and comprises five kinds of two way cabinets, two sub-woofers and a three way horn-loaded enclosure. Model AE-1 contains an 8" mid/bass driver and a horn with a 1" hf driver, with 90 degrees (h) x 40 degrees (v) dispersion, for A-V applications or as a delay 'fill in'. AE-2 doubles up the same driver complement in a wide-angled cabinet, and provides defined 165 degrees horizontal dispersion. It's recommended for theatres, churches, single-source coverage of rooms with low ceilings, and 'delay fill' in auditoriums.

Model AE-3 is one step up from AE-1. Fitted with a 10" bass/mid driver its maximum SPL is 11dB greater, at 121dB continuous, while dispersion is 70 degrees (h) x 40 degrees (v). Although it can be flown, the enclosure's front corners are angled, so it can also be used as a floor monitor for dance theatres and small sound stages. Next comes the bi-amplified AE-5, fitted with a 12" bass/mid driver, and a 1" ferrofluid-cooled hf compression driver. Maximum continuous SPL is 124dB, with 90 degrees (h) x 40 degrees (v) dispersion. Completing the 2-way series, AE-6 repeats AE-5's dispersion and power handling characteristics, but is packaged exclusively as a wedge monitor.

The AE-10 is a dual 15" subwoofer with a 125dB SPL continuous rating, designed for small theatre application. This compact subwoofer will work with any of the single amp'd or bi-amp'd models. AE-12 is a concert series subwoofer, with two 18" drive units and a 131dB SPL continuous rating between 35 and 120Hz. Finally the 3X3 is a 3 way horn-loaded enclosure. Bass and low midrange is handled by 2 x 15" drivers, each coupled to separate but adjacent horns, to provide a measure of directivity and coupling. High midrange is handled by a 2" compression driver with a titanium diaphragm, ferro-fluid cooling and a 60 degrees (h) x 40 degrees (v) horn. Treble is handled by an array of four 1" hf compression drivers. Altogether, this combination produces a maximum continuous 132dB SPL between 53Hz and 19kHz, with a nominal 60 x 40 degrees dispersion pattern.

Apogee's series is notable on three counts. First, even granted Gateway studios' favourable acoustics, the sound quality throughout the demonstration was exceptionally good, verging on the qualities of upmarket Hi-Fi speakers while producing peak SPLs of 105 to 120dBc. But don't take my word for it, there's no substitute for hearing these, or any other speakers in their real operating environment.

Second, the Apogee range are all processor based. Any suitable model of power amplifier can be used, but each cabinet (or group of like cabinets) signal is derived from, and hooked back to, a box of electronics containing a -24dB/octave active crossover, corrective EQ, phase correction and time domain alignment circuitry - and Apogee's exclusive 'PAF' (Positive Amplifier Feedback) drive-unit protection system. The acronym isn't very elegant, and positive feedback has more than one connotation, but the system itself is well thought out. Unlike first generation crossover-cum-processor boxes, Apogee's units function (in common with EV's Deltames) not by sliding the crossover point, but by monitoring the amplifier's output signal. When drive level exceeds the associated drive-unit's 'safe operating area', a low distortion limiter cuts back the SPL to prevent



The Apogee AE5 with processor (above) and the AE10 with processor (below).



damage. At this point, Apogee's designer Ken Delona has worked hard at producing transparent - sounding limiter circuitry using combined rms and peak sensing, together with optimum slopes and time constants arrived at only after detailed research. Third, the larger cabinets have all been designed from scratch to work in array, so they should work more predictably and smoothly in this mode than the majority of PA enclosures.

Two processor versions are on offer for each kind of cabinet. The 'RV' (Road Version) type has input, output and amplifier return terminals together with groundlift switching mounted on the front panel, whereas on the 'PV' (Permanent Vision) they're located at the rear, out of harms way. All processor versions are 2 channel (stereo) units with level and frequency contour controls (i.e. low & high cut). Along with the speakers, the RV processors are all fitted with the Neutrik's new 4 conductor NL4MP loudspeaker connector.

Apogee are using drive units supplied to their specification by several leading US makers. Perhaps because they're getting a better sound from them than the manufacturers themselves,

Apogee's marketing director, Joe Manning didn't want to quote any names: "Too many people listen with their eyes" he said with a wry grin; meaning that if one knows the drivers are XYZ, then they'll hear what they expect, not what is. Joe is also concerned about the 'happy go lucky' misuse of CAD systems by contractors, where a detailed understanding of the limits of the data is required to avoid being badly misled. For this reason, Apogee is taking up the challenge of producing 'ready to use' polar plots of their cabinets in array (to the best of our knowledge, no other manufacturer has openly published such information) and we hope to report on the details when the data arrives in the new year. Prices range from E250 + E500 for the AE-1 and install version processor, to E2995 + E1560 for the 3X3 cab and RV processor.

Ben Duncan

For further information contact:
Paul Farrah Sound, 7 St. George's Industrial Estate,
Richmond Road, Kingston, Surrey. (01) 549 1787.

Remote Control Luminaires: A Special L+SI Survey

researched by **Graham Walne**

For some considerable time, the lighting man's attitude to equipment oscillated between disdainfully challenging it to do something unusual and eagerly anticipating the next console. Then the cash register arrived, and it all became rather boring. Then, attention started to move towards the sharp end, and for some it was the creation of the Pancan that began the new movement. For others it was Vari*Lite, and for many it was the Magic Lantern.

Suddenly the bar-counter debating chamber was obliged to recognise that the impossible might actually be coming a little closer. Lighting designers began to dream of systems where, without leaving the production desk, level adjustment will be accomplished with one or more 'wheels', colour variation by a colour selection triangle and orientation by a compass vernier planisphere.' (Richard Pilbrow writing in the ALD magazine in September 1985.)

L+SI decided to take a look at what remote control devices are currently available for lighting performers and there is a surprising range. Old friends are here. Pani, who were pioneers in remote control, introduced their PEF system in 1959. Also here is the award winning Pancan which broke new ground in 1981 by leaving the instrument alone and simply moving the beam via a mirror, a forerunner of many current disco-type systems and also the basis behind Golden Scan (a major success at the PLASA show), and Robot (with the improved lightsource) both of which are included in the survey.

However Pancan are now developing a variation on their standard system. Called System 4, it promises to be very interesting, and they have given L+SI an outline specification to whet your appetite.

L+SI reported on the success of the Strand PALS system, (see May 1988 issue) which motorises a variety of functions in addition to pan and tilt but which is designed to fit to standard luminaires. A similar product comes from AC Lighting who import the Great American Lightwiz. Remote pan and tilt over specific instruments, popularly the Par 64, is offered by a number of organisations notably Cerebrum (Posispot), Strand (Parscan II), AC Lighting (Dancer) and Optikinetics (Macspot).

Remote colour change has been around for longer than remote movement and old friends the colour wheel and semaphore are now joined by the scroller offering a greater choice of colours. But do remember to press the manufacturers for information on colour scrollers for cyc lighting. They do such systems but seem to want to keep them secret (the Jumbo Geljet **does** exist). Undoubtedly the ability to mix colour at random is preferable to a fixed pre-selected choice, and in this area Colorpro appears very successful (see 'Any Colour You Like Sir' - L+SI August 88) and once it is adapted for movement it will be a very exciting piece of equipment, possibly closing the gap with Vari*Lite.

This famous product is still an industry standard, but Vari*Lite have just been involved in an interesting court case in the USA which concerns the rights to various design patents, and the rest of the world is watching with interest.

It's worth noting that although I haven't identified other remote control devices, a number of people are offering remote control irises, and worthy of note are those from DHA and Pancan, and of course DHA especially offer a range of gobo rotators and animation discs for existing instruments. (See 'Projecting the Right Image' - L+SI November 86).

Some applications, especially theatre, demand that spotlights are focused with a high degree of precision. One complication is that theatre instruments have traditionally been heavy, and so motor functions applied, especially for pan and tilt, have to overcome inertia and then be able to control the energy unleashed. Theatres tend to be larger than clubs and so the instrument throws are longer which compounds any error inherent in the setting.

For example, an error of 1 degree over a 40' throw produces a variation in setting of over 8" which is totally unacceptable where scenery is involved.

Consequently, devices which can identify fractions of a degree are essential for greater accuracy, and whilst this is not difficult with developments in robotics, it undoubtedly increases the cost of the device. Of course, it is possible to set against this the time taken to re-focus spotlights manually, and in large repertoire houses this is considerable. The Royal Opera House, for example, employs 18 electricians - most of whom live on lighting bridges re-focusing the rig, not only several times each day as production suc-

ceeds rehearsal, but also several times during each production.

Remote control instruments will only successfully penetrate the theatre market if they can return to a recorded position with considerable accuracy, but as the pages of this publication record, the world of concert and club approaches the theatre more closely each day as scenery and other theatrical devices are adopted - so perhaps greater accuracy is not just a theatrical requirement after all. Undoubtedly the theatre will eventually benefit from a product tried and tested thanks, not for the first time, to the greater resources of rock and roll.

Table 1 covers static devices which offer remote control over colour change and Table 2 devices that fit existing instruments and offer pan and tilt (some with colour change). Table 3 lists complete devices offering pan tilt and colour change with full remote control. Details of each product then follow in alphabetical order, with a supplier contact list at the end of the feature.

Ideally devices should provide the ability to cross fade from one colour to another, but the survey shows that very few devices can currently do this. Hence most colours are snap-changed, fortunately for the concert and club world, the tempo of the music has proved a useful ally.

If the colours have to change while the instrument is producing light, then users have to judge the cleanliness of the change in relationship to the cue and type of production. For example, on the colour wheel, if colour 5 is in use, then colour 1 will be the next to come round, but if 4 is required, then the wheel will have to pass through 1, 2 and 3 before reaching 4, and in most theatre situations this is not acceptable with light up. Similar problems affect the scrollers, but not the semaphore, which offers true random access over the loaded colours. Colours can also be mixed by virtue of allowing more than one to be in front of the instrument at once. A wide range of shades can therefore be created from four carefully selected colours, although the mixing is subtractive, of course, so the output diminishes with each additional colour insertion.

I asked companies what was the sound pressure level of the device in movement when measured at a distance of 1 metre, but since only one manufacturer produced a figure, the survey sadly offers no data on this. It is true to say that most companies thought their product was 'very quiet'. Of course, noise is hardly a problem in the disco/club world, but many theatres are paying vast sums in the down-time required to refocus, or they are paying vast sums in renting/financing huge rigs, much of which sit idle most of the time. A quiet and accurate device could be most cost-effective and reach wider markets.

So how quiet should a device be? I would suggest that the aim is for the device, when moving, to produce less than 25dB at 1 metre (this is the figure for noise levels in air



The PEF-M system from Ludwig Pani of Vienna - the first version was introduced in 1959.



Pancan System 1.

handling plant in theatres, although concert halls reduce this to 20dB). However, two devices producing 25dB do not reach 50dB but 28dB, 10 devices would produce 35dB and it would take 100 devices moving simultaneously before a sound pressure level of 45dB would be attained 1 metre away. This is not the noise level that the audience would hear, some sound would fall off with distance assuming that the devices were positioned away from the audience.

If, for example, the rig is placed 16 metres away from the nearest audience member, then we can apply the inverse square law which states that the sound pressure level falls 6dB with every doubling of distance. From this it is possible to calculate the level of sound reaching the audience. Returning then to the 100 devices producing 45dB at 1 metre, this would become 39dB at 2 metres, 33dB at 4 metres, 27dB at 8 metres and at

our nearest audience member, this figure has fallen to 21dB below the noise criterion for the air handling plant.

In reality this is unlikely because the wave form that the devices would create would require study. It is feasible that a line of devices would set up a wave pattern similar to that of a line-source column loudspeaker, which does not conform to the inverse square law and hence its sound level would barely fall off at all. It is also inevitable that the architecture would reflect sound waves back towards the audience. Of course many applications, especially theatre, are unlikely to move the devices during the performance and are much more likely to make the changes between scenes or acts when music or audience obscure any noise.

This survey is essentially about the devices themselves rather than what controls them although, whilst it is fair to say that one cannot function without the other, a full study would demand an entire issue. Some systems such as the Strand PALS and the Vari*Lite come complete with their own control, but many others can be operated from a variety of devices. In many cases the desks don't really offer the kind of access Mr. Pilbrow dreamed of, and, not for the first time, one is reminded of the brilliance of Mr. Bentham's light console, developed in the 1930's and based on the Compton organ with complete access to all functions permanently available via the manuals.

As the devices offer more control and more variety, then the desks must provide the designer with better access. Listed below are devices which offer over 1,000 colours, are accurate to 0.09 of a degree in terms of pan and tilt and maintain the 100 percentage points of dimming - the permutations are



The Colomag system on an 8-cell Molelay.

almost infinite. Random (creative) thought requires random (programmable) access. Many developments have been waiting in the wings for some considerable time, and what they have been waiting for is cooler light sources. With less heat to get rid of, the instrument body can be made of materials other than metal, and being lighter, will prove easier to move with greater accuracy. The industry has already seen several devices with integral dimmers, pioneered by the Magic Lantern, which receive their instructions via a multiplex line. Since it is highly likely that cooler light sources will require a new method of dimming, possibly mechanical, integral light and dimmer houses are here to stay.

