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Brighton Centre Sound - see feature on new Shuttlesound cluster in this issue

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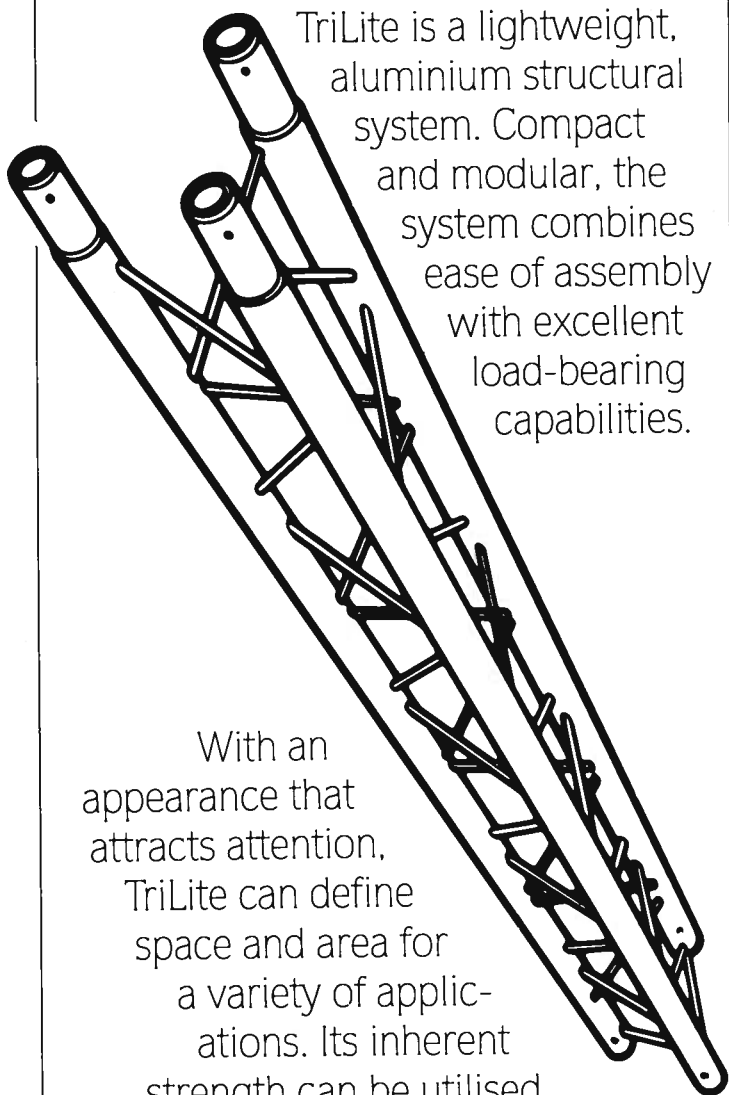
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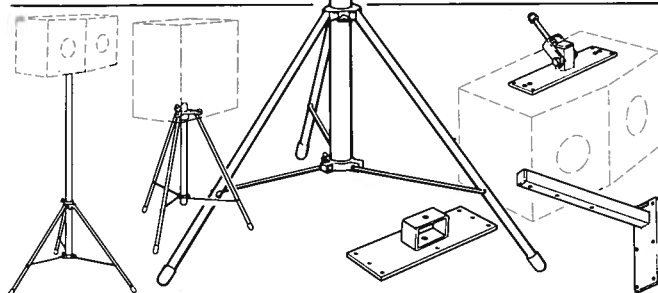
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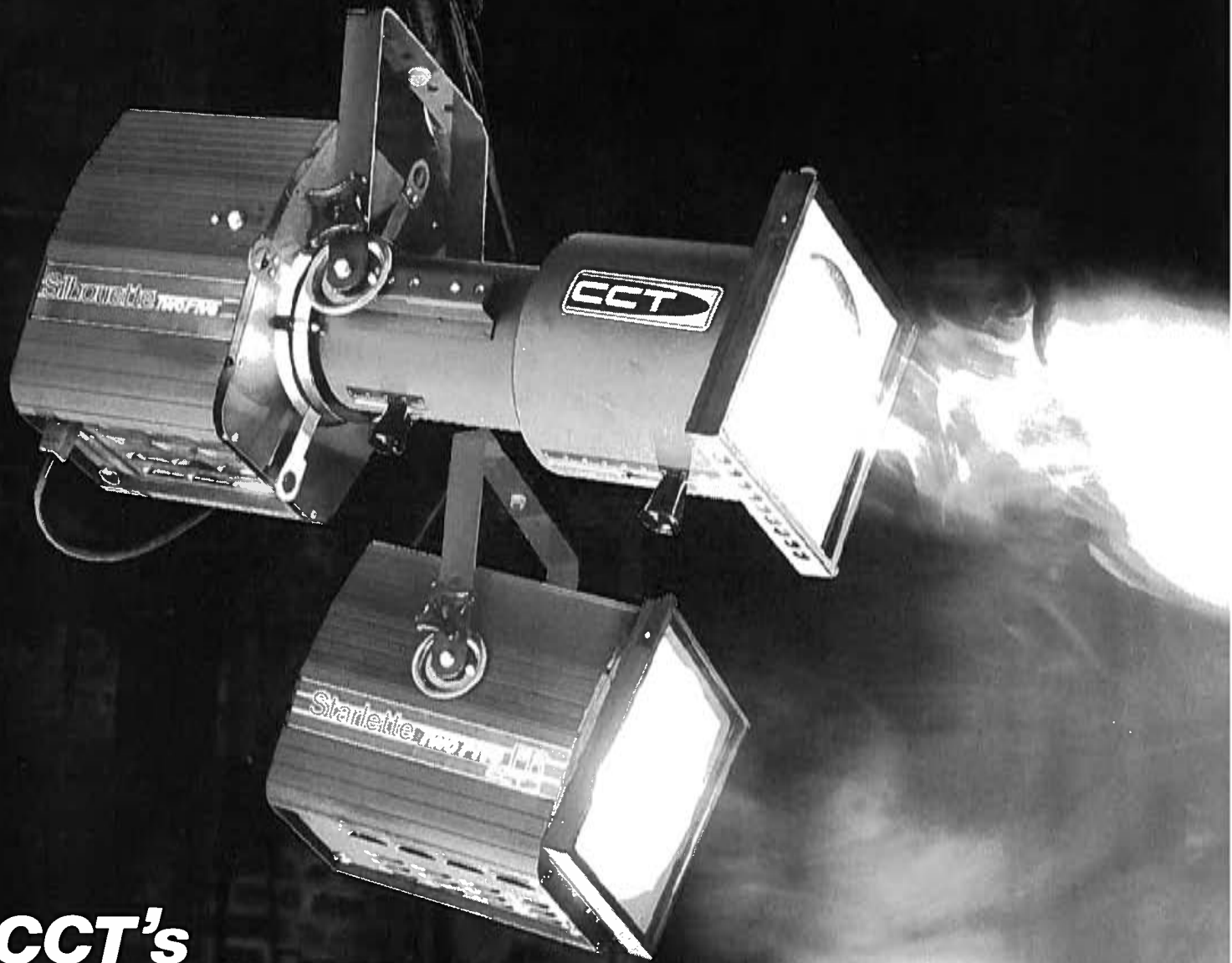
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Thin Film Technology Creates New Colour Filter

New Dichrolight dichroic colour filters from Balzers generate pure colours from non-absorption techniques, allow extremely high light transmission and do not fade with regular use say the company. Suitable for virtually any type of optical or lighting equipment, Balzers claim they can be regarded as a permanent fixture. (For more detail see Equipment News in this issue.)

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International

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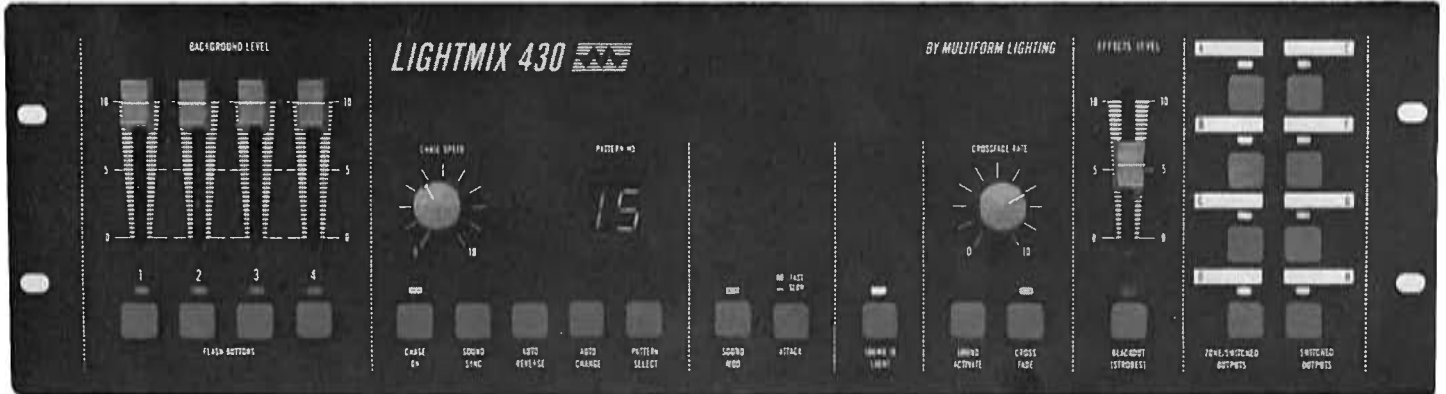
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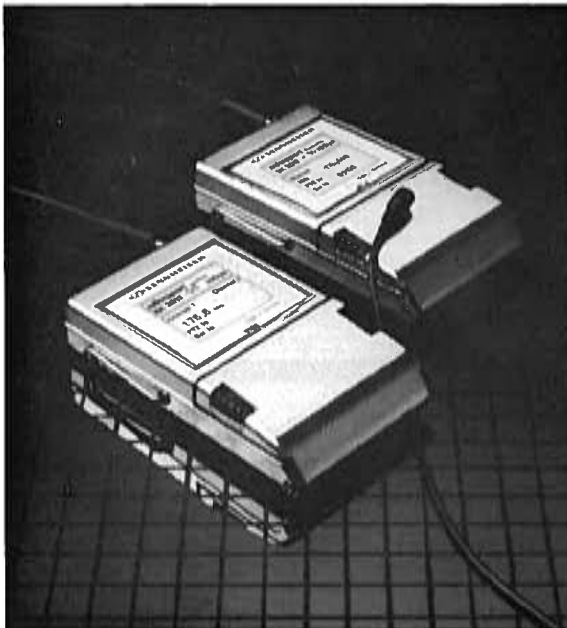
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Technical Training Initiative Industry Training Organisation Established

The recent AETTI conference and seminar, held at RADA on April 28 was unique, being the first occasion that representatives of the Arts Council, the National Council for Vocational Qualification (NCVQ) and MSC had discussed training issues with such a large number of organisations from the industry. The conference was the culmination of a six month long consultancy process undertaken by chairman Graham Walne and which has included regional and national meetings along with talks with special interest groups.

What started as a general concern for the parlous state of technician training and what Walne saw as rapidly deteriorating technical standards, soon became the catalyst for the formation of an Industry Training Organisation (ITO), through which the technical sector of the industry will prepare itself for the introduction of the National Vocational Qualification (NVQ) in 1990/91.

The conference was opened by Loretta Howells, training officer at the Arts Council, who spoke of the Council's support for technical training and for the aims of the initiative. Representatives of the MSC and NCVQ outlined the role of those organisations in responding to the 1986 White paper 'Working Together-Education and Training' and the subsequent 'De Ville Review'. A general debate during which many issues were frankly discussed, was followed, in the afternoon, by a seminar in which the conference divided to discuss occupational standards and the proposed constitution and policy of the ITO.

The constitution, which will be ratified at the inaugural meeting of the ITO proper to be held at the Arts Council on June 2nd, lists twenty four member organisations, representing employers, trade unions and professional associations who sent delegates to the conference, attended

previous consultations or who were suggested for membership by other delegates. The AETTI will have the power to co-opt other organisations and individuals and Walne sees much of its work being carried out by sub-groups dealing with specific areas of the remit.

The major aim of the AETTI in acting as an ITO will be to develop and maintain employment led occupational standards, along with appropriate assessment procedures, and to promote and facilitate technical training to meet the criteria of NVQ. In doing so it will act as a liaison body between employers, trade unions the professional associations and organisations who provide education and training. The AETTI also recognises that other training initiatives relevant to the industry are in various stages of development, and the proposed constitution allows for liaison and cooperation with other ITO's, ultimately leading to the development of a Lead Industry Body, which would oversee training throughout arts and entertainment. This move has the backing of the MSC.