Liquid crystal colour change has been the subject of speculation for many years (see 'Instant Colour' in TABS, vol 35/2, 77), but it has not until now been taken further mainly

SERIES 2



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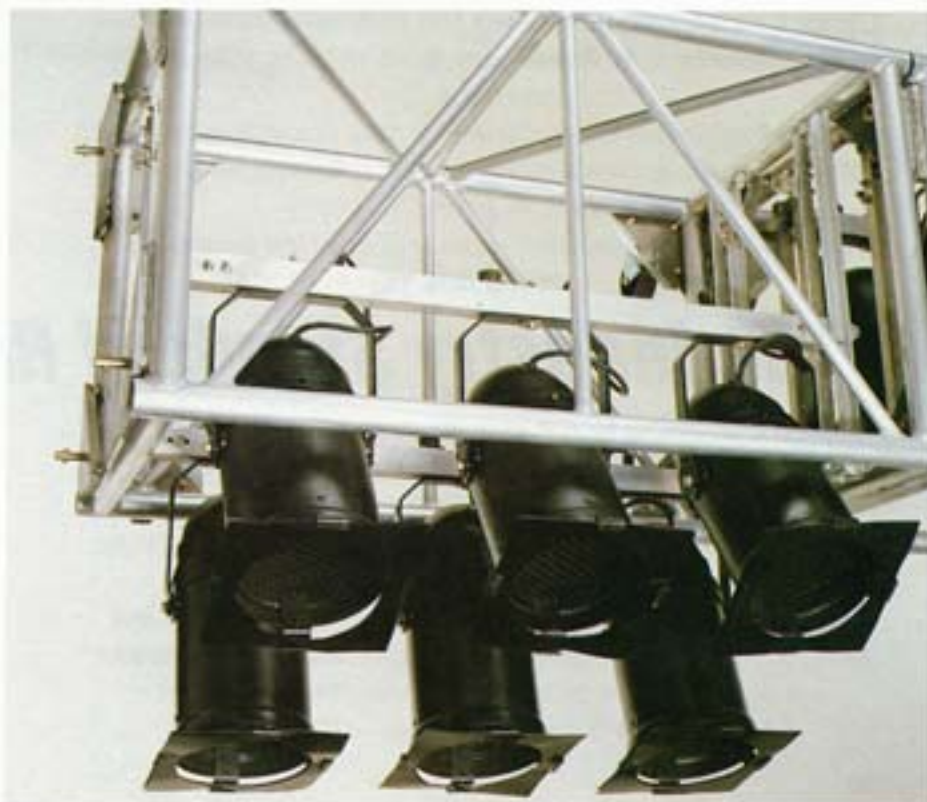


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Strand colour change wheel on a Harmony PC.

because of the heat problem. However, liquid crystals are now able to withstand higher temperatures than they could in 1977, and, whilst this is still much less than the average gate temperature, typically 170-240 degrees centigrade, other filters are available to combat this. Of course, the temperature at the end of the lens tube is considerably lower. Exciting possibilities are now in sight, and some late information on a new product is given within the data that follows.

The tables comprise the responses to a series of questionnaires circulated over the past few months. In each case manufacturers had an opportunity of checking their

answers more recently in case new developments had occurred or in the event that further data had become available. I have made little attempt to edit the responses, what appears in print are the manufacturers actual replies, a blank indicates that the question has remained unanswered.

Conclusion

More questions are now forming in my own mind (and perhaps in the reader's too) on such matters as the variability of speeds of colour change, on the size (and standardisation) of gobo patterns, on the adherence (or lack of it) to the European rules governing mechanical and electrical safety, and on the possibilities of slower rather than faster changes of pan and tilt. Many questions already included above need refinement: does the device move smoothly, for example? - and some recognition of noise must be made sooner or later. For reasons of space and time, this survey excludes control and the interface between it and the instrument, a vast but vital area and one which at the moment many manufacturers are somewhat reluctant to give much information on.

This survey will inevitably pose more questions for manufacturers and agents, many of whom cannot afford to be either complacent or unaware of the competition, and it is getting hotter. Certainly the data that follows suggests that there is an astonishing range of prices and performances. In due course new systems will be launched and existing ones will be refined. L+SI will keep an eye on providing a suitable up-date article in a future edition.

Table 1 Static colour change devices

Device	Classification
Colormag	scroller
Color Pro	cross fader
Color Scroll	scroller
ColorWiz	scroller
Crystal Color	liquid crystal
drum	drum
Eagle	cross snap
Geljet II	scroller
Rainbow	scroller
semaphore	semaphore
wheel	wheel

Table 2 devices that fit existing instruments and offer pan and tilt (some with colour change)

Device	Classification
Lightwiz	yoke (+optional scroller)
Macspot	yoke
Moto-Light	yoke
PALS	yoke
Pancan System 1	mirror
Pancan System 2	mirror
Pancan System 3	mirror

Table 3 Complete devices: pan, tilt and colour change (full remote control)

Device	Classification
Dancer	Par 64 (+optional scroller)
Golden Scan	mirror based

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(Please note, all PanCan heads retro-fit to your existing luminaires)

Lightmover	mirror based
Moto-Arc	spot
Pancan System 4	not yet available
Parscan II	Par 64
PEF-M	TH
Posi-Spot	Par 64
Robot	mirror based
Spectron II	multi-mirror lamp
Starlight	spot
Vari*Lite VL2	spot
Vari*Lite VL3	flood
Visitor	1k TH

product type:	scroller
list price ex vat:	E925
no of colours available:	32
change speed(s):	0.5 sec to 3 min per frame
fits luminaires:	all
control type:	multiplex
colour selection memory:	yes
connectors:	cannon
colour type:	filter
weight:	2kg

Color Pro (Lightwave Research)

Avitec Electronics (UK) Ltd.
Lightfactor Sales Ltd.
(joint UK distributors)

product type:	static luminaire
list price ex vat:	E695
is rental available:	no
no of colours available:	virtually infinite
change speed(s):	0 to 50 seconds
fits luminaires:	own lamp, 3 x MR16, does not fit other luminaires
control type:	data signal RS232
colour selection memory:	yes
connectors:	RS232
weight:	5.5kg
colour type:	dichroic
gobo projection:	yes



Color-scroll

Dyna-Might Sound and Lighting

product type:	scroller
list price ex vat:	\$ 895 US
no of colours available:	6-11
change speed(s):	-
fits luminaires:	standard 6" and 8"; large 12" - will accept barndoors
control type:	0-10
colour selection memory:	yes
connectors:	6 pin DIN
colour type:	filter
weight:	2.2kg

Note: information taken from brochure.

Colorwiz

(Great American Market)

AC Lighting Ltd.
(sole UK distributor)

product type:	scroller
list price ex vat:	p.o.a.
no of colours available:	11
change speed(s):	adjustable



PRODUCT LISTING

Colibri

(Abstract Electronics AB)

Lightfactor Sales Ltd.
(sole UK distributor)

list price ex vat:	from E4964 (8 head system)
remote functions:	pan, tilt, colour change
pan and tilt range:	180 degrees
no of colours available:	3 plus white
colour type:	dichroic
colour x fade:	no
random colour selection:	no
gobo projection:	no
light source:	M60 75W

Despite many requests for information none has been forthcoming, but, in fact, the Colibri system is not a direct comparison with the majority of units mentioned here because of the comparatively small size of its multimirror light source. However, the information above has been taken from Lightfactor Sales catalogue.

Colomag

Cerebrum Lighting
(sole UK distributor)

Presentation Consultants Ltd.
(sole world-wide distributor)

Light & Sound Design Ltd.
(rental enquiries)

**In the time it takes you to read this headline,
the Rainbow Colour Changer can scroll 18 times
through 11 different colours.**

Silently.

The new Rainbow Colour Changer from M&M is not only the fastest on the market, but operates to a degree of silence unapproached by any of its rivals.

Its lightweight construction and ease of maintenance make it a premier choice for any touring company, whilst its speed and versatility of colour allow limitless creative opportunity for lighting designers.

The Rainbow Colour Changer is easy to rig, operating from any 0-10 volt analog - or DMX512 digital output from a standard control desk - and can easily be adapted to fit other lighting instruments in addition to PAR 64's.

The gel roll construction of the Rainbow reduces filter replacement to a matter of seconds, whilst spare rolls can be mounted and stored



for immediate use. The built-in auto-tensioner maintains the tautness of the gel to give perfect lighting every time. With an additional filter holder to enable two units to be used in tandem the operator has access to some 121 colours in all.

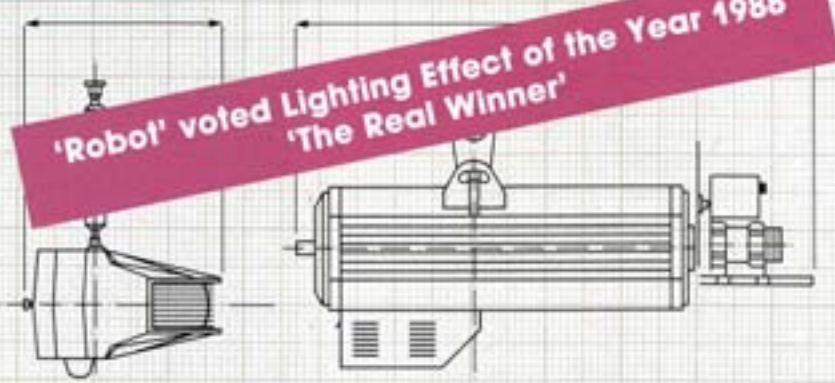
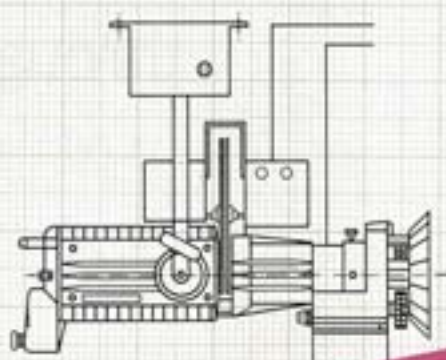
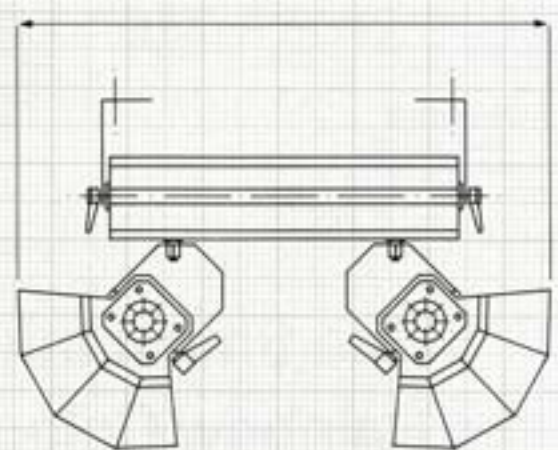
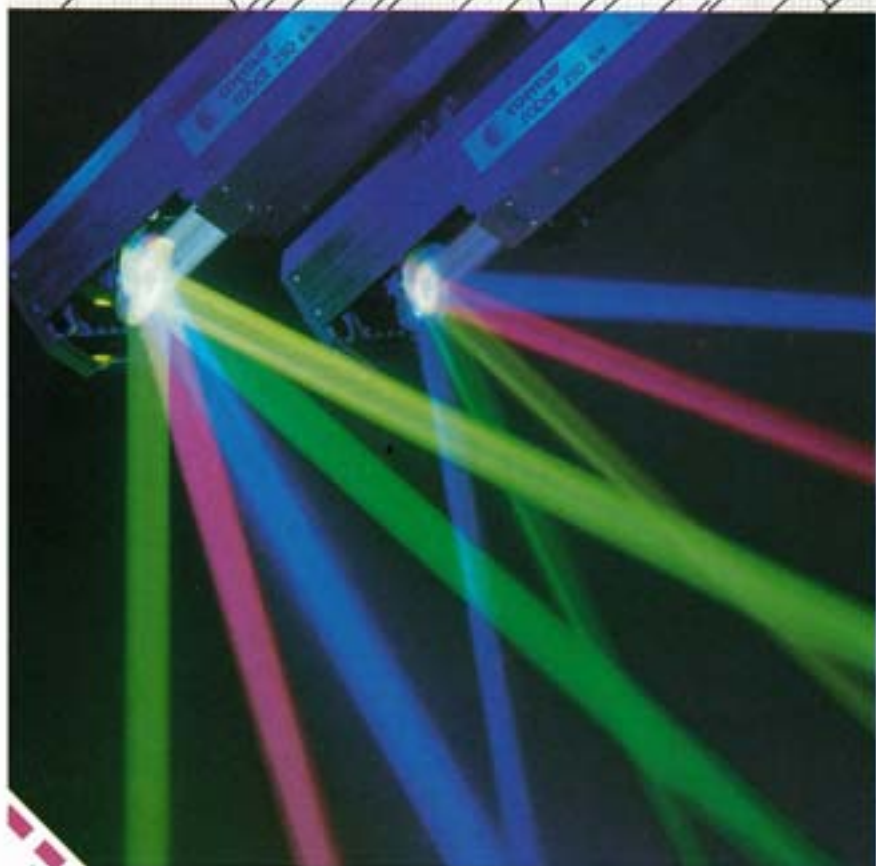
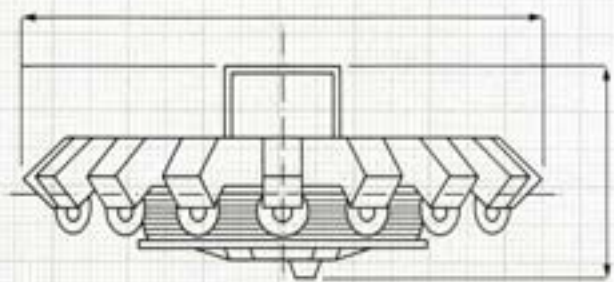
For more information on the most exciting advance in colour changers contact us now for a copy of our brochure.



M&M Lighting Limited, 87 Gloucester Avenue, London NW1 8LB
Telephone: 01-722 4147 Facsimile: 01-586 4886



tomorrow's concepts - today's reality



**'Robot' voted Lighting Effect of the Year 1988
'The Real Winner'**

W.B. Lighting Limited,
4 Tenter Road,
Moulton Park Ind. Est.,
Northampton NN3 1PZ
Tel: (0604) 499331

Coemar S.R.L.
Via Inghilterra,
Castelgoffredo, 46042,
Mantova, Italy

Please send me details of your product range and list of dealers.

NAME: _____

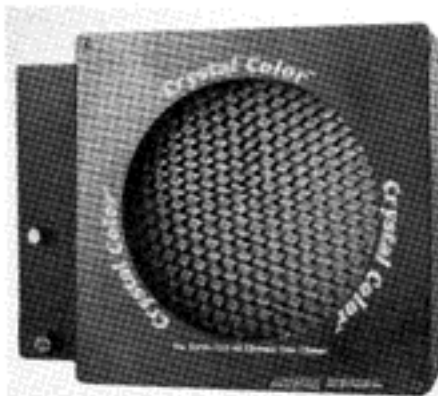
COMPANY: _____

ADDRESS: _____

TEL: _____

POSITION: _____

fits luminaires: 6" and 8"
 control type: analogue dedicated line
 colour selection memory: yes
 connectors: XLR 3 pin
 colour type: filters
 weight: 2kg



Crystal Color

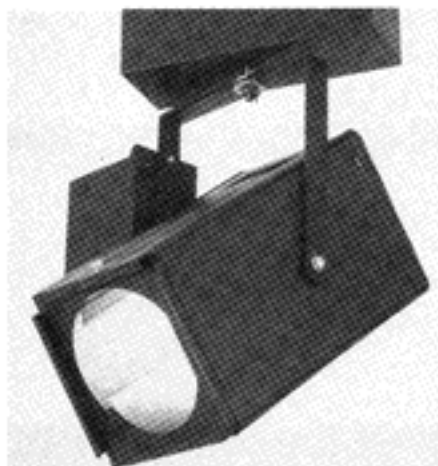
Artifex Corporation

product type: liquid crystal cell
 list price ex vat: under US\$ 500
 no of colours available: 'can scan through a significant portion of the visible colour spectrum'

change speed(s): instantaneous
 fits luminaires: 6" and 8" and Par 64 and Par 56

control type: 0-10
 colour selection memory: yes
 connectors: -
 colour type: liquid crystal
 weight: 2.2kg

Note: Information for the above was taken from a brochure brought back from the Lighting Dimensions Show in Dallas in November.



Spotlight's Dancer.

Dancer (Spotlight)

AC Lighting Ltd.
 (sole UK distributors)

product type: remote yoke with optional scroller

introduction date: 1986
 list price ex vat: E804
 is rental available: yes
 remote functions: pan, tilt, colour change (optional via Colorwiz)

pan and tilt accuracy: +/- 1 degree
 knock reset facility: yes

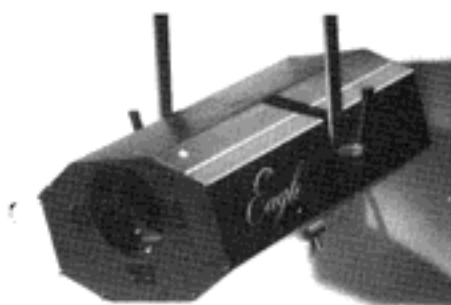
move speed(s): 180 degrees in 2 sec max
 no of colours available: 10
 colour type: filter

colour x fade: no
 random colour selection: no
 gobo projection: no
 light source: Par 64
 dimming type: line voltage
 control voltage: 0 to 10
 weight: 10.8kg

Eagle (Abstract Electronics)

M & M Lighting.
 (sole UK distributor)

product type: static luminaire



Eagle - available in the UK from M&M Lighting.

introduced: 1988
 list price ex vat: E550
 is rental available: no
 no of colours available: 6
 colour type: dichroic
 colour selection memory: yes
 random colour selection: yes
 gobo projection: yes, 6
 light source: 400W 36v
 control voltage: 0 to 10, any analogue or DMX12 control acceptable
 weight: 4kg



Geljet II.

Geljet II (Fine Arts Technologies)

Cerebrum Lighting
 (sole European distributor - sales only)

Avolites Production Co. Ltd.
 (world-wide distribution, non-exclusive - sales and rental)

product type: scroller
 list price ex vat: E625 approx.
 no of colours available: 12
 change speed(s): under 2 secs, end to end
 fits luminaires: Par 64 and 6" Lekos also many fresnels and profiles

control type: 0-10v, any 0-10v controller acceptable

colour selection memory: yes
 connectors: Tajimi
 colour type: filters
 weight: 1kg



The Clay Paky Golden Scan.

Golden Scan (Clay Paky)

Pulsar Light of Cambridge Ltd.
 (sole UK distributor)

product type: full remote, mirror based
 introduction date: 1988
 list price ex vat: E2950 or E3400
 is rental available: no

remote functions: pan, tilt, iris, strobe, shutter, gobo, colour.
 pan and tilt accuracy: identical
 knock reset facility: yes
 move speed(s): 150 degrees in 0.5 sec max
 no of colours available: 6
 colour type: dichroic
 colour x fade: no
 random colour selection: yes
 gobo projection: yes
 light source: HMI 575 or HMI 1200
 dimming type: not available
 control voltage: 0 to 10v, any 0-10v controller acceptable
 weight: 24kg

Lightmover (Avitec Productions GmbH)

Avitec Electronics (UK) Ltd.
 (sole UK distributor)

product type: full remote, mirror based
 introduction date: 1988
 list price ex vat: -
 is rental available: -
 remote functions: pan, tilt, colour change, iris, gobo

pan and tilt accuracy: -
 knock reset facility: -
 move speed(s): -

no of colours available: 9 plus white
 colour type: dichroic
 colour x fade: no

random colour selection: colour change speed max 0.12 sec, min 0.08 sec.
 yes - 6 (change speed av. 0.14 sec.)

gobo projection: -
 light source: HMI 575
 dimming type: mechanical
 control voltage: Multiplex
 weight: 28kg

Note: Lightmover was launched at Discotec at Dusseldorf in November 1988. The information above is included as 'Stop Press' from the brochure.

Lightwiz (Great American Market)

AC Lighting Ltd.
 (sole UK distributor)

product type: retrofit yoke with optional scroller

introduction date: 1987
 list price ex vat: E1573
 is rental available: no
 remote functions: pan and tilt
 pan and tilt accuracy: 0.5 degree

knock reset facility: -
 move speed(s): variable
 colour: via luminaire (Colorwiz suggested)

gobo projection: via luminaire
 light source: via luminaire
 dimming type: via luminaire
 control voltage: 0 to 10v, any 0-10v controller acceptable

weight: 11kg

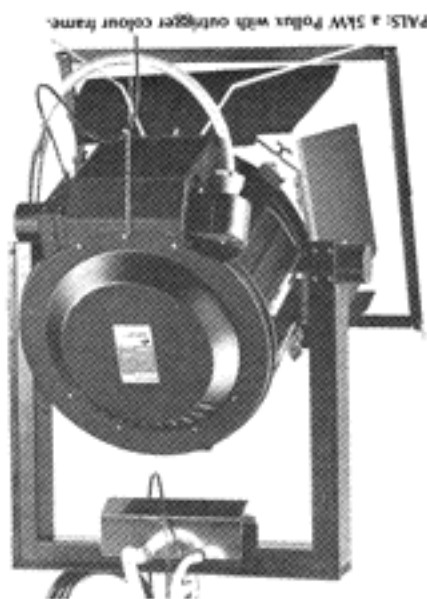
Macspot (ACR)

Optikinetics Ltd.
 (sole UK distributor)

product type: retrofit yoke
 introduction date: 1982



Macspot.



PALS 4 SHW Proflex with outigger colour frame.

PALS

Strand Lighting

The above information was taken from a brochure collected by the editor at the Lighting Dimensions show at Dallas in November 1988.

product type:	retrofit yoke with scroller
introduction date:	1987
list price ex vat:	£1795
is rental available:	-
remote functions:	pan, tilt, (optional) iris
pan and tilt accuracy:	degree tilt
move speed(s):	3.5 sec to 40 sec.
no of colours available:	none, unless fitted with gobo colour change filter
gobo projection:	via luminaire
light source:	via luminaire
dimming type:	0 to 10
control voltage:	12.5kg
weight:	

Moto-Light Moto Yoke

Dyna-Might Sound and Lighting

product type:	retrofit yoke, fits any 61/4" to 101/4" lamp
introduction date:	\$1795 US
list price ex vat:	-
is rental available:	-
remote functions:	pan, tilt, (optional) iris
pan and tilt accuracy:	range is 360 degree pan, 280 degree tilt
move speed(s):	3.5 sec to 40 sec.
no of colours available:	none, unless fitted with gobo colour change filter
gobo projection:	via luminaire
light source:	via luminaire
dimming type:	mechanical iris
control voltage:	0 to 10
weight:	25.5kg

Moto-Arc

Dyna-Might Sound and Lighting

product type:	full remote
list price ex vat:	\$7500 US
is rental available:	-
remote functions:	iris, gobo, colour change (plus pan/tilt when fitted with Moto-Yoke)
no of colours available:	21 via in-built scroller
colour x fade:	no
random colour selection:	yes, 4 patterns available
gobo projection:	Gram HTI 400 ARC
light source:	mechanical iris
dimming type:	0 to 10
control voltage:	25.5kg
weight:	

Pancon System 4

product type:	retrofit mirror
introduction date:	1985
list price ex vat:	£224 trade, £375 retail
is rental available:	yes
remote functions:	pan, tilt, colour change
pan and tilt accuracy:	+/- 0.5 degree
knock reset facility:	yes
move speed(s):	360 degrees in 1.3 seconds, adjustable
no of colours available:	4
colour type:	filter
colour x fade:	mechanical
random colour selection:	no
gobo projection:	via luminaire
light source:	via luminaire
dimming type:	0 to 10 or -5 to +5 or -10
control voltage:	via luminaire
weight:	2.8kg

Pancon System 3

product type:	retrofit mirror
introduction date:	1982
list price ex vat:	£1000 trade, £1500 retail (head only)
is rental available:	yes
remote functions:	pan, tilt, colour change
pan and tilt accuracy:	+/- 0.25 degree
knock reset facility:	yes
move speed(s):	360 degrees in 3.6 sec
no of colours available:	4
colour type:	filter
colour x fade:	mechanical
random colour selection:	no
gobo projection:	via luminaire
light source:	via luminaire
dimming type:	0 to 10 or -5 to +5 or -10
control voltage:	via luminaire
weight:	3.2kg

Pancon System 2

product type:	retrofit mirror
introduction date:	1981
list price ex vat:	£168 trade, £280 retail (head only)
is rental available:	yes
remote functions:	pan and tilt
pan and tilt accuracy:	+/- 5 degrees
knock reset facility:	no
move speed(s):	360 degrees in 7 to 16 sec
no of colours available:	none other than filter in luminaire
colour type:	na
colour x fade:	na
random colour selection:	via luminaire
gobo projection:	via luminaire
light source:	via luminaire
dimming type:	via luminaire
control voltage:	+/- 15v motor supply
weight:	2.3kg

Pancon System 1

product type:	retrofit mirror
introduction date:	1981
list price ex vat:	£300
is rental available:	yes
remote functions:	pan and tilt
pan and tilt accuracy:	+/- 5 degrees
knock reset facility:	no
move speed(s):	360 degrees in 7 to 16 sec
no of colours available:	10 different sizes available
change speed(s):	1.5 to 20 sec
control type:	dedicated daisy chain
colour selection memory:	yes
connectors:	XLR 5 pin
colour type:	filters
weight:	2.5kg

Pancon Drum

product type:	retrofit mirror
introduction date:	1981
list price ex vat:	£300
is rental available:	yes
remote functions:	pan, tilt, colour change
pan and tilt accuracy:	+/- 0.05 degree
knock reset facility:	yes
move speed(s):	360 degrees in 1 sec.
no of colours available:	4
colour type:	filter
colour x fade:	yes
random colour selection:	no
gobo projection:	via luminaire
light source:	via luminaire
dimming type:	line voltage
control voltage:	24
weight:	-

Post-Spot (Amptown)

product type:	full remote
introduction date:	1980, earlier version 1959
list price ex vat:	40,000 to 58,000 (Austrian)
is rental available:	no
remote functions:	pan, tilt, colour change
pan and tilt accuracy:	+/- 1 degree
knock reset facility:	yes
move speed(s):	360 degrees in 90 sec
no of colours available:	512
colour type:	-
colour x fade:	yes
random colour selection:	yes
gobo projection:	via luminaire
light source:	tungsten halogen
dimming type:	dimming possible
control voltage:	0 to 10
weight:	20kg

Ludwig Poni

PEF-M

product type:	full remote
introduction date:	1986
list price ex vat:	p.o.a.
is rental available:	no
remote functions:	pan, tilt, colour change
pan and tilt accuracy:	+/- 3 degrees
knock reset facility:	yes
move speed(s):	2.5 sec to 2.5 min (360 degree pan), 1.5 sec to 2.5 sec (200 degree tilt)
no of colours available:	16 full colour, 1.5 sec
colour type:	filter
colour x fade:	no but moves between adjacent filters in 0.25 sec
random colour selection:	no
gobo projection:	no
light source:	Par 64
dimming type:	line voltage
control voltage:	digital via Strand
weight:	14kg

Parscan II

Strand Lighting



product type:	full remote
introduction date:	1986
list price ex vat:	p.o.a.
is rental available:	no
remote functions:	pan, tilt, colour change
pan and tilt accuracy:	+/- 3 degrees
knock reset facility:	yes
move speed(s):	2.5 sec to 2.5 min (360 degree pan), 1.5 sec to 2.5 sec (200 degree tilt)
no of colours available:	16 full colour, 1.5 sec
colour type:	filter
colour x fade:	no but moves between adjacent filters in 0.25 sec
random colour selection:	no
gobo projection:	no
light source:	Par 64
dimming type:	line voltage
control voltage:	digital via Strand
weight:	14kg

(Brand's colour scroller is also available separately.)