On the question of funding the work of the ITO, Walne pointed out that the MSC have funds available to 'pump prime' the development of NVQ but the industry will also have to contribute. "Clearly the question of funding will need to be addressed at the inaugural meeting, but we are not thinking of setting up a large bureaucratic organisation so administration costs will be comparatively modest," he said.

For the last six months Graham Walne has acted as chairman of the AETTI with Alan Stevenson as its Secretary. As neither of them are officers of any of the member organisations, they have expressed a willingness to serve as co-opted members for a twelve month period to ensure smooth transition to ITO status.

PALS on Hire

Cyberdescence Lighting and Lightworks have announced that from the 1st August this year, the Precision Automated Lighting System (P.A.L.S) will be available for hire as part of the Cyberdescence comprehensive hire service.

A full range of motorised lanterns will be available including 5kw and 1200w fresnels, 1200w profile spots, Par 64 and 56 units, and scrolling colour change units, all compatibly controlled by the same computer using unified commands. All units will be fully flight-cased complete with all necessary cables and P.S.U.'s for temporary rigging.

Most of the lanterns are cased in units of two, and although there will be a minimum rig requirement, the combination of types is up to the designer, just as with conventional lanterns. Trained technicians will also be available from Cyberdescence to both rig and operate the hired P.A.L.S System.

Contact number is 01-346 9757.

Astralloy Consolidation

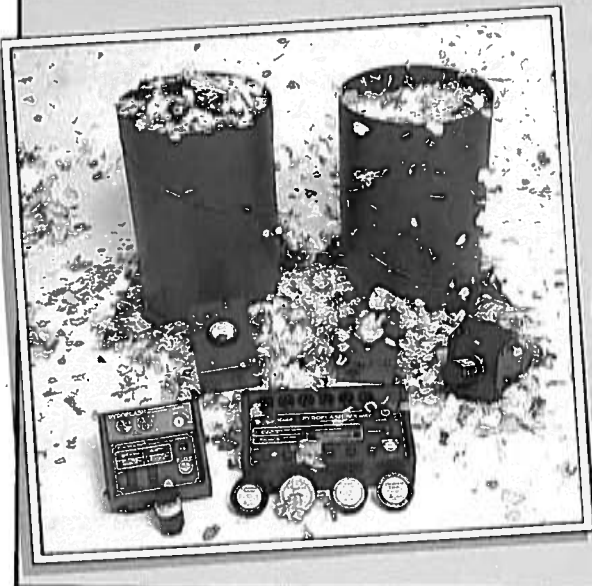
Astralloy Group Holdings has acquired the businesses of Astralloy GB Ltd, Astralloy International Ltd, and Lighting Leisure Marketing Ltd - all familiar names within the industry.

Since the development of Astralite trussing seven years ago, two other trussing systems - Structalite and Minilite - were developed, and the success of the range has necessitated consolidation and a move to a new factory in Leeds.

The move will be an expansive one. Extra staff and equipment will both be necessary, and a mezzanine floor is to be fitted to increase space from 10,000 to 15,000 sq.ft. The entire unit is to be refitted and re-designed. "It will result in shorter lead times and increased output, and a strong emphasis will be placed on implementing and maintaining stringent quality control standards," said director Adrian Brooks.

"Still in great demand for use as lighting rigs, Astralite is increasingly becoming accepted as a standard design medium for exhibitions, often be-

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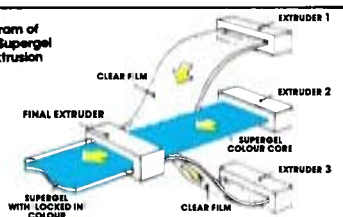
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ing specified by stand designers. The trussing can be powder coated any colour to fit in with a stand's colour scheme. For the same reasons, our products are becoming fashionable for use in shopfitting. They are also being used in building projects where their unique appearance gives interesting and individual results," he said.

With all operations consolidated under one roof, the company can now concentrate fully on in-house manufacture of their products, rationalise their distribution network and concentrate on expanding their international markets which account for over 60% of all sales.

Fane with Court

Fane Acoustics has entered into an agreement with acoustic systems design consultant Stephen Court. The arrangement will see Court in his professional capacity of systems design consultant, coming up with an entirely new range of professional enclosures and monitors to be manufactured and marketed internationally by Fane, under the banner of 'Fane by Stephen Court'.

These pro audio products are expected to generate enormous interest from clubs, theatres and other venues that require pro audio installations, from the most compact to the largest sound reinforcement systems currently available, say Fane.

Lee and Eurovision

Member companies of the Lee Panavision Group provided TV lighting for this year's Eurovision Song Contest, recently staged at the Royal Dublin Showground in Dublin, Ireland.

Lee Electric (Northern), the Manchester-based lighting hire company, supplied a comprehensive range of luminaires including Baby and Studio fresnels, punch lights and Par 64 parcans, profile and pin spots and xenon follow spots. In all, the lighting output supplied by Lee Northern was equivalent to a massive 1.25 megawatts - all of which was controlled through Lee Colortran's IDS dimmers and control desks.

Soundcraft in Poland

Soundcraft has just supplied four Series 8000's and two Series 500 Monitor consoles for the largest PA rig to enter Eastern Europe. The £300,000 contract, put together by Ziggy Jackson of East West Audiovision Trade, was ordered on behalf of United Entertainment Enterprises in Warsaw.

The rig incorporates two 24 channel 500 Monitors, as well as 40,32,24 and 16 channel versions of the Series 8000. Following its first outing in June for a concert in Moscow, the rig will also be used for the 25th International SOPOT Song Festival, to be held in Poland in August.

School Theatre Lighting Project

Dear Editor,

The St Peter's School Theatre Lighting Project consists of the collection, renovation and restoration to working order of any theatre and studio luminaires, which we are fortunate enough to acquire. Once completed, these are then to be stored in a working exhibition centre, of some four thousand square feet of display space, on the school campus. The idea is then to open the Project to the general public on two days a week, and for the remaining time the centre will be used as an educational resource for all local schools with students taking the Lighting Option of the GCSE and A-level Drama & Theatre Arts courses.

The main difficulty has proved to be in getting hold of such luminaires, as most agencies simply scrap them when defunct or throw them away when refurbishing. If any of your readers have any such lights, which may be superfluous to requirements, or if any are acquired in the future, I would be extremely grateful if they could let me know. We promise them a good home, and a future as an invaluable teaching aid.

David Sandham, Drama Department,
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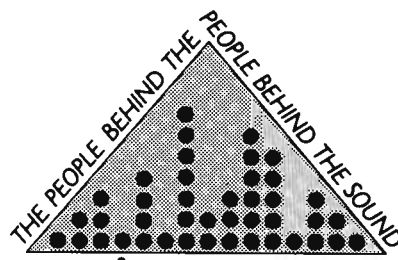
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Major Sales for Crest

Crest Audio, distributed in the UK by Electromusic of London, have announced a number of significant sales for their 8001 amplifier, introduced to Europe at the recent AES in Paris.

Shubert Systems of Hollywood, California have taken delivery of 48 units to power their 'Steradian' touring system. The amps are packaged 4 to a rack, each driving four 2 x 18" sub-bass and eight full range boxes. Dirk Shubert told Crest that switching over to the 8001's had made a "startling difference" to the sound quality of his already

highly-praised system. (Shubert is currently touring with Toto and the Reggae Sunsplash Tour.)

Model 4001 and 8001 power amplifiers now power the Apogee sound system operated by Burns Audio of Sun Valley, California. Thirty amps are utilised and the system will be making its debut at the important Democratic National Convention in Atlanta during July this year. The Convention will be shown live on coast to coast television so operational stability is of paramount importance. The 8001 is only 3U high and is rated at 1200 watts RMS per channel at 4 ohms and 1400 watts per channel at 2 ohms. "It is the most powerful 3U amplifier in the world!" say Crest Audio.



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Oska goes Twenty Times Faster

Julian Williams' review of Oska's performance at the London Empire in the May issue of L+S! inadvertently stated that an enhanced interface will increase the speed of operation by 20%.

In fact the data transmission of the Oska Turbo will be 20 times faster. As Ken Sewell, Pulsar's managing director, told us this week: "With the sheer volume of data required to be transmitted at any given moment, especially when using intelligent driven lights, it was found that a faster route was necessary."

The new interface will be based on the industry standard DMX 512, while still allowing RS232 and 422 data links for peripherals. "Julian was obviously impressed enough with the speed of access as it is," added Ken Sewell, "but we need to have plenty in hand for future requirements."

Scott Sound Systems

After a record breaking year, Yorkshire-based loudspeaker manufacturer Scott Sound Systems has moved to a larger premises and the extra room will allow the company to raise production and stock levels to meet the increasing demand,



Scott Sound Systems' new S500 enclosure.

particularly from overseas.

Their new S500, 4 way, 1000 watt enclosure is evidently selling well after a good reception at the

recent Frankfurt Music Fair. This system uses a 15" Bass speaker, 10" mid speaker, horn loaded upper-mid and a bullet high frequency unit, and this cabinet forms part of a large shipment destined for Hong Kong and China. Scott has also recently finalised a contract to supply the Chinese Government with loudspeaker enclosures and the fourth consignment will be sailing soon. Company chairman Glen Scott told L+S! that the Chinese were impressed by the quality and competitive prices of the speakers and that the potential for growth was enormous.

This year is Scott Sound Systems' tenth anniversary, and it looks set to be the best birthday celebration ever. Scott can be contacted on their new numbers: manufacturing (0226) 745568; sales and accounts (0742) 580722.

Name Change Down Under

Jands Concert Productions Pty Ltd of New South Wales has announced that the company has changed its name to Samuelson Concert Productions Pty Ltd. This new name brings the company in line with the other Samuelson Group companies who are involved in the concert industry in the UK and USA worldwide.

Samuelson Concert Productions has operations on three continents, with offices in London, Dallas and Sydney. Two separate companies Vari Lite Australia Pty. Ltd. and Samuelson Vari Lite Europe Ltd operate under SCPL and provide state of the art lighting technology.

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Brighton Centre Sound

Ben Duncan

First Moves

BD: What led you to install a new system? What was the problem with the existing one?

MC: The sound system's history has been a chequered one. We started off with Tannoy column speakers which came as part of the original building in 1977. At that time we were wandering into uncharted territory as far as conference sound was concerned, particularly in a building of this nature. About nine years ago Rank Strand were called in to try and resolve the problems that had developed as greater demands were made. A two-cluster system was recommended, but due to a limited budget this was not accepted.

As a temporary 'in-house' solution, we fitted some Electrovoice LR7B columns. A few of them were flown, pointing downwards from the lighting trusses. They helped, but it was still embarrassing on occasions.

BD: For example?

MC: When the TV companies are here, and when conference teams have brought along their own sound engineers to check us out.

More recently amps have started to go down, and two years ago the desk developed a 'flutter'. We repaired it in-house, but with the PA now entering its 'wear-out' phase, an altogether new system was clearly on the cards. To find out what everyone else was doing, we visited many other conference venues.

BD: Which ones?

MC: We went to Wembley, Blackpool's Winter Gardens, Portsmouth Guildhall and the Barbican Centre. A central cluster was obviously what was required - but it had to be aesthetically subtle. In 1987 we hosted the Labour Party conference, and this year, it's the turn of the Conservatives. Being very much in the national public eye, we were therefore very sensitive and aware that any new sound system shouldn't be visible in TV camera shots, and that the sound should be up to the standards that wouldn't be embarrassing in front of BBC and ITV people. In fact

The Brighton Centre is a modern building situated on the seafront, not far from the Royal Pavilion. Opened in 1977, the venue is familiar as the venue for countless national events, ranging from Snooker championships to annual political rallies. It seats 5000. Today it has just acquired a state-of-the-art sound system, including a central cluster utilising EV speaker components, wholly designed and installed by Shuttlesound.

Clearly, the emphasis on the spoken word in a conference centre, coupled with multi-use, imposes some special requirements. How then does the sound system design differ from that of clubs, hotels or ice-rinks? Ben Duncan interviews the Centre's technical director, Mark Chapman, and Shuttlesound director, Mark Burgin, who successfully tendered for the contract.

we needed a PA system good enough that touring artistes who play here would also want to make use of it.

BD: Why did it take you so long for you to get to this conclusion?

MC: The original system was just beginning to get unreliable when I arrived here 3 years ago, and the time I have to think about audio is limited. Then any proposal has to be researched so it can be steered through with our 'owners', the Town Council. We argued that a cheaper system might last us until 1990. But if we paid more for a 'state-of-the-art' set-up, it would last us well beyond that.

Tendering

BD: When did Shuttlesound get involved?

MB: Our discussions with the Brighton Centre date back to 1985, but staff changes at the centre inhibited rapid progress. Last year, they got stuck in, and had demonstrations by two or three different companies, which included Shuttlesound. We used only about half of the proposed cluster rig and demonstrated a substantial improvement of speech intelligibility. The cluster can also

handle most other forms of entertainment, but our principal selling point was intelligibility for speech, and 'gain before feedback'.

BD: What are your experiences when tendering for a job of this kind?

MB: It seems a terrible shame that there are still consultants and people placed in authority to decide on one system or another, who feel they have to revert to very crude and uncontrolled forms of judgement between one audio system and another. In many instances, opportunities for demos have been offered in an arbitrary fashion; one consultant 'judged' and dismissed a system intended for speech reinforcement on the basis of listening to one chart single alone!

Consultants have a duty to the contracting community to ensure that the cost of a collection of contractors offering to demonstrate their equipment doesn't exceed the profit the winning tenderer is likely to make.

Design Aesthetics

BD: Were there any special technical requirements?

MB: It was important that the cluster integrated with the existing architecture. We could see why our clients were concerned - they understood the merits of the cluster. On the other hand, they didn't want it to look like a bunch of giant grapes hanging from the ceiling. Politically, we understood the benefits of this integration of technology with architecture and cosmetics.

BD: You mean, if the technology sticks out in an awkward kind of way, it upsets the client-who justifiably feel that the sound system should be heard clearly but never seen?

MB: Right. We're not out to advertise our presence. In this kind of venue, the sound reinforcement system should be integrated and more subtle. To make this happen, we designed the cluster so it can be hoisted up, and substantially hidden in the lighting grid.



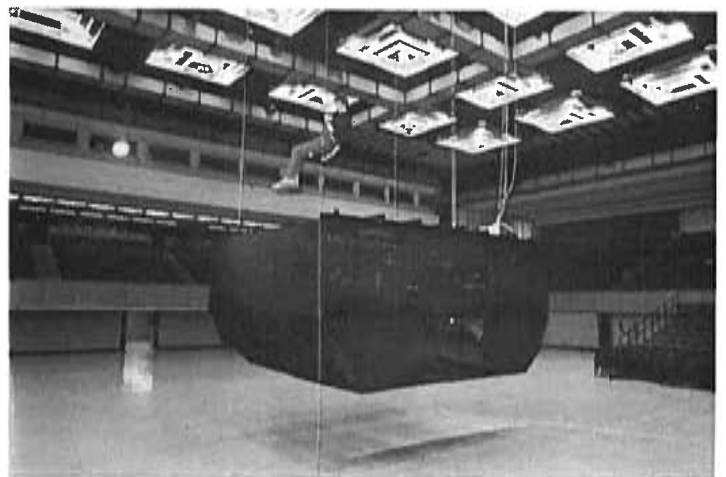
'One button' operation raises and lowers the cluster.



Technical manager Mark Chapman pictured in the Brighton Centre.



Members of Shuttlesound with cluster in the lowered position.



Cluster components are just visible through the cosmetic screen.

The position is geared for tennis and similar sports occasions.

There are in fact two operating positions. For conferences, the cluster is lowered about ten feet (3m) so it's in view of all the seats in the auditorium. However, we've fitted a black, acoustically transparent cover, so it's practically invisible against the backdrop of the catwalks and ceiling beside and above - which are all coloured black. This cover is non-reflective, so the element of amorphous subtlety applies even when it's caught in adjacent TV lights.

Thirdly of course, the cluster can be readily lowered to the ground position for maintenance - like cleaning the cover. It's also designed so that some TV lighting can be loaded on to it, making use of the space between horns.

BD: Is the cluster enough on its own?

MB: No. It's a multi-purpose venue. Anyone could be speaking from anywhere. We've

therefore given them a central image, with the cluster. However, by utilising the **Haas effect** (when the nearest loudspeaker dominates the perceived sound, and partially masks the others) we can also give smaller groups a suitably intimate sound field by means of a local pair of cabinets which can be plugged in and mounted on various brackets around the venue.

Innovation

BD: What are the installation's notable technical elements?

MB: It's important to remember that a good sound system is dependent on much more than the (loudspeaker) transducers employed. There are of course a lot of other elements involved in gathering and propagating the raw material.

The whole system can be put into eight different level and EQ settings, the latter using Micro-Audio's 'programmable' EQ pods. It

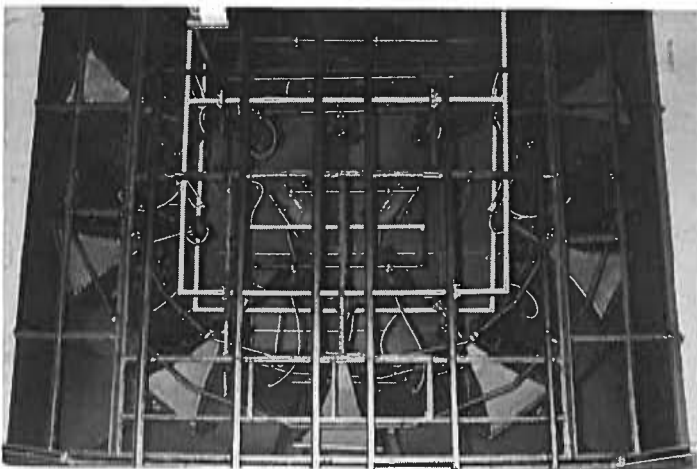
means when the auditorium isn't full, strategic parts of the cluster can be muted - and different, preset EQ/tonal balances can be immediately selected for sound reinforcement, variety, cabaret, rock, etc.

For music reproduction or reinforcement, we've installed Greystone's 'Inflexor', the unique dynamic tonal compensator which responds automatically to different SPLs. It brings out the excitement when sound levels are kept low, and can be switched remotely in and out of circuit.

BD: What are the other HI-Tech innovations?

MB: There's excellent **visual** monitoring of the speaker group-settings, and an ability to move the two tons of cluster at the touch of a button, either from the lighting catwalk, or from the control room.

We take the view that equipment can divide into two areas. On the one hand, 'preset' equipment, normally set up by our engineers, and on the other, the equipment



The cluster from above.



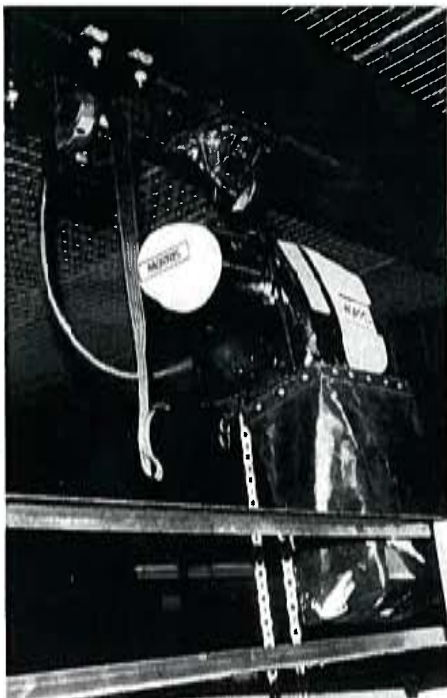
Tony Oates and Hugo Roche of Shuttlesound aligning cluster components.



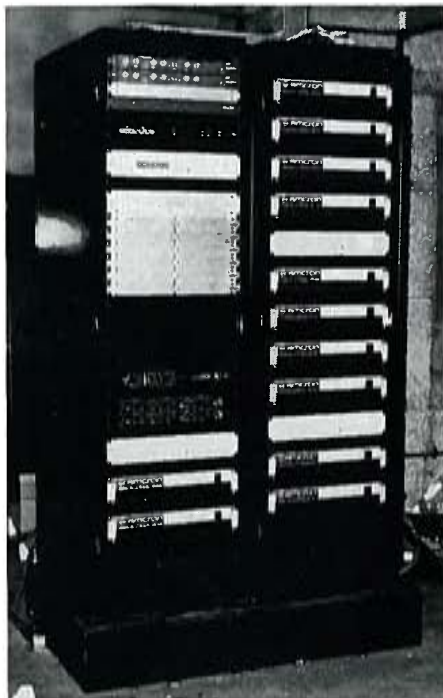
Sound control with cluster control to the right.



The control switch ensures correct positioning of cluster.



The motor for the lifting mechanism. Note chain bag and limit strap.



The rack, with bank of MicroAudio programmable EQ PODS on the left.

that the operator works with on a day-to-day basis. Each provides a number of states, for example, ON or OFF. This might sound trite. However, the principle we are trying to fulfil is the provision of a number of preset states of operation. As Mark Chapman said earlier on, with limited staff it's not possible for the client to dedicate engineering time to the sound system. Therefore simplicity must be the objective.

The future for conference PA
BD: What's the future of this kind of installation?
 MB: We have what must be one of the most advanced audio installations for conference work that exists anywhere at this present time. It vindicates what's been put across by top US sound consultants at the annual Pro-Sound seminars we've held in recent years. We feel certain it marks the beginning of an era where central clusters employing high

'Q' accurate C.D. (constant directivity) horns are de rigeur for maximising 'gain before feedback'. At the same time, we know that it'll be us the rest of the industry will be following, in our concentration on the signal processing. During my visit to the 6th AES sound reinforcement convention in Nashville, details of a proposed RS422 interface for audio control were announced, and seem likely to be adopted. This lays the ground open for the sort of revolution we've already seen in musical instrument interfacing, namely MIDI.

The sole reason for us being in the market is to help the contractors we supply to provide a better and hopefully more profitable service to clients. We're in the fortunate position whereby we're not dependent on contracting in any way as regards our profitability. It contributes only a small amount to our turnover. So we can afford to pursue the high technology line. If we ever find ourselves competing against any contractor who's using the same kind of technology as we're trying to pioneer, we would naturally decline to tender. At the same time, the costs of innovating new systems cannot legitimately be put at the feet of those people who's livelihood depends directly on installation.

Conclusion

The point made by Mark Burgin is this: there's a myriad of technology available to contractors. What's going to make the difference is success, not only in choosing the right equipment, but also in gearing it up to the real needs of sound system operators. At the end of the day, all installers stand or fall on the successful operation of the equipment by their clients.