(sole UK distributor) Cerebium Lighting Ltd.

introduction date: 1987
 list price ex vat: £845
 is rental available: no
 remote functions: pan, tilt
 pan and tilt accuracy: +/- 1 degree
 knock reset facility: no
 move speed(s): not known
 no of colours available: 1
 colour type: filter
 colour x fade: n/a
 random colour selection: n/a
 gobo projection: n/a
 light source: Par 64
 dimming type: internal line voltage
 control voltage: Multiplex
 weight: 15kg



Rainbow.

Rainbow (Camelont AB)

M & M Lighting

product type: scroller
 list price ex vat: £600
 no of colours available: 11
 change speed(s): full scroll in 0.8 sec
 fits luminaires: any size from Par 64 down
 control type: no special control needed
 any 0-10v analogue or DMX12 acceptable

colour selection memory: yes
 connectors: as requested
 colour type: filters
 weight: 2kg

Robot (Coemar)

WB Lighting Ltd.
 (sole UK distributor)

product type: full remote, mirror based
 introduction date: 1986
 list price ex vat: £2700 to £3300
 is rental available: yes
 remote functions: pan, tilt, colour, gobo
 pan and tilt accuracy: +/- 1 degree
 knock reset facility: yes
 move speed(s): 320 degrees in 1 sec max
 no of colours available: 4 plus white
 colour type: dichroic
 colour x fade: no
 random colour selection: yes
 gobo projection: yes - 6 available
 light source: SN250 or HT1 400
 dimming type: not available, but blackout possible
 control voltage: 0 to 10 or digital
 (own controller available)
 weight: 21kg

Semaphore

CCT Theatre Lighting Ltd.

introduced: 240v version 1973
 24v version 1979
 is rental available: yes
 list price ex vat: 6" £200, 8" £210
 no of colours available: 4
 change speed(s): 4 secs
 fits luminaires: 6" and 8"
 control type: dedicated line, 24v
 colour selection memory: yes, via Celco
 connectors: XLR 6 pin
 colour type: filter
 weight: 6" - 3kg, 8" - 3.4kg

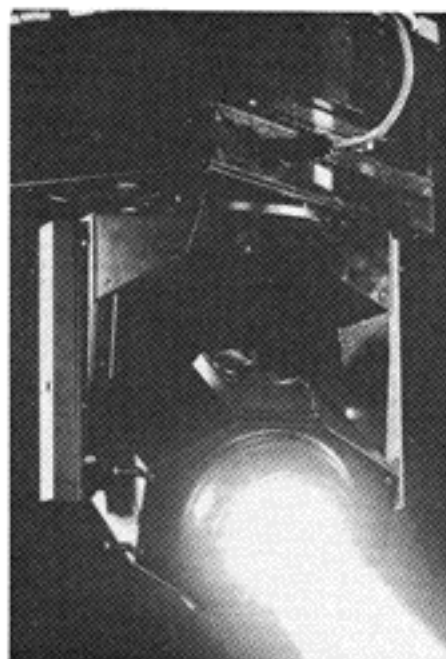
Please note: Strand Lighting also supply semaphore and wheel colour change devices.

FOR SPEEDY INFORMATION
 TO LIGHTING + SOUND
 Telefax (0323) 646905

Spectron (ACR)

Optikinetics Ltd.
 (sole UK distributor)

product type: full remote
 introduction date: -
 list price ex vat: p.o.a.
 is rental available: no
 remote functions: pan, tilt, colour change
 pan and tilt accuracy: +/- 2 degrees
 knock reset facility: -
 move speed(s): 180 degrees in 5 seconds
 no of colours available: 6 plus white
 colour type: dichroic
 colour x fade: no
 random colour selection: yes
 gobo projection: no
 light source: GE multimirror 360W 82v
 dimming type: internal line voltage
 control voltage: +5v pwm, 1-2 Mbsec
 weight: 3.5kg



Tasco's Starlight MkII.

Starlight MkII

Tasco Communications Ltd.

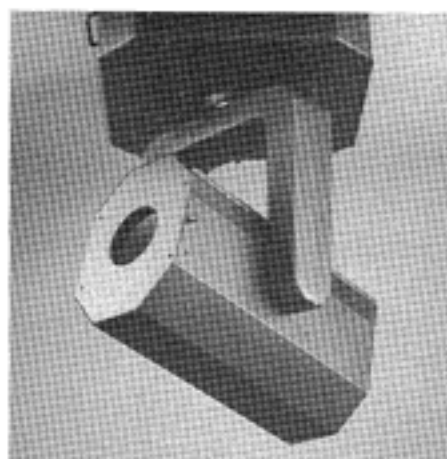
product type: full remote
 introduction date: 1986(Mk1), 1988(Mk2)
 1989(Mk3)
 list price ex vat: p.o.a.
 is rental available: yes
 remote functions: pan, tilt, colour change
 iris, beam edge
 pan and tilt accuracy: pan 0.35 degree,
 tilt 0.26 degree
 knock reset facility: yes
 move speed(s): 360 degrees pan-3 sec
 270 degrees tilt-2 sec
 no of colours available: any combination from
 4 wheels, 5 colours each
 dichroic
 colour type: only on Mk 3
 colour x fade: yes
 random colour selection: yes
 gobo projection: yes 5 (rotating
 available, Mk 3)
 light source: Wotan HT1 400
 dimming type: mechanical
 weight: 25kg

Tasco also manufacture a computerised Colorchanger (scroller) system which will fit Pars, Lekos and CCT Silhouettes, in addition to Molefay and Par-cyc units. The device produces 16 colours which can be memorised and changed with variable speed

Vari*Lite VL2

Samuelson Vari-Lite Europe, Ltd.

product type: full remote
 introduction date: 1987
 list price ex vat: not for sale
 is rental available: yes, rental only
 remote functions: pan, tilt, colour change
 iris, beam edge
 pan and tilt accuracy: no discernable inaccuracy
 knock reset facility: yes
 move speed(s): 0 sec to 10 hours
 no of colours available: 120
 colour type: dichroic



Vari*Lite VL2 spot luminaire.

colour x fade: no
 random colour selection: yes
 gobo projection: yes
 light source: metal halide arc
 dimming type: mechanical iris
 control voltage: digital bi-directional
 balanced line, own
 control needed
 weight: 26kg

Vari*Lite VL3

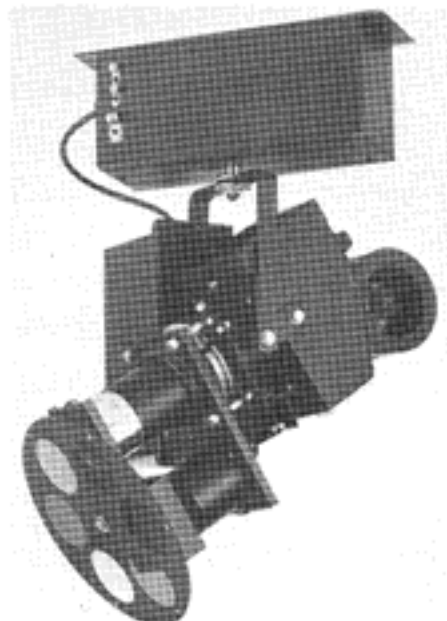
Samuelson Vari-Lite Europe, Ltd.

product type: full remote
 introduction date: 1987
 list price ex vat: not for sale
 is rental available: yes, rental only
 remote functions: pan, tilt, colour change
 iris, beam edge
 pan and tilt accuracy: no discernable inaccuracy
 knock reset facility: yes
 move speed(s): 0 sec to 10 hours
 no of colours available: 1000+
 colour type: dichroic
 colour x fade: yes
 random colour selection: yes
 gobo projection: no
 light source: 475W 53 volt tungsten
 dimming type: internal electronic
 control voltage: digital bi-directional
 balanced line, own
 control needed
 weight: 26kg

Visitor (Spotlight)

AC Lighting Ltd.
 (sole UK distributor)

product type: full remote
 introduction date: 1986
 list price ex vat: p.o.a.
 is rental available: yes
 remote functions: pan, tilt, colour change
 iris



The Spotlight Visitor.



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Tel: 01-390 0051/01-390 4841 Fax: 01-390 4938 Telex: 892337

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THORN EMI Strand Lighting

ICELIGHTS LTD LIGHT PROCESSOR

GENERAL ELECTRIC THOMAS

theatre lighting



Supplier Contact Information

Standard lighting also supply semaphore and wheel colour change devices

pan and tilt accuracy:	+/- 1 degree
knock reset facility:	yes
move speed/ft:	180 degrees in 20 sec max
no of colours available:	6
colour type:	filter
colour x fade:	no
random colour selection:	no
gobo projection:	yes
light source:	1 KW halogen
dimming type:	line voltage
control voltage:	0 to 10
weight:	16kg

CCT Theatre Lighting Ltd

produced:	1980
is rental available:	yes
list price ex vat:	£120.76
£12.50	6"
no of colours available:	5
change speed/ft:	2 rpm
fit furniture:	41/2", 6"
control type:	multiple, can interface with memory desks
connectors:	3LR 3 pin
colour selection memory:	not available
weight:	6" - 1.2kg

AVTIC ELECTRONICS (UK) LTD	8081 Walsworth Road, Hitchin, Herts SG4 9SX Tel: (0462) 58961 Fax: (0462) 37079
AVOTIS PRODUCTION CO LTD	104 Park Avenue, London, NW10 7XL Tel: 01-965 8522 Fax: 01-965 0290
CCT THEATRE LIGHTING LTD	Windsor House, 26 Willow Lane, Medham, Sundry CR4 4NA Tel: 01-640 3366 Fax: 01-640 5263
CEREBRUM LIGHTING (SALES AND HIRE) LTD	168 Chiltern Drive, Surbiton, Surrey KT5 8LS Tel: 01-390 0051/4841 Fax: 01-390 4938
DYNAMIGHT SOUND AND LIGHTING	3119A South 50m, Springfield, Missouri 65807 USA Tel: (417) 883 4549
LIGHTFACTOR LTD	11 Farway Drive, Farway Trading Estate, Clevedon, Notts NG6 8PW Tel: 01-575 5566 Fax: 01-575 8678
LIGHT AND SOUND DESIGN LTD	201 Coventry Road, Birmingham, B10 0KA Tel: 021-766 6400 Fax: 021-766 6150
LUDWIG PARI	A-1070 Wien, Kaglgasse, 23 - Austria Tel: (1) 932462
MAM LIGHTING LTD	87 Gloucester Avenue, London NW1 8LB Tel: 01-722 4147 Fax: 01-586 4886
OPTIKINETICS LTD	38 Cromwell Road, Luton, Beds LU3 1DN Tel: (0582) 411413 Fax: (0582) 400613
PANCAN LTD	83 Gloucester Road, Brighton, East Sussex BN1 4AP Tel: (0273) 622043 Fax: (0273) 682674

PRESENTATION CONSULTANTS LTD	168 Chiltern Drive, Surbiton, Surrey KT5 8LS Tel: 01-390 4841 Fax: 01-390 4938
PULSAR LIGHT OF CAMBRIDGE LTD	Henry Road, Cambridge CB1 3EA Tel: (0223) 66798 Fax: (0223) 460708
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Scorpio Claws Multiform into Theatre Market

Julian Williams talks to Iain Price-Smith at Multiform's Uckfield base in deepest Sussex, and charts the course of one of the industry's longest-established operations.

He claims that one of the secrets of his success is his intimate involvement in every aspect of the business and his ability to preempt clients' needs. Wearing a marketing hat as well as a design engineering one, he is able to keep closely in touch with current developments. He admits, however, that he hasn't been beset by some of the troubles that have plagued others: "I know that I haven't had the problems of some of my competitors, where the marketing people don't communicate through to the designers what the users actually want." He has also learnt to recognise the difference between what people think they need and what they actually need!

The essence of the continuing success of the Multiphase series lies in the fact that during the early 80's, Iain realised he was going to have to rationalise his equipment with the increasing demands for versatile lighting control. He closed up shop for a brief period and disappeared to a Greek island, taking only pen and paper, and spent many candlelit nights completely redesigning the product range with several different options, whereby he could manufacture a number of products using the same metalwork parts and circuit boards. Out of all this came the 420 series.

All the control units were fitted with a slave output as standard. This allowed the 424 control slave units to be connected with any of the other control units, and enabled other dimmer packs to be hung from compatible equipment. Thereafter, the new products followed relatively quickly as market demand gathered pace. These included such systems as the 6 way 420 for band lighting, with a footswitch unit, extra master fader and auto-fader; and the 426 controller offering the controls without the dimmers inside a 6 way zoner unit, allowing 6 slave packs to be driven from one controller with individual dimming on each.