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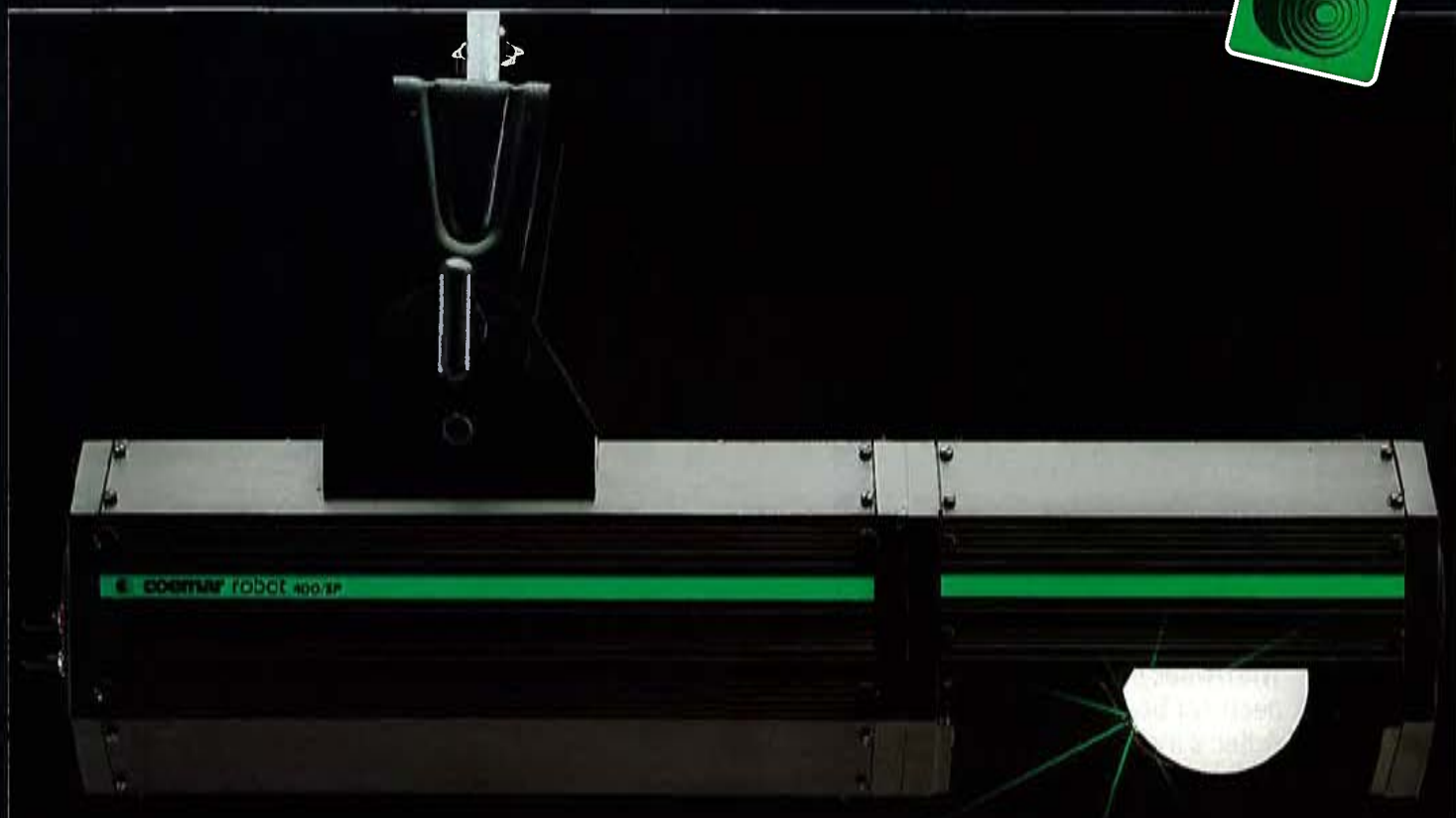
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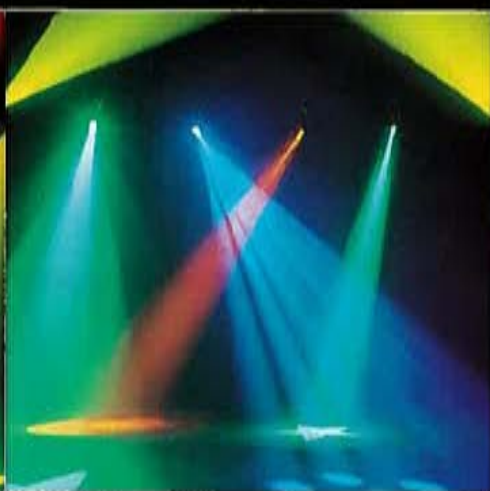
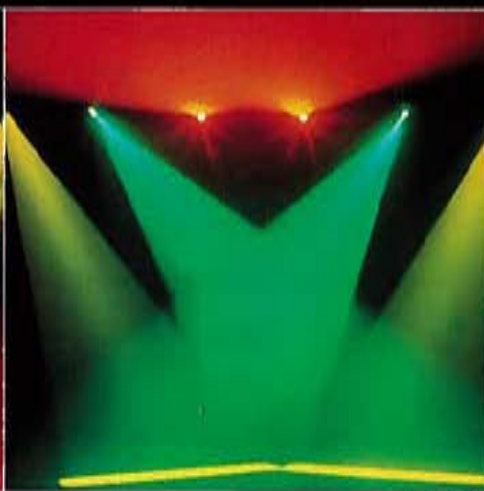
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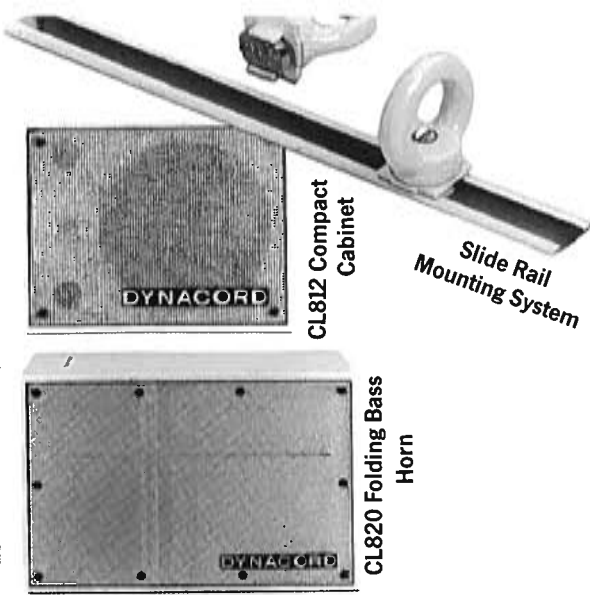
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AVITEC SPEAKER MENU

AVITEC SPEAKER MENU



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DYNACORD

Dynacord's new speaker range includes the **CL 820** folded bass horn and the **CL 812** compact cabinet, which can be used as a stand-alone full range cabinet or actively combined with CL 820 as a mid/high cabinet. The new range features a new textured white finish, and incorporates a slide rail mounting system for flying. A three year guarantee reflects the manufacturer's confidence in their product. We ourselves are impressed with the tight bass and smooth reproduction through the vocal range together with crisp highs, without fatigue even at high SPLs, of the 820/812 combination.

CL 812: 2 way (30 cm cone driver plus bi-exponential tweeter) fully overload protected. 150w RMS, 8 ohms nominal impedance, 98 dB/1w/1m, Max 123dB/1m. (W) 501 x (H) 396 x (D) 335 mm.

CL 820: "Half-W" folded bass horn (45 cm bass driver) fully overload protected. 200w RMS, 8 ohms nominal impedance, 104 dB/1w/1m, Max 129dB/1m. (W) 776 x (H) 505 x (D) 425.

RAMSA's speaker range is now distributed by Avitec, with the **WS-A250** bass cabinet and the **WS-A200 E** compact cabinet bi-amped actively, being another high quality system recommended for the small to medium size club. Again, the quality is excellent, with a slightly lower bass extension (but perhaps less ultimate "punch") and a brighter top end, when compared with the Dynacord system.

The **WS-A 200 E** can be used horizontally or vertically, with both the horn and the grille being user changeable to either mode. Hank bushes are provided for flying, also in either mode. The **WS-A 250** is fitted with Flanges for safe stacking where required.

WS-A 200 E: 2 way (30 cm cone driver plus twin Bessel constant directivity 60°H x 40°V high frequency horn) – all components thermally overload protected. 150w RMS, 8 ohms nominal impedance, 98dB/1w/1m. (W) 395 x (H) 557 x (D) 273.

WS-A 250: Ported bass reflex (45 cm bass driver), 200w RMS, 8 ohms nominal impedance, 100 dB/1w/1m. (W) 560 x (H) 750 x (D) 450 mm.

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WS-A200E Compact Cabinet



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Making a sound impression in entertainment!

Light & Sound Design - International

One of Britain's biggest entertainment equipment companies is little known outside its main business area of concert touring systems. All that is about to change, as John Offord found out when he visited Light & Sound Design's new Birmingham headquarters.

A former Birmingham bus garage is now the UK home of Light and Sound Design - all 60,000 square feet of it. And it's a base for all that's big in the world of concert stage lighting.

"We are the largest lighting company in the world for hire stock," sales director Simon Austin told me. And it's not a fact to argue with, even though quantifiable figures are difficult to arrive at when you've actually manufactured most of the equipment yourself, and there's tons of it in the United States, too. Certainly I can vouch that there's a mass of gear at the new depot, and that's after allowing for up to ten tours on the road. Its replacement value is well over £5m.

Designing and rigging major rock concert tours is a highly specialised business, and it's a big money game provided you get your sums right. You have to think big all the time, and come up with the goods to match the extremes of artistic havoc and imagery conjured up by larger than life artistes and groups. Innovation is the name of the game, and Light and Sound Design have proved themselves masters of solving the puzzles, and at the same time have come up with a range of equipment that is now part of the bread and butter of show business lighting.

The company has grown at enormous rate - particularly over the last three years - and will from now on be promoting itself much more strongly, and also as a leading manufacturer.

"The company started just over 10 years ago when Terry Lee, Nick Jackson and Alan Whittaker organised the lighting for Judas Priest," explained Simon Austin. "They were Birmingham paupers and couldn't afford to buy Parcans from Altman! Terry has an engineering background and he got together with Graham Thomas (James Thomas Engineering) and they made the first spun aluminium Parcans in Graham's garage. Then we had a deal whereby Graham Thomas made them and we sold them, and the profits we turned into hire stock."

At the end of 1978 Graham Thomas went into direct selling, and LSD decided to concentrate on hire. Also at this time the structure of the company changed to its current set-up, with Simon Austin and Steve Dawkes joining, and Alan Whittaker leaving. The four directors each have an equal shareholding, and cover a particular area of the company's operations. Terry Lee looks after production, Nick Jackson is based in the US, Simon Austin covers sales, and Steve Dawkes looks after finance and administration.

"In 1979 we really started getting under way," continued Simon Austin. "We were lucky enough to have AC/DC as an account, and they helped us get on our feet. Hiring gear was our business, and sales was only a tiny part of the turnover.

"We grew at an enormous rate, and at times we over-traded and sailed very close to the wind. But we continued to polarise our efforts on the hire side and carried on

growing even through the recession - mainly because our overheads in Birmingham were low. Investors in Industry gave us the chance to build properly, and they still own a small stake in the company.

"Our original premises was in Gooch Street North at Digbeth in the basement of an old swimming baths and we outgrew that in 1981. We then moved to Oxford Street where we had 22,000 square feet, and we

handled 12 tours at once out of that premises until recently."

At the end of 1981 Light and Sound Design had two major acts due to tour the US - AC/DC and Black Sabbath - and they moved equipment to Tasco's warehouse to service the tours. "Nick was voted out there!" grinned Simon, "and we picked up a lot more work - mainly from British bands going in to tour the United States.



Three of the four: directors Simon Austin, Terry Lee and Steve Dawkes line up on the mezzanine floor of Light & Sound Design's new premises in Birmingham.



California: Light & Sound Design's North American operation is based at Newbury Park in California.

Light & Sound Design in action - a selection from the shows



Marillion 1986 - set and lighting by LSD.



Def Leppard 1987/88 world tour.



Mötley Crüe 1987 'Girls, Girls, Girls' tour.



Marillion 1986.



AC/DC 1978/79.



Triumph 1980.



Scorpions 1984/5



AC/DC 1982.



Def Leppard 1987/88 world tour.



Scorpions - set and lighting by LSD.



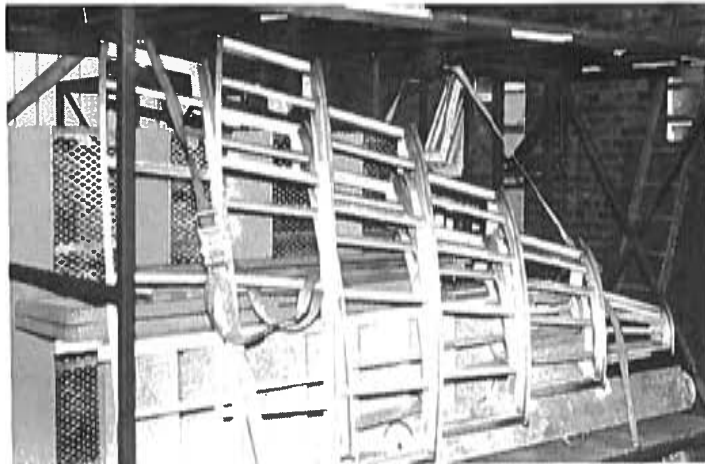
Bon Jovi 1987.



Ken Moxon spins yet more Par cans.



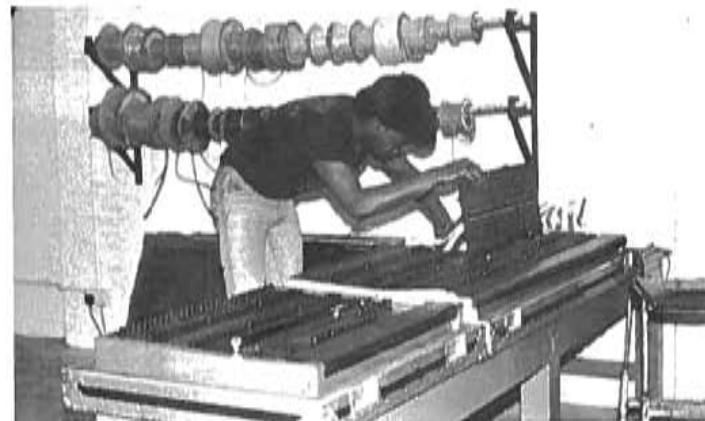
Geoffrey Grainger - ideas from the art department.



Part of the Scorpions' stage set awaits shipment.



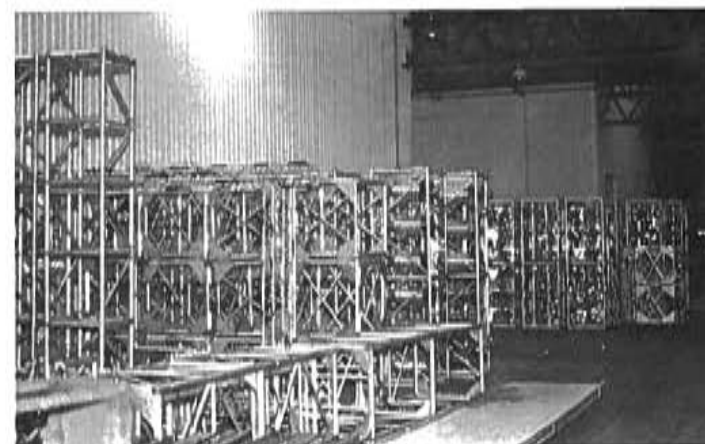
Mark Hunt - head of research and development.



Herman Newell in one of the electronics service bays.



Preparing the next tour: warehouse managers John Mallard and John Hinch.



Part of Light & Sound Design's huge £5m plus stock of touring equipment.



Par 64's waiting for final assembly.

"We hit a period of major growth around 85/86 when Johnny Halliday took out the biggest ever lighting rig with 3500 lamps and 60 VariLites. The gear came to over £600,000 in value and at the end of that it all came back and we had to hire it out! At the same time we had 'Prince' come up, and that was also a very prestigious tour."

By now, Light and Sound Design was running at vastly higher turnover levels, but a further impetus was just around the corner. "We sold a system to Fiatlux in France, and we soon increased our business in the French market. We already had a fair share of the business, but now practically all touring in France goes through them."

"In Germany we formed a joint company with Rocksound in Hannover in 1986. With the full backing of the British operation it now takes care of the majority of the German market. They have an overall lamp stock of 1000 to 1500 lamps, and we can back that up from England, of course."

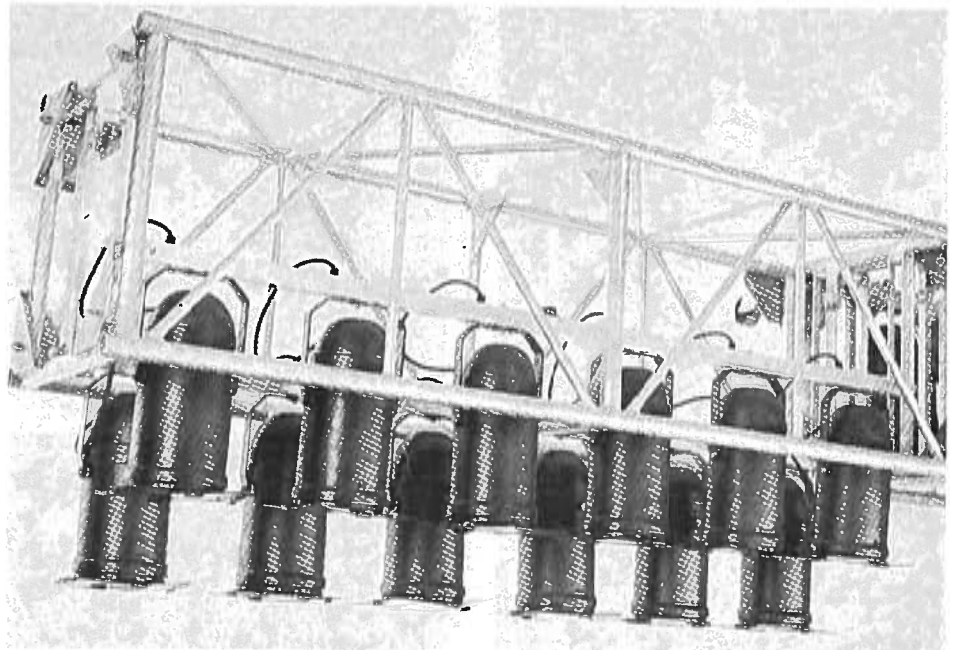
By the end of 1986 business had really

● **Steve Dawkes** trained to be an accountant, but ending up developing a lighting system, running his own business for four years. He began renting some equipment from Light and Sound Design and ending up joining them.

● **Simon Austin** was working on a law degree at college before he was flung out for spending too much time on his other duties as a social sec. He ran a stage crew in the Stoke area, and then decided to get into rock and roll. He applied to every company in Europe and Light and Sound Design were the only one who replied. He's been there ever since.

● **Terry Lee's** father had an engineering business, and he trained as a toolmaker. From the age of 15 he had been involved with lighting and soon built his first system for club bands with Par 38's and fittings. In at the origination of much of today's standard concert touring equipment, he brought the first pre-rigged trussing to Europe.

● **Nick Jackson** was at college studying photography when a group of friends formed a band. He became a roadie, and drove the van. "It seemed like good fun to go into the entertainment business for a while when I finished college." He met Terry Lee and soon after they formed Light and Sound Design.



From the company that first created the concept - the D-Type pre-rigged truss from Light & Sound design.

taken off, and an interesting element was that sales were a part of the growth. Rental business expanded, but sales grew to a point where they now account for around 35% of Light and Sound Design's multi-million annual turnover. Of that 35% Colormag accounts for 30%, Parcans and lanterns of various kinds around 40%, and other sales including trussing take the rest.

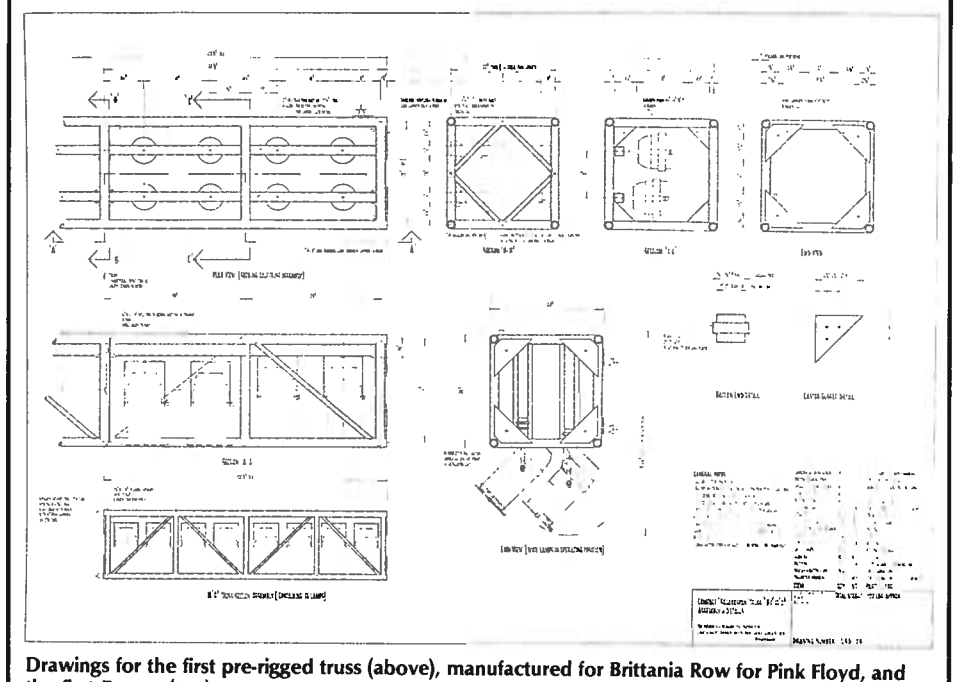
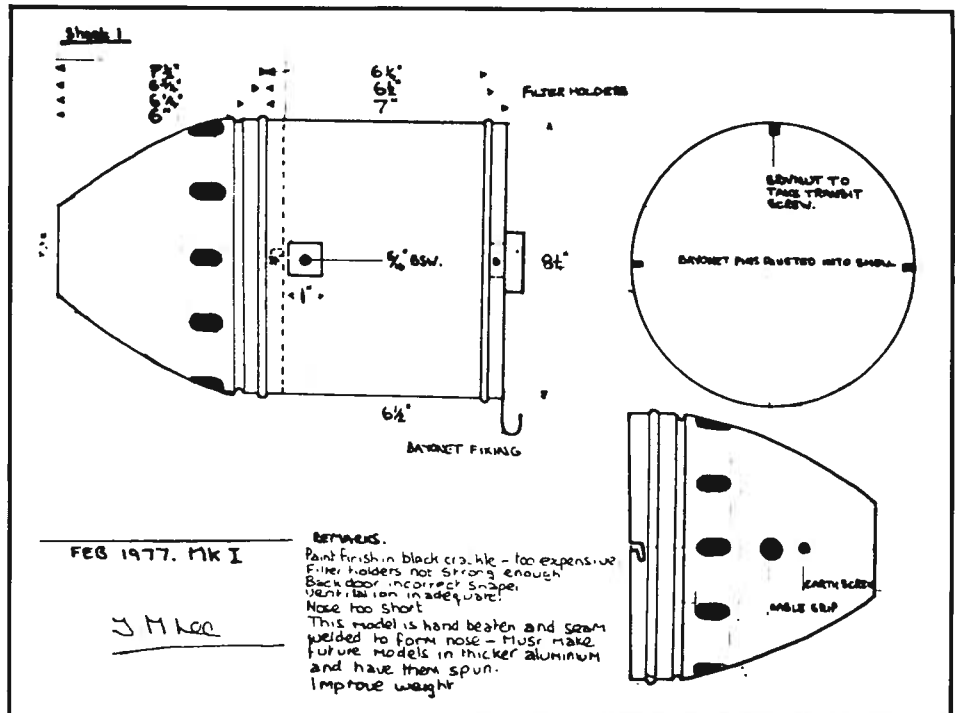
"Colormag was very much the spring-board," said Simon Austin, "but stage sets alone accounted for £600,000-plus of turnover, and against this the tours keep going on and on."

The company's new freehold base, which they occupied in mid-April this year, gives them 64,000 square feet of highly adaptable space in which to plan future operations. 11,000 is used for offices, test areas, and so on, the rental warehouse uses over 30,000, and the manufacturing unit takes the rest (around 20,000 sq.ft.). 45 people are employed in Birmingham, with between 60 to 80 on the road at any one time, and over in the States another 25 look after that arm of the business. (For reserve space they have also retained their previous premises for storage purposes.)

One big advantage in taking over a bus sta-



Chris Millard with a Molemag colour change unit.



Drawings for the first pre-rigged truss (above), manufactured for Britannia Row for Pink Floyd, and the first Parcan (top).



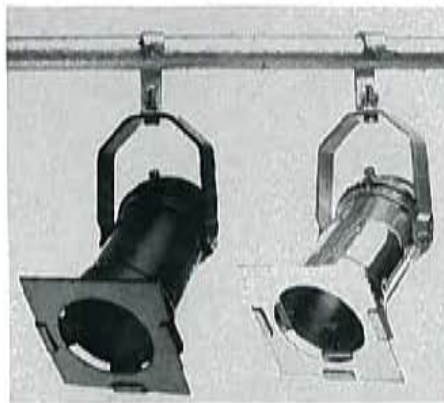
First exhibition: Light & Sound Design at the recent USITT exhibition in Los Angeles.

tion is that by its nature the ceiling height gives the opportunity of expanding upwards. And there are two interesting ways this can be exploited. Firstly, it will be easy to build-in extra floor levels as they are required, and secondly, Light and Sound Design plan to build two 48' x 48' grids next to each other (that can be joined) and another 60' x 60' unit so that they can fly trussing to 24ft for lighting rehearsals. Coupled with an extensive art and design department, this facility will be unique, and a lighting designer's dream.

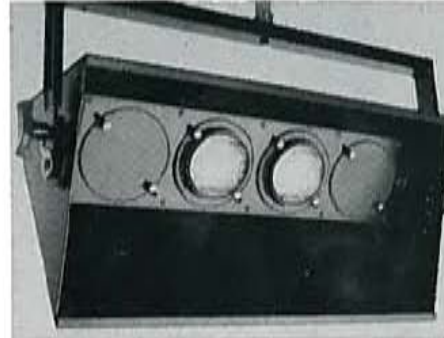
Up to now, Light and Sound Design have never placed a trade advertisement, and until the recent USITT exhibition in Los Angeles, had never previously exhibited their wares.

That's all about to change. They reckon they've got a lot to shout about, and I would agree. They've been in at the start of many of the industry's most innovative developments and they mean to stay in that role.

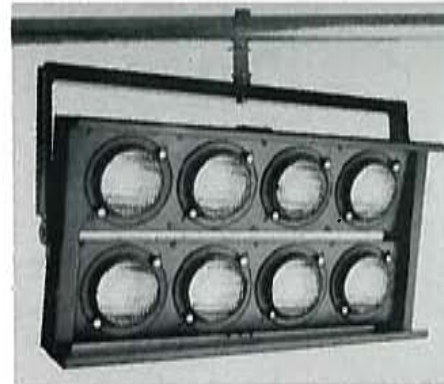
"We are a very family-run organisation,"



Par 36 lanterns, with spun aluminium body.