Soon after came the Finspot revolution which required low voltage facilities for driving inductive loads and resulted in

(manufacturing security signalling systems and sub-contract assembly of sound desks) before he started to produce a handful of products at the start of the disco revolution in the early 70's.

Towards the end of the 60's, when there existed the early forerunners to the discoteque console - two turntables, two amplifiers - Multiform was asked to design a simple sound-to-light system to complement the increasing trend towards automatically activated lights responding to particular beats of music. At the time, the company was busy supplying the entire Court School of Dancing ballrooms, situated above hundreds of Canada and ABC cinemas around the country, with purpose made amplifiers. Realising the potential of the sound-to-light system, Iain decided to incorporate the product fully into his company's portfolio, rather than assigning it a supplementary role to the main line of business. As a result, the company then developed the purpose-built steadfast Multiphase 410 four channel consolidated lighting controller to include extra facilities, when other manufacturers of the time were contenting themselves with three channel controllers. All this happened during the difficult period of recession in the early 1970's, and he remembers the days when they had to shut down the factory in order to create enough portable generator power just to make a cup of tea during the three day working week.

Experienced in manufacturing for reliability in the security systems market, Iain felt it a natural progression for his production people to commence the manufacture of lighting controllers: "I am going to make what I think is right, and make it as good as I can," Iain said. He now recognises that he was wrong in some of his earlier judgements, and has not been altogether successful with some of his own product ideas, but he has persevered to produce equipment of quality. He is totally committed to what he is doing in a specialised market, and made it clear to me that he is not in the industry purely for monetary gain.

Surviving in the harsh, competitive world of entertainment lighting control is one thing, but to come through the recession of the mid 70's and to keep operating for a further 20 years as a one man band is another. And it has required more than a little dedication. At this year's PLASA Light and Sound Show, Multiform Electronics, launched Scorpio, an 18 way electronically programmed memory desk primarily aimed at the discotheque and rock band markets. And for Iain Price-Smith it has fulfilled a long held ambition to develop a conventional stage lighting desk.

Having graduated from Manchester University in electrical engineering, Iain Price-Smith already had his company up and running



Iain Price-Smith with module rack unit.



Knob capping on the Scorpio production line.



Mike Calloway, design engineer, prepares software for the new Quattro.

the 412 control unit being adapted from the 410 system.

In 1986, Rakpac was introduced and this marked the beginning of Multiform's entry into the stage lighting equipment market. The following year, the company decided to change the visual appearance of their discotheque product range, with the launch of the Lightmix 430, which replaced the 426 system. They also introduced a new, more tasteful colour scheme with lilac graphics and red knobs.

At the beginning of this year, steps were taken to further improve product packaging. With pale blue graphics and grey knobs, and less garish than the colours previously associated with Multiform products, the Scorpio range was introduced to the market.

Once the company had drawn up the specification, they invited design consultants Space Logic to contribute ideas. The consultancy suggested features such as the small illuminated window and proposed the final external profile which allowed optional provision for rack mounting, flight case mounting, a console fitting from a standard chassis and to incorporate all configurations of the socket mountings. The final design enables a minimum production run of 25 units at any one time.

A thoughtful feature of the desk is a facility for the operator to rest the hand on a comfortable rubber border, below the slider fader levers, allowing the fingers to be as manipulative as possible! Being the electronic equivalent to a desk that has matrix sub-master group presets, the dual functions of the flash buttons can also be used whilst in the 'input mode' to assign a combination of channels to a particular fader.

The illuminated display window in the top right hand side of the desk gives a single numerical display, showing the operator



Iain Price-Smith introduces Scorpio.

which mode is currently in use. Programming is achieved very simply by a key, which selects the desired function, and a set of indicators is then illuminated which lead the operator through a sequence, step by step.

Beneficial to hire companies is the compatibility of the equipment which facilitates the linking of two, three or four Scorpions together. Multiform are shortly to make available an 18 channel, 2 preset desk, which may also be attached to a Scorpio.

There are two options for the matrix group facilities on Scorpio. One is for the slave channels to be matrixed from a channel on the master board, or alternatively, for a channel to be matrixed from a channel within its own slaved board.

Along with the new version of the original 420 series, the Mark II 421 in the new livery, Multiform are also introducing a micro-processor based, 4 zone disco controller called the Quattro, early in the new year.

Iain Price-Smith has sought to run his



Hugh Douglas: stores manager and prototype builder.

business over the years by aiming to achieve customer satisfaction and ensuring that those who work for him feel that their contribution is important. Success achieved whilst working to certain guidelines means that the company does well, and those who work within it also benefit.

The main aim with these objectives, Iain told me, is to guarantee the continued involvement, at all levels, of the person at the top. He claims that once you move away from that position, you lose your direction - a division he has often witnessed in other companies. He has certainly managed to run his own operation in such a manner as to achieve a great deal of success without losing contact with his main objectives.

Iain Price-Smith's principles lie within the philosophy based on the 'smaller working unit' and 'personal satisfaction'.

In Multiform's case, small is beautiful . . .



Iain Price-Smith with various console assemblies including Scorpio.



Iain with office manageress Joan Grantham.



Mike Galloway and another view of the Scorpio in production.

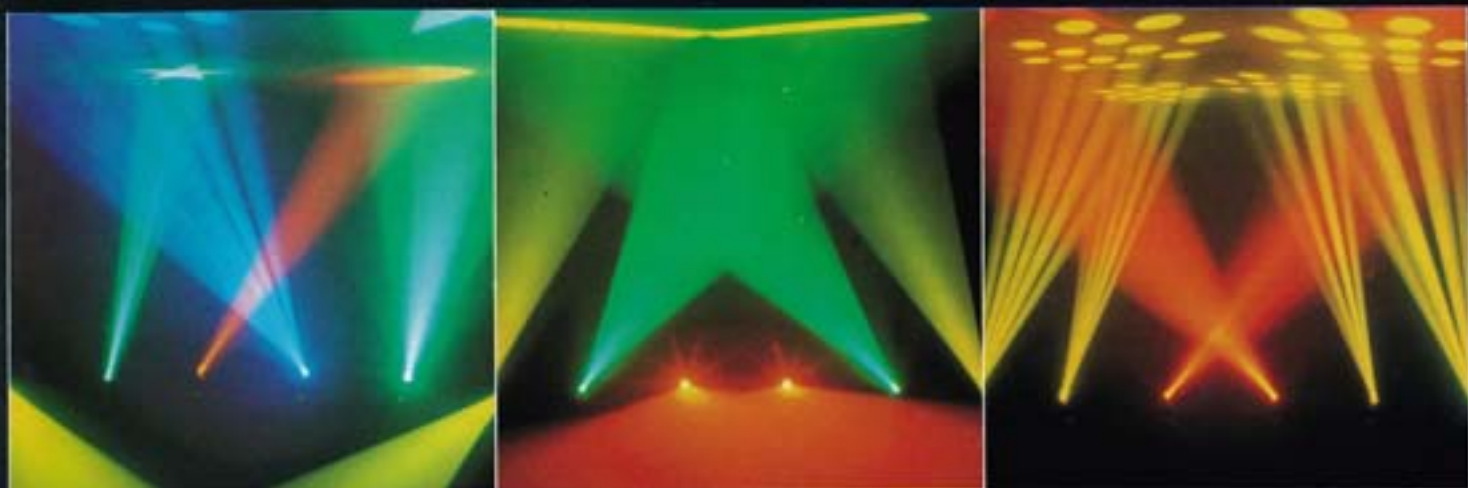


Test engineer Philip Hills at the work bench.

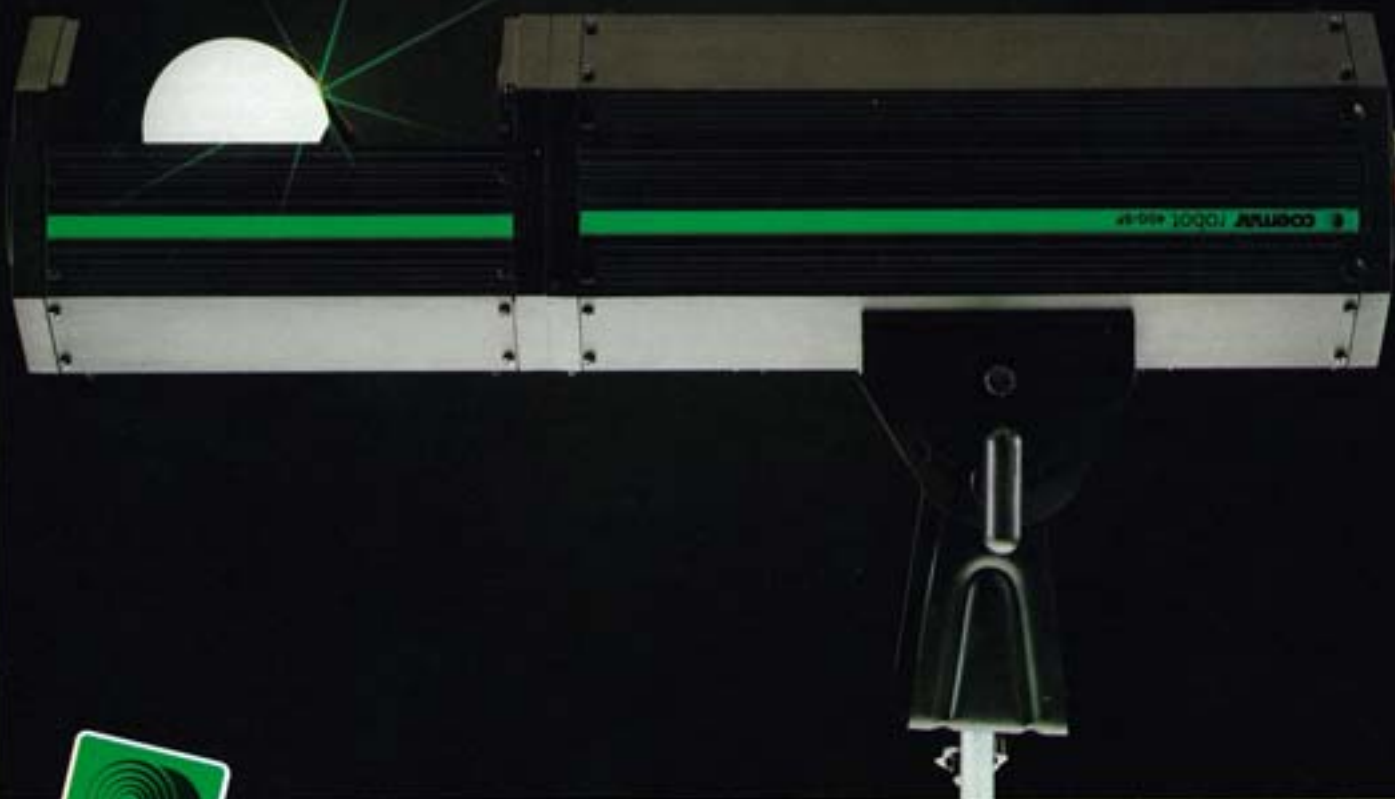
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Pal Joey: a Fresh Alternative?

Ruth Rossington visits the West End's latest nightspot.

Pal Joey, the latest addition to London's nightlife, is situated deep in the heart of the West End between Carnaby and Regent Streets. The club opened its doors in early November with all the fanfare and heraldry that is customary on these occasions.

Being first through the door didn't actually do anything for my ranking in the credibility stakes, but it did facilitate the opportunity to view the no expense spared refurbishment of the venue.

Owners Premier Leisure Group have created an opulent and tasteful ambience, which they have combined, to good effect, with the latest innovations currently being displayed in the field of technology. Art Deco furnishings and a touch of Hollywood mystique dominate the interior decor at Pal Joey, with richly embroidered chintz coverings and muted lighting providing the background whilst images from the cinema of the thirties bring to the fore the era of the golden screen.

Inspired by the Frank Sinatra movie and musical Pal Joey, the club blends stills from the film with a design concept intentionally reminiscent of society's earlier fashionable decadence. Clean, curved lines and black, chrome and mirror finishes add to the period effect of the interior. An intimately lit restaurant and piano bar disappear into the darker recesses of the club, leading one on towards the VIP area and champagne bar and ultimately to the sophisticated, contemporary lighting in the discotheque. It has to be acknowledged that the blending of the past with the present works very well, and the anticipated clash is not forthcoming.

Wahid Samady, co-owner of the club, took a moment to explain the theatrical bias: "Pal Joey's design concept sets it apart on the London club scene, its atmosphere is crisp and cosmopolitan, yet warm and intimate enough to welcome its guests."

Wahid Samady has pinpointed just what it is that makes the blending of various sophistications simplicity itself. It's a concept that isn't always successful, and there's many a club that can testify to the difficulty in achieving the right balance. The carefully constructed elegance, and the somewhat fragile quality are vital to this exclusive membership-only club, which is intent on rivalling the established venues of New York, Paris and Rio.

One mustn't be fooled by the delicate atmosphere that pervades the air, for the decor is merely the embellishment for an extremely well thought out, diverse and flexible entertainment concept. Nowhere is this better demonstrated than in the lighting design which has been created to cover a variety of applications. On opening night those in attendance were treated to a state-of-the-art presentation of lighting and sound designed and engineered specifically for the club by SuperVision International Discotheque Services Limited.