LSD's cyc unit has an integral adaptor for the ColourMag system.

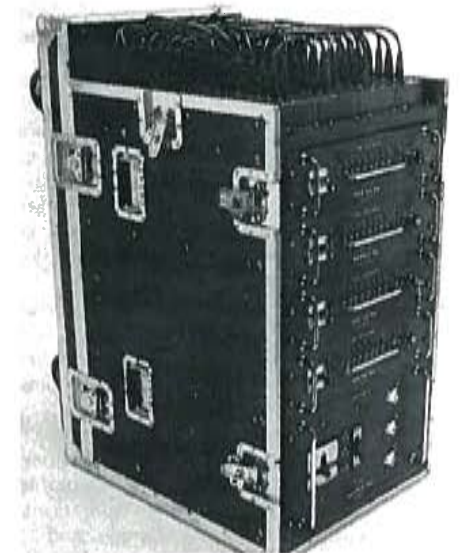


The 8-cell Molefay can also take ColourMag.

said Simon Austin. "Our secretaries will go down and help with production if it's necessary.



Keith Owen, head of electronics.



LSD also specialise in motor control systems. This is the 32 channel rack mount unit.

"It's not a hugely planned organisation, and we are not scientific businessmen. We've built it all up with a hands-on feel."



ColourMag can be used with both 8 cell Molefay and Cyc units.



A close-up of the standard ColourMag unit.

Light & Sound Design



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Allen & Heath: Coming Up New

John Offord talked to John Ball, recently appointed as chief executive of Allen & Heath and sister company MBI Broadcast Systems, at the organisation's Brighton headquarters.

Allen & Heath was established 20 years ago in London. About seven years ago a new factory at Penryn in Cornwall was purchased, to gain the advantages of a modern clear floor production unit at a reasonable cost. The head office and research and development are now based in an eighteenth century house in Ship Street, Brighton, in the heart of the 'Lanes'.

Over the years the company has manufactured various sound-related products, including quality tape recorders, but in recent years all emphasis has been placed on developing quality, but affordably-priced sound mixing consoles.

Their sister company, who share production and R & D facilities, are MBI Broadcast Systems who produce custom-built desks for broadcast studios. Although they number the BBC among their customers, like Allen & Heath the vast majority of their production goes overseas.

John Ball saw the untapped potential at Allen & Heath, and knew he was on to a good thing. And presumably the directors of Hendon International, the parent group, also knew they were on the fast track when they pulled him out of the immediate London theatre scene, and sat him down in a desirable office in a quaint little street at the end of the Brighton line.

"Basically, the directors felt they needed someone who was more into the theatre technical world. You can go on to the open market for someone, but if you can head hunt then so much the better. I suppose I came here by reputation," he said.

"Allen & Heath have had lots of successes over the years, and have developed some interesting products, but each time they went away from producing mixing desks they seemed to shoot themselves in the foot and had to climb out all over again.

"The desks they have made are of superb quality and their reliability is something nobody argues about. Originally they'd built small desks that had been used in theatre work, and you'll still see them around. But then they moved away from that, and it's reached a point these days where if you went into a theatre and said you were from AHB they'd hardly connect you with Allen & Heath.



John Ball: "I think I'm here to be a kind of father figure. When you get a team of clever devils around, who are always striving for God knows what, to have brought a young man into this outfit would have been like dynamite." (John Ball is a very young 60)

"Sadly, the company has lost the theatre link in this country. They've lost their way in this area of the market, and concentrated on studio desks, at which they've been quite successful.

"The name of the organisation when I came in was AHB-MBI - a tangle of letters. But they are two quite separate companies, so rather than keep them together, we decided to put them on divergent courses.

"So Allen & Heath has gone back to its original name - but with a new trade mark - and MBI, who provide complete custom-designed systems for radio stations, will go in a different direction. Each company will have its own range of agents, and there will be plenty of room for both."

As chief executive, one of John Ball's major

roles will be to make sure that the market areas for both operations are correctly covered, and he has spent the first six months of his tenure preparing the ground.

"We've now got everything in place," he explained. "We've tackled the advertising and promotions side to achieve a stronger image - mainly in the UK, because that's where we need it. Abroad it's not so much of a problem, and in America we are a well-known name."

Alongside the image, the product range itself has been closely looked at, and new products are on the launch-pad whilst others have been up-graded.

"We already have a successful range in the SR Series," said John Ball, "but it wasn't modular in any form. That may be OK for certain areas of the industry, but the business I know best - the contractors and hirers - need modular equipment.

"So we've built a modular version of the SR range, and it's starting to roll out of the factory this month. It looks as if it's going to be a real winner at the lower end of the range.

"We've had the problem of a very patchy range. The next up the line is the CNC range which has a multitude of facilities but for some reason or another doesn't look worth the money. In my view it's dated, and worse still, no one likes the colour! Yet no one will argue that you can buy more impressive looking and expensive boards and our CNC will beat them. For the money you get a tremendous amount, but we've got to take a fresh look at it in the near future," said John Ball.

Next up the line is another new desk - the Saber - which will be launched at the APRS Show at Olympia in June. It will be placed at the high end of the 16-track market, and Allen & Heath are sure it will be an immediate winner.

"At the top end of the range is our Sigma system. We have now given it built-in patch and automation, and further modules have also been added. And it's all at a very attractive price!

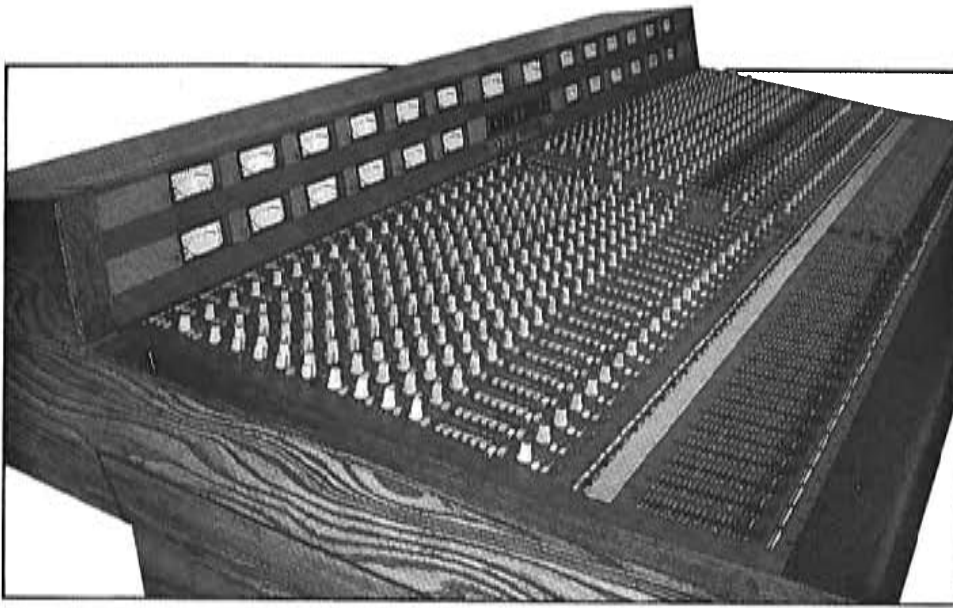
"Really there was a minimum amount of



Dave Negus is responsible for testing all broadcast desks.



Kevin Vercoe gets down to business at the Penryn factory.



Top of the range: Allen & Heath's Sigma system.



Glen Rogers gets the first Saber ready for test.



The new Saber - due for an APRS launch this month.

viable product, but when we've finished this current span of development we'll have a very good range. It hasn't all been done in the last six months, obviously, but I've been able to give it a final urge.

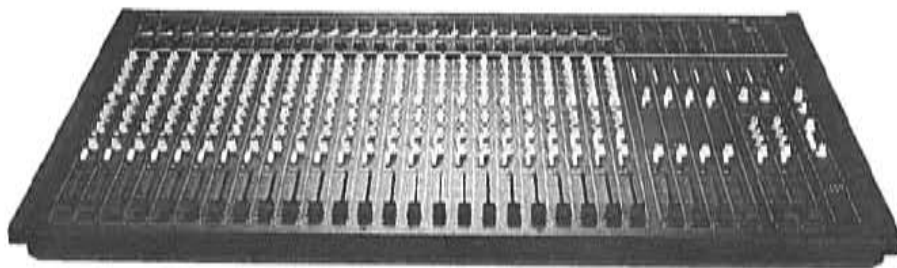
"So we have the low-end SR range, the SRC modular version, the CNC to be up-graded in the near future, the new Saber range, and the enhanced Sigma at the top end. If you're a dealer who's been weaned on Allen & Heath product, there's no earthly reason why you can't buy Allen & Heath product in the future.

"We don't touch the real bottom end of the business, and neither do we go to the very top end - but then they are very specialised boards. We've all got a niche in the market, and the broad middle range is the one we're going for."

Allen & Heath's exports to Europe are handled by Expotus - "they have been quite superb for us" - and in the United States AHB (USA) Ltd looks after North American sales from its base at Orange, Connecticut.

It is in the UK where policy has been changed. "In the past it had been policy to let other people handle chunks of the market, rather than have our own sales force," explained John Ball. They had appointed an exclusive UK distributor - State of the Art - because of a good record on the sales front.

"My feeling is that that wasn't the wisest



The SR series sound mixing console.



Glen Rogers, director of research and development, in his Brighton office.



An SR mixer in action at a recent commercial product launch.

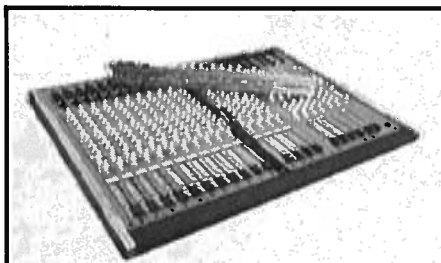
thing to do because often dealers don't want to buy from another dealer - and I'm sure the arrangement didn't help overall sales. We've concluded that arrangement now - State of the Art will still sell our products in their area, of course - and we are creating a network of dealers. It will probably be a two-tier arrangement where one set of dealers deals with the studio side, and the other network handles sales to companies serving the live performance side for both sales and hire. The structure is now more or less in place."

Allen & Heath and MBI's corporate office in Brighton houses 18 people, including the research and development for both companies, while the manufacturing unit at Penryn has over 50 employees. John Ball's task is to motivate and co-ordinate so that the operation can support a major increase in sales.

"There is a very good team here - and most particularly in the area of R and D. 'I think I'm here to be a kind of father figure. When you get a team of clever devils around, who are always striving for God knows what, to have brought a young man into this outfit would have been like dynamite. I've got to bring all the elements on so that by the time I'm ready to go away they will have learned a few tricks from an old dog!

"We have a very good name for quality, and I've been very impressed. The trouble has been that they haven't pushed the name hard," continued John Ball.

Richard Harris, editor of Strandlight for Strand Lighting, and now the editor of Allen & Heath's own publication 'Sonics', had some revealing feedback from a recent market survey: "People were saying 'the products are very good - but they keep very quiet about them'. A low profile is really our pro-



The new SRC modular sound reinforcement desk from Allen & Heath comes in three main frame sizes - 32, 24 and 16-4-2 - that can be fully or part filled. A stereo and sweep EQ module is an option to the well laid out mono module.

All three module types have electronically balanced XLR mic inputs, 48v phantom power switch, 4 aux sends that can be set pre/post fader and EQ. The stereo module has a RIAA input and remote start facilities as standard. The group outputs are also electronically balanced on XLR connectors.

Much early interest was generated when Beyer used the SRC on their stand at the AV exhibition. Rab Quinn of Greenstuff Ltd is quoted as saying: "I was impressed by the simplicity and professional look of the board. For me it offers the right facilities at the right price."

blem in the UK, and that probably explains why Allen & Heath do so much more business abroad than at home," he stated.

Despite that, Allen & Heath and MBI have a combined turnover worldwide that approaches £4m. Allen & Heath's US turnover exceeds \$2m, and its European operations account for £600,000. MBI's operations total £1½m. The low UK turnover of just £200,000 annually is the one John Ball is homing in on

as a big booster for his target expansion of a 50% worldwide increase on group sales for 1989.

"We are predicting a big rise of around 50% next year," he said. "That's a big rise - have no doubts about it."

"From the Saber and SRC range we are looking for a whole new lump of turnover for a start. Whoever we've talked to so far has said: 'whenever you've got the products, we're interested'.