SuperVision, a London-based 'complete international discotheque services' company, is responsible for many of the spectacular effects in up-market hotel discotheques around the world. Chris Bradbury, the company's managing director, is well-known and



Opening night at Pal Joey in Kingly Street, W1 November 10 1988.

respected within the lighting and sound industry. He established the company in 1982, after having gained over 10 years experience in lighting and sound installation and design.

In 1979, he designed the lighting for Tokyo Joe in London and has never looked back since, adding to his list of credits at least five major hotel/club schemes each year. One of his most recent ventures was the provision of lighting for Scarlets in St. Peter Port, Guernsey (see L+SI May 1988).

Pal Joey's is just another in a long line of successes; it is the sort of versatile entertainment concept that Chris Bradbury is keen to pursue in all his operations.

Discussing the sound system, he told L+SI: "Most of the equipment is British, with

amplification by Quad. A phase related ambience generator (P.R.A.G. system), devised by audio consultant Karl Brown, is just one of the unusual features that the company have incorporated into the design, expanding the sound to give a fuller, richer quality. Instead of the mid-range bias found in most discotheque sound systems, Pal Joey features a special synthesis of speaker placement, with sub-bass and bass sounds projected from below the dance floor and tweeters arrayed overhead."

The original intention was that the dance floor be sunken, enabling the placement of the speakers in grilles running around the sides of the floor area. On arrival for the installation, however, Chris Bradbury and his

Supervisor's Chris Bradbury at the controls with Billie, the club's resident lighting rig.



30 metres Tivoli display

10 x lengths Linelash
16 x Par 38
36 x Pansors for random ceiling chase
2 x Optikinetics Stroblowers
4 x Optikinetics Flatpots
4 x Optikinetics Flatpots
32 x Neon rings with Tivoli inserts
4 x Wardscope hydraulic lifting arms
16 x CCT Miniwatt floods
8 x Fanlights
8 x Optikinetics Rotators
1 x Coemar Fiora
1 x Coemar Super Controller
4 x Coemar Robots

Lighting Equipment:

16 x Goodmans Jarno compact 60 speakers
generator
1 x Karl Brown custom built phase related ambience
8 x Piezo PCT-2000 super tweeters
1 x Custom sub-bass bin (Causis driver 15")
2 x Custom bass bins (Causis drivers 12")
6 x SV90 wide dispersion speakers (R.C.I. drivers)
1 x Harrison XI 300 bridged mono amplifier
5 x Quad 606 400 watt bridged mono amplifiers
1 x Quad 405-2 200 watt amplifier
graphic
2 x G100 Pro series background control mixer and
2 x Harrison AC 600 4-way stereo crossover
1 x Harrison CP 230 60 band graphic equaliser
2 x Technics RS1-33R twin deck cassette player
1 x Technics SL-PT1000 programmable CD player
2 x Technics SL 1210-2 turntables
1 x Technics SLP-1200 professional compact disc player

Sound Equipment:

The flexibility afforded by the design gives Pal Joey's integrated system the capacity to provide both sophisticated entertainment and functional lighting for live acts and pro-duct launches. Combined with the hydraulic floor which raises to form a catwalk, the lighting extends Pal Joey's capabilities further to include fashion and beauty shows.

The flexibility afforded by the design gives Pal Joey's integrated system the capacity to provide both sophisticated entertainment and functional lighting for live acts and pro-duct launches. Combined with the hydraulic floor which raises to form a catwalk, the lighting extends Pal Joey's capabilities further to include fashion and beauty shows.

The lighting is based around four Coemar Robots and a Coemar Fiora centre-piece coupled with the first Optikinetics Stroblower units to be seen in operation in the UK. The Stroblower system delivers high definition high colour temperature light beams which cut through the lights show with synchronised colour sequences. The lights are suspended from a Trilite structure which arches up above the floor to give an image of space. There are also four hydraulic arms which move in wide arcs and incorporate neon rings with Tivoli inside and with an Optikinetics Flatspot unit at the end. The Trilite itself becomes part of the light show by glowing when exposed to ultra-violet black light. (Chris Bradbury has been out and about with the LV paint again). All lighting control equipment, apart from the separate Robot control, is Zero 88 equip-



Pal Joey: Supervisor's lighting in action.

1 x Quatrlog smoke machine
4 x LV tubes
Custom built Trilite truss
1 x Mercury controller
6 x matrix interfaces
1 x Sigma slave pack
22 x Delta slave packs
1 x Lightmaster 1300
1 x Touchlight 12

(all control from Zero 88)



A close-up of the lighting rig.

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Bose in the Cinema

Ben Duncan continues his study of Cinema Sound

Several film excerpts were shown, demonstrating sonic performance with the different varieties of magnetic and optical soundtracks. Also, the design methodology of Bose's audition was confused by a simultaneous demonstration of a range of film sound processors by **Katech**, designed to compete in the cinema, although Bose pointed out that they "... have no preference for any one manufacturer's processors...". The sound was respectable on the whole, but still, it was harsh and a bit confused on loud passages (so was that on the print or a problem with **Katech's** processor?), and the low bass was somewhat 'boomy'. Having an intimate knowledge of film soundtracks, Peter Lodge of **Sound Associates** went further, pointing out that on one orchestral piece, the end music of E.T., several orchestral sections, notably the mids containing horns and cellos, were plainly missing. An honest assessment would surely have been more forthcoming had Bose arranged at least one A-B demonstration, against the existing THX/JBL/Dolby installation.

The presentation accompanying various film soundtracks was led by Brian McCarty, who has worked as a consultant to Bose over the past three years. Brian spent 10

years as a Hollywood sound production technician whose credits include 'Footloose' and 'Sweet Dreams'. The thrust of his arguments were loosely based on a paper entitled 'Wide Dispersion Loudspeakers in the Cinema' which outlines Bose's perception of cinema sound, what's wrong with it - and how it could be improved, using Bose speakers, of course.

Unfortunately, in developing an argument to suggest that the multiple driver, wide-dispersion direct-radiator speakers already manufactured by Bose are superior to what's been developed over the past half century, the text contains a number of misconceptions, which in my view erode its credibility. Summing up, the arguments for using Bose loudspeakers challenge a large body of established acoustic knowledge. Hereby is healthy, but Bose's argument is notably lacking in hard evidence and tabulated data.

Informed experts are concerned that whereas Bose's approach with highly reflective acoustics seems to work in some situations, it's unpredictable; little is known about the behaviour of sound under these circumstances. There's also concern that Bose aren't working with Lucas Film (led by George Lucas, Hollywood producer par excellence), who've been responsible for improving the standards of global cinema sound in the past decade. By going it alone, Bose are prejudicing an opportunity that's unique to cinema, namely standardised sound playback - in an environment which complements the acoustics of the studios where the soundtracks are originally mixed.

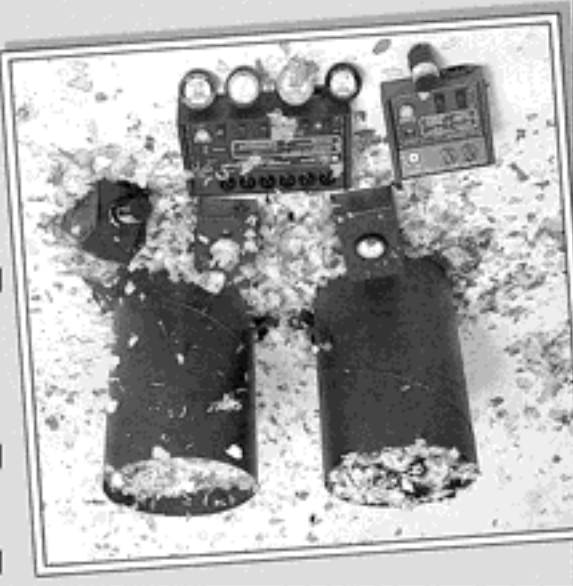
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Wide dispersion loudspeakers in the cinema' is available from:

Bose (UK) Ltd., Trinity Trading Estate, Sittingbourne, Kent ME10 2PD.
 Tel: (0795) 75341.

Further information on **Katech** processors and amplifiers is available from their UK distributors: Screench Motion Picture Ltd, 23 Wrotham Road, Gravesend, Kent DA11 0PA.
 Tel: (0474) 333111.

Regent Street Lights: Fairytale Elegance

L+SI gets the story behind the Regent Street Christmas illuminations.

A touch of class has been added to the capital's Christmas decorations this year. Visitors cannot have failed to notice a more subtle approach to the festive lighting garlanding London's Regent Street. The present display heralds a new departure for Regent Street, traditionally the showcase for large and showy festive illuminations.

Those who seek no more than the usual bombardment of Christmas images are in for a disappointment, and their expectations are almost certainly going to be flawed. This year, the emphasis is on style rather than spectacle - razzamatazz is out and elegance is in.

Leading design and communications company, Imagination Limited, was appointed by the Regent Street Association to design and install this year's lights. What can be seen in Regent Street today is the end result of four months of planning and preparation.

Initial discussions were held with the lighting suppliers, Action Lighting, towards the end of July. Simon Bruxner-Randell of Imagination got together with Bev Bigham, a director of Action Lighting, to specify the types of light sources to be used. Three main types were chosen - strings of miniature lamps, white spheres and Arc-line.

Bev Bigham told L+SI: "For the miniature lamps, which run longitudinally to define the shape of the chandelier, I suggested 30V 10MM tubular bulbs powered from specially made waterproof transformers. The strings were made in short runs, either to run up or down from the centre line with tails to reach the transformer, one per chandelier."

Production started at the beginning of September, but it wasn't long before the work hit a problem, as Bev Bigham explained: "We had just supplied a complete set for one chandelier, when horror, the black cable used had to be changed to grey cable. However, we managed to keep to the delivery schedule: 7,000 bulbs is a lot of soldering!"

The first chandelier was placed in position on the 25th October and the last on Sunday 30th October, and the lights were switched on, as scheduled, during a special ceremony on November 7 at Mappin and Webb.

The decorations, comprising a series of glittering chandeliers, should provide an elegant, fairytale note to the capital's festive season. In all, there will be 30 chandeliers grouped in sets of three and suspended on cables across the street. Each set comprises a large centre-piece, 18 feet high and weighing 430kg, flanked by two smaller ones on either side, 10 feet high and weighing 350kg each.

Action Lighting's brief involved the provision of specialist lighting adaptable to Imagination's design and capable of enduring all weather conditions.

Paul De Ville, Action Lighting's specialist consultant takes up the story: "Two sizes of white spheres were required, corresponding to the chandelier size. 'Waterproof and durable' was the specification, and we used a Swedish design, assembled in Eire. Have you heard the one about the Irishman and the white balls?" (Well, frankly no, but then L+SI never did mix in those sort of circles, Ed.)

"Things became a little tense on the run-in," continued Bev Bigham, "but we got there with minutes to spare. Initially, we thought that the Wotan EL11 electronically ballasted miniature fluorescent would give a good light in those fittings, with good energy savings, but finally overall economics ruled out this option in favour of Compton double life lamps."

The chandeliers were manufactured in aluminium sections to minimise weight, but are able to carry a total of: 1,000 globe lights, with fluorescent tubing; 1,000 festoon strings of low-voltage lamps; nearly 500 metres of straight and curved sections of neon tubing and nearly 300 metres of Arc-line 'strobe' light tubing. The Arc-line lights

are the only moving lights in the design and run down the centre of each chandelier.

In addition, 7,500 aluminium spheres accompany the chandeliers, both being sprayed silver to increase the total reflective power. The overall effect is one of a mass of glittering white light with pulses of blue light darting vertically within each chandelier. No strangers to lighting projects, Imagination has won, for two years running, the LBC/LEB 'Brightening up London' awards for the seasonal decoration of its own building in Covent Garden. The company was also responsible for designing the exterior lighting scheme for the Lloyd's of London building, which recently gained a commendation in the Lighting Industry Federation Awards.

Not only has the company designed the Regent decorations, it also provided £200,000 to sponsor the production. Imagination's managing director, Gary Withers, who was responsible for the design told L+SI: "The Regent Street lights are a very special part of London's Christmas celebrations, providing fun and entertainment for thousands of tourists and shoppers in the West End. It would be very sad to see them disappear because of lack of support."

Response to the new look has been highly favourable, with only the odd traditionalist holding out for a return to the days when London's Christmas lighting resembled Blackpool illuminations in miniature. The up-market design may not be to everybody's taste, but it certainly has to be applauded for its attempt to introduce a new feel to the festive season.

Though simple, the lighting design is extremely effective combining elegance and sophistication with spellbinding enchantment.

Regent Street Christmas Decorations Lighting Specifications

Each set of decorations consists of three chandeliers manufactured in aluminium: a large one and a smaller one on either side. There are 10 sets of decorations, each strung across the street on 10 catenary suspension cables.

30 chandeliers in all:
10 large - 18' high x 10' diameter.
20 small - 10' high x 6' diameter.

Each large chandelier is constructed in 18 identical segments, each carrying:
2 globe lights with fluorescent tubing.
1 festoon with 11 low voltage lamps.
1 festoon with 7 low voltage lamps.
1 18-inch straight neon tube.
1 36-inch curved neon tube.
(all white light)

In the centre:
8 x 1.8m Arc-line 'strobe' lamps running vertically (provide blue 'pulsed' light)
1 Arc-line controller.
1 x 750VA transformer.

Each small chandelier is constructed of:
2 globe lights with fluorescent tubing.
1 festoon with 9 low voltage lamps.
1 festoon with 5 low voltage lamps.