"The only problem we may have will be coping with the demand."



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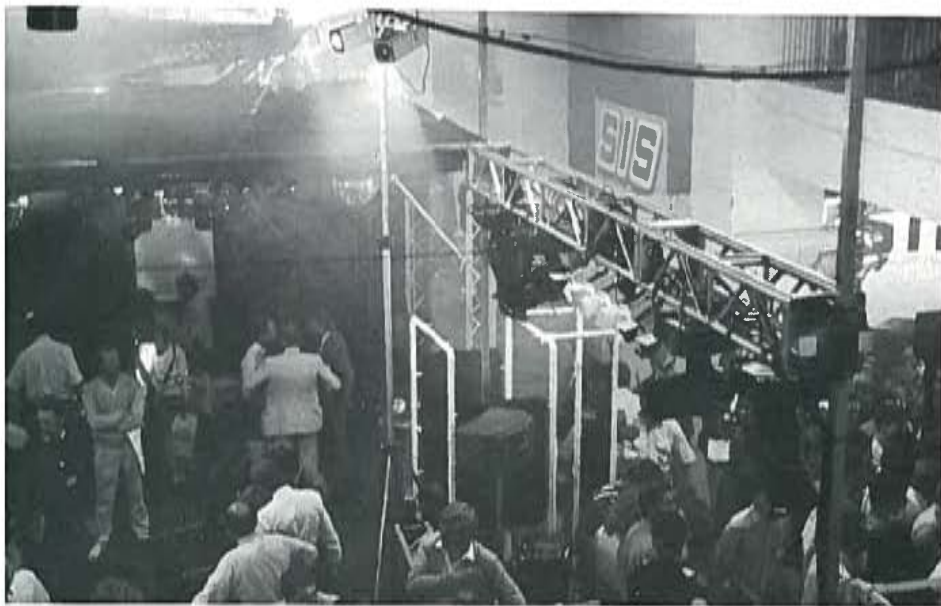
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PLASA's Biggest ever Show



PLASA Show 1987 - crowded to capacity.

To visitors attending the 1988 Light & Sound Show, it will appear at least three or maybe even four times larger than the 1987 event.

In fact, stand space has increased two-and-a-half times, from 1750m² at Novotel to over 4300m² at Olympia 2, the new venue for 1988. But the Show will now have a spacious feel about it, with better facilities for both exhibitor and visitor alike. And it will all emphasise the fact that PLASA's Show is not only the number one show in the UK by an easy margin, but also a leader on the international circuit for entertainment industry trade events.

Many new exhibitors, representing companies across the full spectrum of creative lighting and sound equipment and services, will be joining the ranks of the regulars. (A list of exhibiting companies booked to date is given on page 30). Due to another increase in available space there are still some stands available, but application will need to be made early.

The largest stand this year will be Pulsar's, with 233m² of space devoted to their own and Clay Paky of Italy's products. Companies who have larger stands this year include Optikinetics, Mode Electronics, Laser Systems, Zero 88 Lighting, Squire Light and Sound, JEM, WB Lighting, and APIAD (representing over 10 Italian manufacturers).

PLASA Chairman Peter Brooks told L+S: "The 1988 Show certainly promises to be the greatest ever. I'm aware that I'm always saying this, but we really are going from strength to strength. The bigger venue for 1988 will mean not just more exhibitors, but more visitors too. We are concentrating on getting the right international flavour to the Show and further increasing the 'quality' of visitor.

"I am quite convinced that holding the Show each September has established its popularity as the foremost event of its type on the international calendar."

Official Catalogue

The Official Catalogue for the Show will be mailed with the September issue of Lighting+Sound International, and also given free to every visitor on registration.

All exhibitors will be contacted by the magazine office with details of free editorial space and advertising information.

Please telephone John Offord on (0323) 642639 if you require any further information.

PLASA Dinner to be Organised

PLASA intends holding a Dinner on the Sunday evening of the Show, September 11, and it is hoped this will be the first in a regular series of annual events.

Watch for further information in the next issue of Lighting+Sound International.

New Industry Yearbook to be launched at Show

A new PLASA Yearbook for the Industry, currently being compiled, will be launched at the Show.

Any companies who haven't received a form for free editorial entry should ring the magazine office on (0323) 642639.



Light & Sound Show

11-14 September

Olympia 2

Hammersmith Road, Kensington,
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PLASA Office:

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Tel: (0323) 410335



The 1988 PLASA Light & Sound Show will be opened by John Butcher MP, Parliamentary Under Secretary of State for Industry and Consumer Affairs.

ColorPro on the Lightfactor Stand

"Lightfactor Sales Limited will be found in the quieter area of the Show this year, in order to demonstrate many of the new products that have recently taken the industry by storm," John Adams told L+SI.



In pride of place will be the ColorPro fixtures imported from the USA. These lanterns represent the state of the art in colour control, and the purity of colour produced by dichroic filters is an experience in itself, say Lightfactor. Also on show will be the Laser Tracer 8-head system, and new developments from Colibri including the new products recently launched at Showtech in Berlin.

A new catalogue can be anticipated, which will contain details of the complete range of products imported and/or distributed by Lightfactor, such as Meroform, Zipstrip, Programsistem, Light Processor, Bose and Satel.

"Other product developments remain under wraps," said John Adams. "But their will be lots of new ideas to be seen."

Rosco to Increase their Fog Machine Range

Roscolab will be launching a new lower cost smoke machine, based on their highly successful 1500 model, which introduced for the first time the ability to control volume of smoke. They will also be launching a high output fog generator.

A market leader in the field of colour filters, Rosco will be showing an extended range of Supergel, samples from their wide range of decorative materials, mirror surfaces, drapes and light-intensifying textiles, and rear projection materials.

Also on stand will be a range of animation and moving effects, expanding their popular range of gobos.

Another System

No details yet, but Astralloy will be launching another system to add to their already popular Astralite, Structuralite, Minilite, Quatralite and Bilite range.

Balzers to Launch High Performance Filters

A new approach to colour filters, based on thin film technology, will be the focal point of Balzers display at the 1988 Light & Sound Show.

The Dichrolight range of 17 dichroic filters offers distinct advantages over existing colour media, such as gels and coloured glass. Their main features are pure colour, excellent light transmission, no fading and high temperature resistance, say Balzers.

Application in the entertainment world will be in theatre and concert lighting, TV studios and discotheques, either as conventional colour filters or for use in lighting effects and colour changers. In architectural areas the permanency of Dichrolight will be especially beneficial for shopping and leisure centres, or display and exhibition lighting.

Full details of Dichrolight are given in Lighting+ Sound International's Equipment News section, June issue.



The Electro-Voice 'Motivator 2' - new from Shuttlesound.

New from Shuttlesound

New products on show from Shuttlesound Limited will include the processor controlled system - Delta Max, N/Dym 1 driver and EVX woofers from Electro-Voice, the Amcron MA 2400 amplifier and CM mics, from BBE the revamped 422 and 822 processors, POD configurations from MicroAudio and the Samson Stage II Series wireless system.

Also on show will be the Inflexor from Greystone Industries and for the first time, the Motivator 2 and 3, which have been specially designed for the discotheque and club market.

More from Anytronics

"Anytronics will be making a number of additions to their already highly successful range of power packs," Bob Hall told L+SI, "and we will also be introducing a number of lighting control systems to complement the range."



Sue Stanton will be looking after the Show's press office for the duration of the event.

Latest in Fibre Optics from Par Opti Projects

Some interesting new fibre optic lighting products will be shown for the first time on the Par Opti stand, Paul Raymond told L+SI.

A robotised, remote controlled colour-changing light source with sound controlled effects for fibre optic bundles will be shown, and also on display will be leaky (sideglow) fibre bundles, Startube and Star Rod newly patented tubular lighting effects, and a new ceiling component mounting system for fast and simple fibre optic ceilings.

Bose to Launch its Technological Flagship

At the PLASA Light & Sound Show Bose has announced the arrival of the Acoustimass™ professional speaker system.

Acoustimass is the first practical, high-performance, completely self-contained professional sound system, say Bose, and combines a dazzling number of innovations in one package.

The unique design of the Acoustimass incorporates a two-way, seven-driver speaker which launches sound into the environment by two air masses rather than by a vibrating surface. The benefits, claim Bose, are purer sound, lower distortion, a small and more compact enclosure, and more bass output.

The two-state modulation amplifier employs digital switching technology. Mounted within the speaker enclosure, this system converts 90% of the power drawn from the AC into audio output power for the speaker.



The Bose Acoustic Cannon.

Like the world-famous Bose 802, the Acoustimass professional system has been designed for both portable and installed applications: theatres, concert halls, nightclubs, discos, cinemas, mobile DJs, and more.

Also on display will be the range of Bose professional equipment including the Acoustic Cannon, which made its debut at the 1987 Show, and which has now been installed at various venues in the UK. In addition, Bose will be exhibiting their CD digital music system with the supporting dedicated software.

ADDA Celebrates

ADDA Super Cases Limited, the company that was first on the market with fibre record cases, will be celebrating their 10th anniversary at the 1988 Show, and part of the celebrations will feature the launch of a completely new designer range of cases to be called the 'ADDA Collection'.

"We will be launching them at the show in a really big way," Monica Saunders told L+SI. "They are a new conception."

Pulsar and Clay Paky

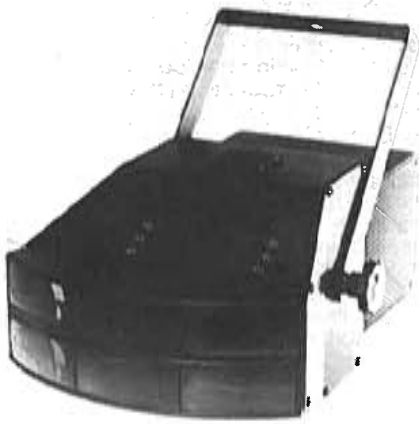
On the Show's biggest stand, Pulsar Light of Cambridge will be showing the latest products from Clay Paky of Italy, as their exclusive UK distributor.

"At least 12 new Golden Scans will be on the stand," Ken Sewell told L+SI, "and they will be joined by two Oska control systems."

A comprehensive range of products from both companies will be demonstrated.

WB Lighting/Coemar

The latest products from Coemar and TAS of Italy will be shown on the stand of WB Lighting. "You can expect some interesting surprises," Mike Wood told L+SI.



Now exclusive UK distributors for Sapro of France, Jivelight Ltd will have on demonstration the new 'Magic' flat beam range of effects. The Magic 2 is illustrated above.

Oxtron Digital Systems

Oxtron will be showing their CL600 controller, which now has additional features such as audio sound level control to complement the total environmental control concept.

Perhaps of even more interest will be the release of the latest super compact disc background music systems. It is a totally new approach to sound systems, say Oxtron, offering the very best in sound quality and the controllability of a computer. The system will look after all music reproduction and operation automatically. It is capable of selecting style, speed, format, age, hit, decade of hit, target age group, key and beat! The system was developed for one of the company's clients for whom Oxtron are agents.

Avitec Again

"We haven't decided on the format of our stand yet," Avitec's Tony Kingsley told L+SI, "but Paul Dodd will be working on it shortly."

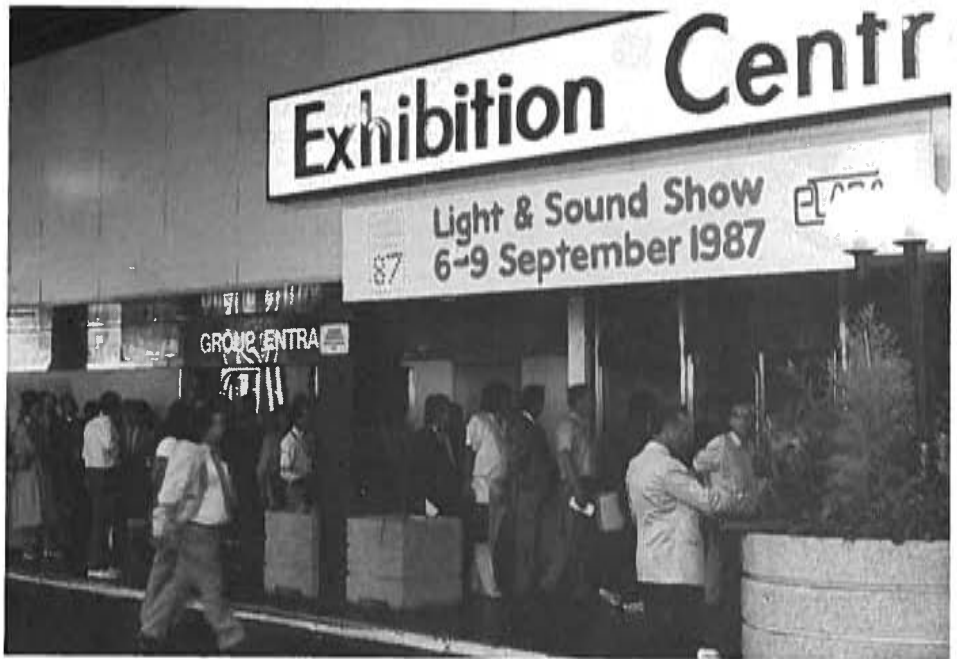
We are promised it will be even more spectacular, with many new products on view. So there is every reason for Avitec watchers to troop as usual straight from registration to the their stand on the ground floor!