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1 10-inch straight neon tube.
1 20-inch curved neon tube.
(all white light).
In the centre:
4 x 1.8m Arc-line strobe lamp running vertically.
1 x 500VA transformer.
Total lighting equipment:
1000 globe lights.
180 festoons with 11 lamps.
320 festoons with 9 lamps.
180 festoons with 7 lamps.
320 festoons with 5 lamps.
180 18-inch straight neon tube. (82.3m).

320 30-inch straight neon tube. (81.4m).
180 36-inch curved neon tube. (165.5m).
320 20-inch curved neon tube. (162.5).
160 x 1.8m Arc-line tube. (288m).
10 Arc-line controllers.
10 x 750VA transformers: 240V to 30V.
20 x 500VA transformers: 240V to 20V.
Neon transformers.
In addition, there are 7,500 spun aluminium balls in total between the globe lights. These are sprayed silver to maximise their reflective capacity, plus, at the base of each chandelier a reflective globe covered in 1-inch mirrored glass.

There is a clearance of 23 feet (7m) between the base of each large chandelier and the street below.
Total weight:
Each chandelier with lights and spheres weighs 427.38kg.
Each small chandelier with lights and spheres weighs 348.50kg.
Design - Gary Withers.
Production Management - John Mayford.
Lighting Equipment - Action Lighting.
Neon - Syrett Neon International.
Construction - Scenaskips.

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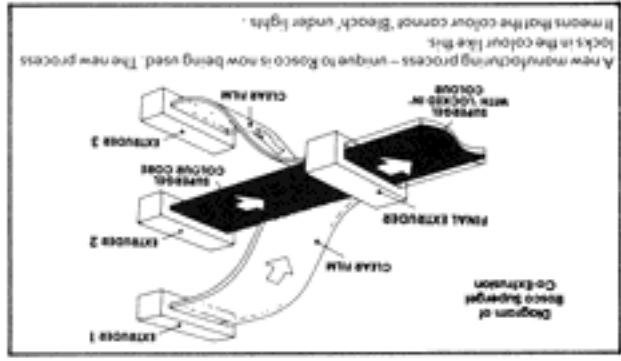
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To say that no one else can compete with the full force of our spectrum is putting it mildly.
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What's more, every single one of our colours is not only self-extinguishing but also has exceptional colour stability.
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IMITATIONS

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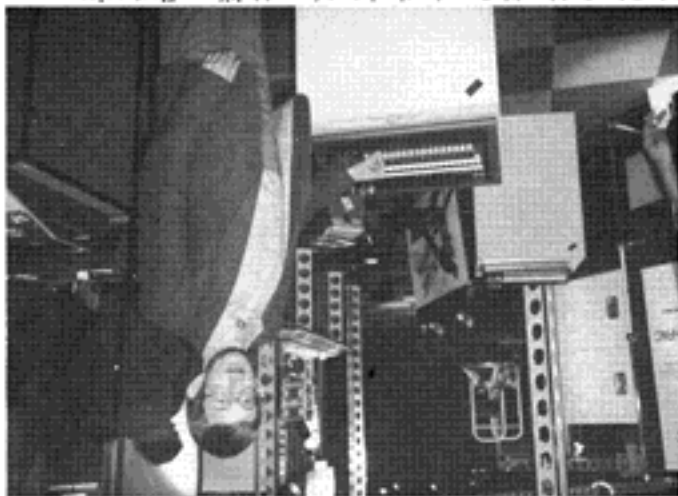
DiscoTec at Dusseldorf

Brian Davies reports from PLASA's marketing battle-front on the Ruhr.

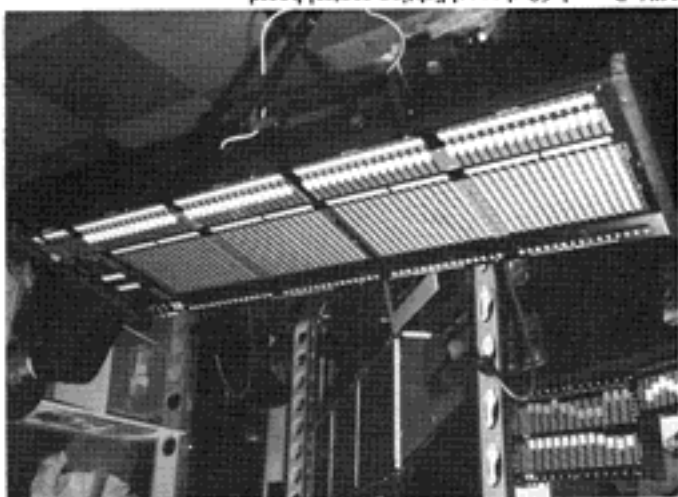
Monday November 7 dawned bright and clear as I mounted my faithful steed for the long drive to Dusseldorf. I arrived in the city around 17.30 hrs and took a further two hours to locate my hotel (I must remember in future to purchase a street map before embarking for foreign parts).

Bright and early the next morning I duly arrived at the Messe administration building and registered for DiscoTec 88, which is part of Hogatec, a major hotel and catering exhibition. My first call was to the press office to organise my itinerary for the next two days and also to collect the press packs.

The Dusseldorf Messe Press Office is one of the best and most comprehensive I have ever seen, with masses of information provided by the organisers of ancillary events, data on the exhibitors, and details of the numbers of overseas visitors present. Several large racks were also provided on which the exhibitors could display their press packs, but to my complete disbelief, only one press pack was in evidence, and then not a press pack in the true sense of the word, but a stack of magazines and British at that 'jocks'. Considering that there were around 150 exhibitors at DiscoTec 88 and several hundred in use defied belief! Come on you guys stand out there, you spend a fortune on a stand,



Paul Price-Smith with Scorpio, the latest from Multiform Electronics.



MFL's Prorock 60 channel lighting control board.

you spend no small amount on hotels, travelling, booze and food and then fail to provide the material for free publicity!

This, of course, need not be anything expensive: a photo-copied type written sheet detailing your new products, supported with a black and white photograph, plus a telephone number and contact name for further information is all that is required. And a final word on the subject: those who plug their own products are far more likely to receive good editorial coverage. We obviously take the trouble to look for everything new, but signposting certainly helps.

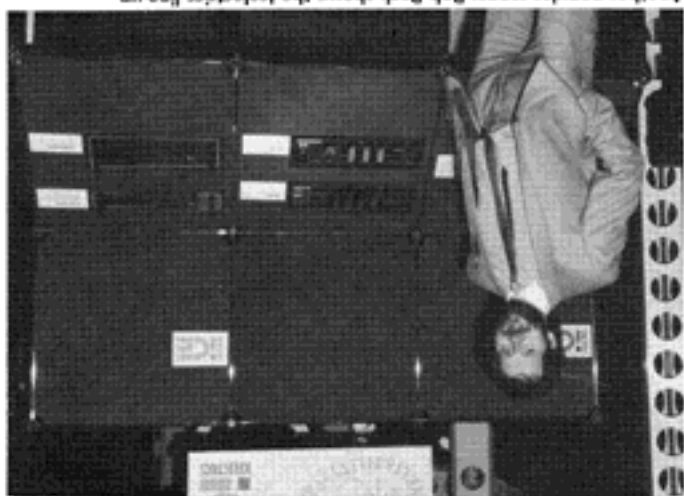
My first impression of DiscoTec 88 was 'where is everybody?'. Wide gangways and well designed stand layout made progress around the exhibition most comfortable! General comments from many of the 13 British companies present in their own right, were that the exhibition was mainly a domestic affair. Very few overseas visitors were in attendance, unlike our own PLASA Light and Sound Show. Nonetheless, most of the Brits agreed that this exercise was valuable in one respect or another. For instance, **Chronics** Mike Gernish had a tale to tell.

Coemar, who had one of the largest stands at DiscoTec 88, were having trouble with

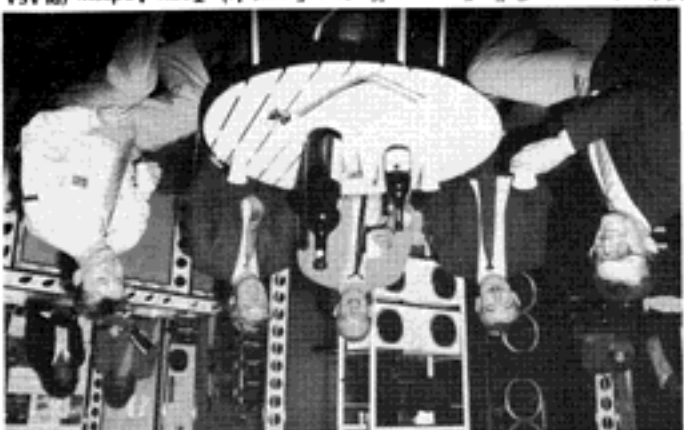
their sound system. They had excellent loudspeakers in the JBL system, but not the necessary electronics to drive them. So Mike offered to lend Coemar a Citronic PA system for the duration of the show. This comprised an SPX721 Dual 15 band graphic equaliser, an SPX541 Dual 4 way electronic crossover incorporating some new and revolutionary techniques, shortly to be the subject of a full review; a PPX300 amp driving the compression horns; a PPX430 driving the high mid transducers; a PPX900 driving the low mid transducers; a PPX1200 and a PPX1600. The whole system was demonstrated to me and I can report that it all sounded very clean, well-balanced and, I would suggest, satisfying to the most discerning listener.

The final result of this was that Coemar commissioned Citronic to provide a PA system for their stand at the forthcoming Frankfurt Music Messe. Good work Citronic!

Also loaning equipment to other exhibitors were **Wembley Loudspeakers** who had the great fortune to be asked to supply and install a suitable loudspeaker system in a new club being commissioned in Malta. From the plans I saw, it will be a large venue and a great deal of units will be needed to give full and proper coverage. If Paul McCallum needs someone to carry his bags, he need



Another popular range: Rob Peck shows the Icelectics line-up.



Visitor's corner: Colin Freeman (System Freestyler), Tony Andrew (PLASA general secretary), Paul McCallum (Wembley Loudspeakers), Rick Wilson (Le Matre Holdings) and Mark Reed (Astraloy). The first bottle (left) obviously didn't last long.



Citronic's PA stack on the Coemar stand.

look no further!

Wembley loaned a number of their Deuce cabinets to **Laser Systems**, with the latter supplying all the necessary electronics. I received a demonstration of these during one of Laser Systems periodic laser light shows. At normal listening levels they worked fine, but due to the poor quality compact disc player in use, high levels caused serious acoustic feedback resulting in the jumping of the player's laser.

Speaking of Laser Systems, the light show they produce with their lasers, Giro Light and Mini Light systems really is excellent. Hopefully the early problems with the Mini Lights have now been overcome and they can look forward to a long trouble-free life.

Once again **Pulsar** had two large stands: one was showing a static display of their range of British-made products, together with a limited number of the **Clay Paky** range. The other stand was a demonstration area for their Oska lighting control desk, which was powering a number of Clay Paky products. A superb light show has been programmed into the system and I am sure that Oska will prove to be in great demand. Also in evidence, plugging the benefits of PLASA membership, was PLASA secretary Tony Andrew. A lot of interest was being shown in PLASA by visitors to the exhibition and hopefully this will result in more members in due course and many more visitors to the 1989 Show.

Although not exhibiting in their own right, **Le Maitre Holdings** were very much in evidence on their German agent's stand. On show was their new LSX low smoke machine, and a second machine was in use on the Pulsar stand, ably demonstrated by Rick Wilson with Ian Levine also on hand.

Also in evidence were **Light Processor**, whose representatives were Rob Field and John Adams. The whole range of their products was on display, including the CD Interpreter lighting controller. This amazing device is also due a full review in the near future. The CD Interpreter is designed to read data from the subcode output of the CD player. This, together with a light show played on the unit's keyboard are memorised in such a way that replaying one track produces the same light show again.

Displaying a wide range of lighting desks were **MJL Trading**, now of Beckenham. The big daddy of controllers on show was a 60 channel unit with foot control. However, there is a unit suited to pretty well every pur-



LSD's Ian Levine with Le Maitre's LSX low smoke machine attached to a Smoke Processor.

pose for band, disco and theatre use.

Part of the stand space occupied by the 13 British companies housed one German agent and six British represented companies. **Lightronic Licht & Lampen** together with **Cloud Electronics, Multiform Lighting, Icelectrics, Wembley Loudspeakers** and **MJL**. Additionally, products from the **Volt** loudspeaker range were on view. The stand itself was built by Colin Freeman of **System Freestyle**, and I must say that the trussing looked very good and went 'up and down' extremely quickly.

Speaking of Cloud Electronics, Roy Millington showed the range of disco and PA electronics from the Club 900 series mixer to the MK2 CV series amplifiers. I now feel qualified to recommend these, as I have partaken of the benefits of a MK2 CV1000 for several months and am very pleased with the results.

Taking pride of place on the Multiform display was their Scorpio lighting controller, launched at PLASA, which has features that make it suitable for both club and theatre application.

Rob Peck, soon to be taking over the chair from Peter Brooks at PLASA, was showing the complete range of Icelectrics products from lighting controllers to amplifiers to consoles. Demonstrations of the audio products was effected in conjunction with loudspeakers from Wembley Loudspeakers, who also showed their entire range from the Cube to the new sub-bass enclosure. In order to show the drivers used by Wembley Loudspeakers in the Cube, Paul McCallum displayed a range of drivers from Volt Loudspeakers.

Next door to the PLASA stand, and occupying a corner stand to great advantage, was **Anytronics**. Bob Hall took great delight in demonstrating the enormous linear tubed strobe unit. This is the one which at a previous exhibition I criticised as being noisy. In fact, I was hearing a very small strobe from a competitor next door, and Bob Hall has never let me forget it! Seriously though, this strobe gives out an incredible amount of light and in a large club can be used to great advantage. Also on view were the range of lighting power packs which Anytronics claim will operate with any 10V controller, and, of course, the lighting controller and desk systems from their own catalogue.

Both Freddy Lloyd and Peter Brooks took great delight in showing me their Sirius lighting desk and sad to say, were sorry that



Hands-in: Citronic's Mike Gerrish.

production right into the New Year was already fully committed. The **Zero 88** lighting products, including the Sirius and Mercury systems, were being displayed on the stand of **Neuphone**, Zero's German agent.

Much to my surprise, the only products to be seen on the **Adam Hall Supplies** stand were a few samples from the Turbosound loudspeaker range. I fully expected to see the Adam Hall range of cabinet fittings and case maker accessories.

Arguably, the biggest stand at the exhibition was the **Avitec GmbH** complex, with a large reception area plus a demonstration area, totally enclosed, in which to show their massive range of lighting and sound equipment. Manned almost entirely by German staff, I think, however, I did spot Tony Kingsley disappearing into the distance on more than one occasion!

Undoubtedly, the noisiest stand at Discotec 88 was that of **Bose**. Mounted on the top of their stand was a bank of 16 Cannons, all wired up and in full working order. During their sound demonstration, the entire building shook! Without doubt these units make a lot of noise, but I have yet to be convinced that it's a pleasing sound. The Bose range on view was extensive, and those which were most aesthetically pleasing were a range of units for the PA industry, very small wall mounting types, as well as multi-coloured ceiling-mounted units. Well worth



Keeping the show on the road: PLASA general secretary Tony Andrew.

Avitec's reception area.



Smart and stylish: the stand of Anytronics.



Trading, System Freestyle and Voll Loudspeakers.



Cloud Electronics' Roy Mellington; showing the range.



a look.

Other companies present or represented by their agents included **Harrison** who were demonstrating their range of amps, **Hill Audio** with their amps and mixers and **Phase II** professional turntables who, incidentally, still owe me one for review. How about it chaps?

So, at the end of the second day, what was my overall impression? Generally it was a good exhibition which unfortunately lacked major overseas support. Maybe 1990 will bring forth more exhibitors. Statistics received from the organisers indicated that during the five day exhibition, some 8,000 visitors were attracted to Discotec 88 directly, whilst

some 40,000 attended Hogatec 88. I'm not sure that this level of attendance for the disco industry is as good as it may seem, but generally it would appear that most of the British contingent were satisfied overall - apart from the fact that they felt five days huddled up in Dusseldorf in November was far too long.

Bose, complete with acoustic Cannons.



Two for the price of one! Zero 88's Freddy Lloyd with Sinus and cloned Image.



TurboSound on the Adam Hall stand.



Pulsar's Ken Sewell (left) demos Oska.

ON TOUR

Catriona Forcer

Stage Light Design at the Motor Show

This year Stage Light were involved with two stands at the Motor Show, those of Panther cars and Porsche cars, Great Britain. The Panther stand was very simple, with just an open white wash to cover six cars and two logos. The rig was supported by a 24m x 7.5m U-shape truss on 5.5m legs.

The Porsche stand however, was something very different. Designed by exhibition design consultants Furneux-Stewart, the idea was to present eight cars in a 'Look-Don't-Touch' manner, and the theme of the stand was 'Kinetic Art'.

Each car was mounted on a revolving disc which could tilt from 15 to 35 degrees. The cars were lit by Pars from special light rings built into the set, as well as from floor lamps at the base of each disc. Eight Pars and one profile carrying a 'Kinetic Art' gobo were rigged on more fabricated bars attached to the hydraulics, and moved up and down with the cars, constantly changing the look of the rear wall behind the cars.

With all eight cars moving randomly all day, the stands' impact was tremendous from any angle, lighting designer John Rinaldi told L+SL. Fresnels were used to light the reception desk and the internal hospitality area.

Equipment:

Panther Cars:

Lamps:
20 x Starlette 1kW fresnel.
8 x T1200 Sil 30 profile.
2 x 800w Redhead.



Control:
1 x Green Ginger 205 Desk.
6 x Green Ginger 4-way dimmers.
Rigging:
80m Slick Litebeam + corners etc.

Porsche Cars Great Britain:

Lamps:
96 Par 64 CP62.
64 Par 64 No2.
32 Par 64 Floorlite CP62.
40 Minuette 500w fresnel.
8 Minuette 650w profile.
4 Starlette 1kW fresnel.

Control:

2 x Celco Gamma 36-way dimmer racks.
1 x Celco Series 2 2412C 36-way dimmer rack.
1 x Celco Series 2 60-way desk c/w Soft Options 88.

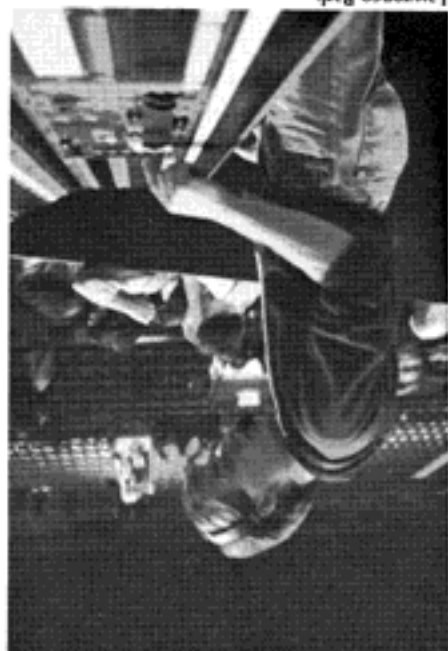
Miscellaneous:

44 Socapex multicore.
26m 6"x6" Steel trunking.
18m 4"x4" Steel trunking.
12m 3"x3" Plastic trunking.
26m 2"x2" Plastic trunking.
10m 3" Adaptaflex flexible conduit.

Rigging:

All rigging specially fabricated to fit on to set.





Equipment list
(Chameleon lighting)
180 Par 64s
18 Lektos (6x16)
6 UV floods
6 snobs

Living in Newcastle, where the cost of living is relatively low, Lawrence finds that he is fortunate enough to be able to take time off rather than take on work he doesn't want to do. He believes that these breaks help him to maintain a fresh perspective and enable him to enjoy his work that much more. He is presently planning to rest until the end of March, so that he can be at home with his new baby which, up to now, he has hardly seen.

managed to create an effective and new design over emphasise the lights. However, he still dynamics, with this in mind, he takes care not to that Sade's music is more to do with restraint than of Washington and Detroit. Lawrence believes States, particularly in the large black communities parently the show went down very well in the 11 weeks and then moved on to Europe. Arriving in America at the end of July, Sade toured for successful, the band decided to go out on tour. Star- at Alexandra Palace last June, but as it was so suc- The current Sade tour started as a one-off show to small sports arenas.

progress. Venues in the States ranged from clubs single reached number one whilst the tour was in very successful, especially in America where the by American and European tour which proved joyed. This was followed by a Terence Trent D'Ar- on the last Alison Moyet tour, which he really en- admired, and he was delighted to be able to work could only work with the bands whose music he in that last interview Lawrence told me that he

some dates in Europe with Public Image Ltd. After that he undertook a short British tour and in addition to a few European summer festivals, me, taking in Australia, New Zealand and Japan, Eurhythmics. That tour kept him busy until the sum- December 1986 when he was designing for the

Lawrence Park Wembley Arena, November 22

Crew:
LD: John Renaldi,
Equipment: Stage Light Design,
Production electricians: Barry Murphy, Sandy MacRobbie,
Crew-in-charge: Jerry Hodgson, James Tomlinson,
Dave Hudson,
Get-out crew: Jerry Hodgson, Gavin Crisp,
Kan Pilkington.

10-13 September 1989
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Light & Sound Olympia 2 Show

When he was at school Andrew Doig was fortunate enough to get a holiday job with his local lighting hire company, Northern Lights, and that set him on the path to becoming the successful lighting designer he is today. Whilst working at Northern Lights he met Ian Fraser who introduced him to Zenith in London where he later secured a job.

'I've been in the business for quite a long time, but mainly as a crew member, working my way up from the bottom. Chris de Burgh is the only band that I've designed for, apart for some work

last Fleetwood Mac tour, where I was crew boss. The whole artistic side of this show is left to me.

4 single cell cys.
8-4 way groundrows.
3 apple machines.
2 Cadenzas.
6 FX wheels.
40 x 22 Box Truss with Mid Truss.
70-way Nova Dimmer.
Avo QM 500 Desk.

CORRECTION/ADDITION/AMENDMENT
Iron Maiden - Monsters of Rock
Castle Donington
There have been numerous complaints from fans and assorted celebrities who attended the show, pointing out the omission of Jim Cornall Hubbard from the crew listings in September's issue. It was also stressed, in no uncertain terms, that this man is probably more famous than the majority of acts appearing on stage that day. Our sincere apologies for the error.

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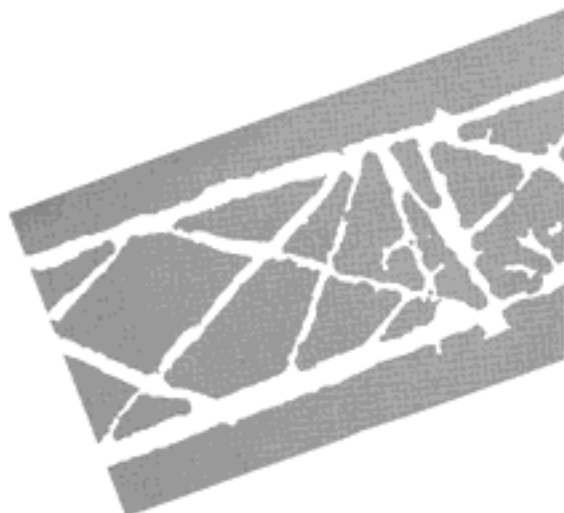
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60' Slick Meridian truss.
12 bars of 6 Par 64.
4 bars of 4 Par 64.
80 pins 8 Raylights.
6 6x16 Lekos.
8 Sil 30 profiles.
8 Celco semaphore units.
6 Par 64 floorcans.
6 Par 36 floorcans.
6 Par 16 M16 cans.
6 Berkeley groundrows.
6 2K tubular nipples.
3 Cadenza 2K effects projector.
2 CCT miniature profiles.

4 wind machines.
4 carbon Super Troopers.
LD: Andrew Dalg.
Van'Lites: Sean Nugent.
Host control: Scotty Dudge.
Follow spots: Paul de Bousiere.
Telecans: Pascal Moran.
Riggers: Oz Mursi/Olly Saunders.
and special thanks to 'Jaggy' for organising the interview.

Equipment: Entec.
Lighting designer: James London.
Celco Cold 88.
Alfter color PC with Celco VDS software.

Equipment List:
16 4 cell TK ground rows.
38 VL 2L.
24 M8 11 Telecans.
30 1/2 ton hoists.
4 2 ton hoists Iodestars.
6 1 ton hoists.
Avalites Host Command.
1 Rosco Smoke Machine.
4 Le Maere Smoke Machines.
1 Van'Lite Dimmer.
1 72-way Avo Dimmer.
2 mirror balls.

Europe.
The Chris de Burgh tour began with six weeks in the UK and Ireland and will continue through to July, taking in the USA, Canada, Australia and Europe.
"I prefer the idea of using an advanced light like a Telecan or Van'Lite to light the stage because you can light things more precisely. Focus is better and you have much more variation than a limiting Par rig. The 62 lights on this show is plenty, because they give me a great number of combinations."
"I prefer middle of the road acts as opposed to other people's light shows, although I really liked Simon or Kate Bush. I tend to be very critical of Heavy Metal, and I'd like to light Dire Straits, Paul McCartney and the Beatles."
"I prefer middle of the road acts as opposed to other people's light shows, although I really liked Simon or Kate Bush. I tend to be very critical of Heavy Metal, and I'd like to light Dire Straits, Paul McCartney and the Beatles."
"The unusual thing about this show is that there are no Pars on the rig. In fact the only conventional lighting is from the cyc units on the back screen. Instead, I have used 24 Telecans and 38 Van'Lites, which do all the work and not just the effects, and there is a 30 half ton Host Command Van'Lite on the ground, giving me a clean and simple system. I use a Rosco screen for the backdrop because I find that it is dark when unlit with no reflection, but when it is lit you can see the colours that are projected on to it really well. It's also a good service for the various gobos and projections."
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Sade in concert, Wembley Arena - lighting designer Lawrence Park.



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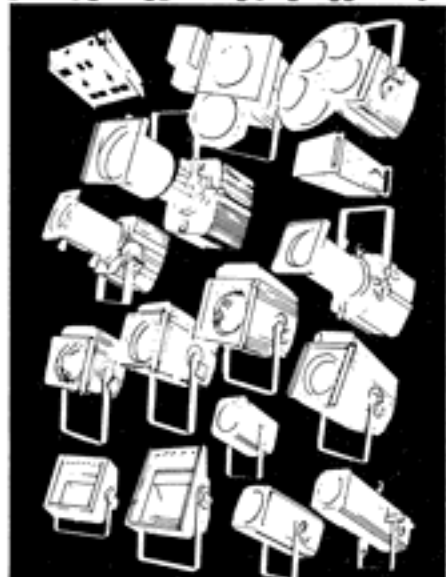
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