Italian Connection

Following the success of their efforts at the 1987 show, APIAD will be co-ordinating (in conjunction with the Italian Institute for Foreign Trade) 10 member exhibitors at the 1988 Show, in addition to having their own stand.

The companies are: ProgramSistem, Fly, King's Sound, Spotlight, Sear, Videoprojector, Artick, Tecnitron, and Music and Light Production. Other Italian companies will also be represented on the stands of their British distributors.

All companies represented will be showing pro-



5,300 Visitors can't be Wrong!

5,300 visitors attended the 1987 PLASA Light & Sound Show at London's Hammersmith Novotel Exhibition Centre in September last year, and organiser David Street is expecting another record attendance for the first Show in its new venue at Olympia 2.

No one's made any guestimates as to likely 1988 visitor numbers, but with many new exhibitors, well over twice the stand space, and the usual strong contingent of overseas buyers expected, confidence is high that attendance numbers may well jump by thousands rather than hundreds.



John Lethbridge of Cerebrum Lighting gets into detailed explanation.



Citronic look ahead to 1988.

ducts just launched at the SIB Show in Rimini, and now in full production.

APIAD's president Nicola Ticozzi told L+SI that he was sure the Light & Sound Show in London would further enhance the Italian industry's position at the top international league - most particularly for special lighting effects.

New from Tobysound

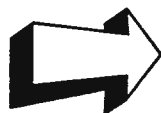
In addition to the popular Quattro lighting controller, developed for the pub market, Tobysound will also be featuring a unique new sound control product which they are keeping under wraps until the event.

More Space Allocated Some Exhibition Stands still Available

Due to exceptional demand for stands PLASA decided to further increase space available by utilising part of the 2nd floor at Olympia.

There are still some stands remaining on level 2 and a few on level 1, where exhibitors requiring larger stands have moved to the higher level, releasing some spaces.

For details and plans call David Street, exhibition organiser, on 01-994 6477, or post off the coupon opposite TODAY.



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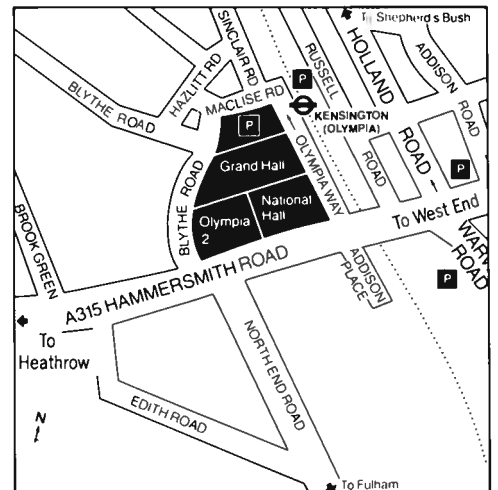
Light & Sound Show

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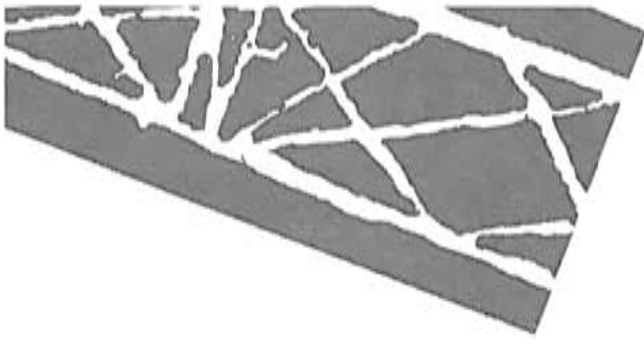
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The new home of the Light & Sound Show for the 1988 event is one of London's newest, purpose-designed exhibition halls. It combines all the comfort of a hotel venue with the practicality conventional exhibition halls offer. Its size has enabled PLASA to answer demands of the industry by doubling the size of the exhibition without losing the friendliness characteristic of the Light & Sound Show.



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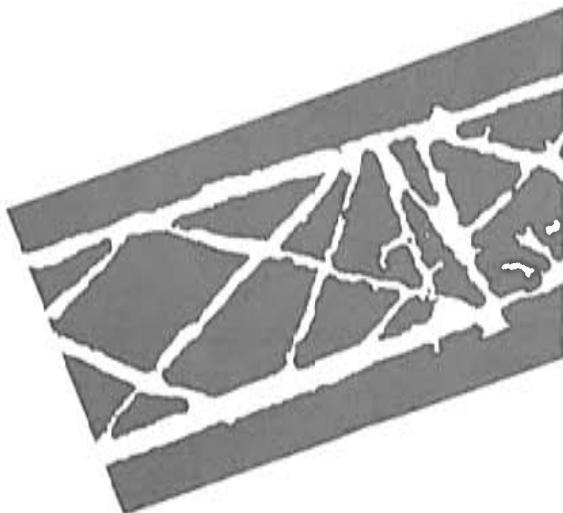
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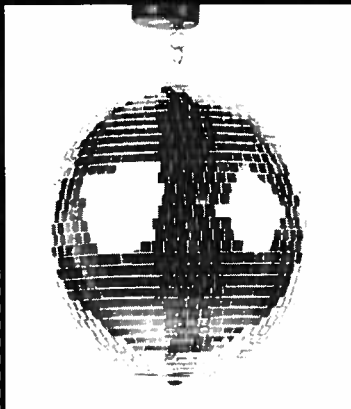
Kremesa, one of the world's leading lighting manufacturers, innovators of exciting effects such as the amazing Alien, present their "Traditional Favourites" collection.

CR 4T MINI HELICOPTER

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



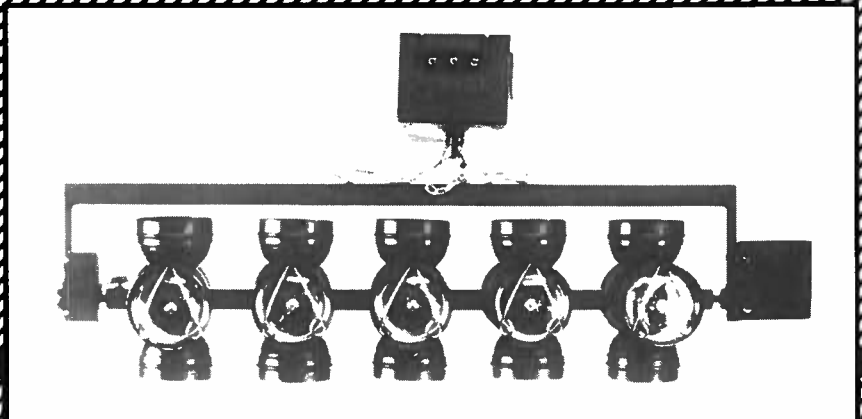
MIRROR BALLS



The Kremesa mirror balls are available in 30cm, 45cm or 83cm diameter, in full or half sphere versions, with a gentle rotation of 1/2 r.p.m. Mirror balls are an underestimated mood creating device, and are particularly effective when used in combination with the latest high power spots and projectors.

JOTA "HARVESTER"

The latest version of Kremesa's Jota uses their new high power long life Parabola Spotlux 50 watt lamp units. The vertical, horizontal and multi-armed options of the Jota provide a swirling, dramatic effect suitable for any rig or venue.



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CR 56/100 High

POWER SPOT



This unit uses Kremesa's recently developed Parabola lamp reflector unit to give an exceptionally powerful near parallel beam combined with long lamp life and cheap lamp replacement (12V100W quartz). Quantity discount available.

CR 90/360 SUPER



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

CR 4 V/V WAYER



This popular and versatile effect can be mounted in any position at any angle, including on moving rigs, and the lamp heads are adjustable so that the sweeping beams can be set parallel or splayed into radial " fingers " .

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Up to Date with Strand Lighting

It would take a combination of at least three of the largest companies in the industry to even begin to approach Strand Lighting's level of business in the world of entertainment lighting. John Offord went Strand-Watching around the company's new HQ at Isleworth.

You'd really need three or four visits to Strand Lighting to cover it comprehensively and speak to all the key people. So for obvious reasons of time and availability (both mine and their's) my single-day visit must be seen in that context.

But I did manage to speak to sales director Russell Dunsire for a first word, and new managing director Oliver Hartree, who had the last - plus a few other VIP's in between.

Russell Dunsire progressed through the ranks of the organisation, having started his career with the company at their Kirkcaldy factory in 1974. Now sales director, he is responsible for sales worldwide, with the exception of the Americas and the Far East, and he was in a very buoyant mood when we discussed business pointers for 1988.

"All the best laid plans . . . I don't know how we ever cater for these things . . . Right across the range . . . And where do all the products go?"

To cope with the exceptionally high demand for Strand's products, the manufacturing plant at Kirkcaldy in Scotland has had to turn in some record figures. "In March Kirkcaldy had its highest ever output in endeavour to cope with the volume of orders," explained Russell Dunsire.

On the international scene it has been the newly emergent success of operations in France and Italy that has stolen the limelight.

"International sales have been creeping up and up, and we now have four export area sales managers. And you have to bear in mind that they don't have to cover France, Italy, Germany, Switzerland or Austria where we have our own operations. These four guys are covering the rest of the territory.

"France has been an absolutely outstanding success. They've broken every target we've set. We decided that we would serve

ourselves better in the theatre market by setting up on our own in France, so we constituted a company, took staff on board, and were getting operational about this time last year. (We've kept Eclalux on as the studio lighting agents because we couldn't do it better ourselves.)

"We now have ten people in France because it's going faster than we thought. And we've picked up major, major new jobs there. We did the Champs-Elysées Theatre, we have the Bastille Opera House to start on later this year - a major coup - in addition to many other prestigious contracts. Our control systems have made a very significant indent into the French market.

"Moving to Italy, Quartzcolor Trading, the sales arm of our Italian operation, had a very difficult period before we bought them. They were our agents, and we could see from our sales going down that things were in decline.

"We took it over at the same time as the factory, and appointed Andrea Molinari as general manager and now it's a major success. Last year was a year of consolidation: changing people, setting up systems, and trying to iron out all the problems.

"This year they are really cracking on fast. Andrea has kept overheads under control, stock turnover is excellent, and he is over budget on order intake.

"So these are two high flyers, and we've put a lot of effort into them. But there are other areas, of course. Just recently we received a super order from Valencia TV which is being shipped out this week. And major orders from most countries is the order of the day."

Between 60 and 70 people are involved in either direct or sales supporting roles in Strand Lighting, and it takes ten of them just to cover the UK.



Russell Dunsire - Strand Lighting's sales director.

"We have sales manager Ivan Myles plus Alan Luxford who looks after major systems. Then there are six theatre salesmen and two television and film salesmen. This little island amazes me! When you look at the UK, with 55 million people, they keep chunking in the same amount of turnover, year in, year out.

"Invariably we increase sales more than inflation, of course, because that's what a sales operation is about. But we always get to the targets, and we consider our enormous UK sales in both theatre and television are our bread and butter. This company has always believed that unless you have a good, strong home base, you are very weak when you start going overseas.

"When you look at our product range - compared to anyone else's - then it's very, very large, and we need a large number of people. In fact we need everything. We are a big organisation. Just 10% of the market is no good to us at all. We've got to have the lion's share of what's going on, and we put the resources in in both R and D terms, in back-up, and of course in the sales force to get the orders.

"At the moment our major problem is producing enough to meet the incredible demand, especially for our new products."



Strand Lighting's new HQ at Isleworth, Middlesex. One of the many new facilities is a comprehensively equipped studio/demonstration area.

Director of international research and development is **David Bertenshaw**, and one of his main roles is the management of three research and development groups.

"The team here in Isleworth is under the control of Tony Brown, the team that designs all our theatrical luminaire range is managed by Ian Thompson in Kirkcaldy, and the team that is responsible for the design of the majority of our North American products - particularly our architectural products - is based at Electro Controls in Salt Lake City under the direction of Jody Good," he explained.

"I also have responsibility for the direct management of major sub-contract R and D activities. In addition, I have a liaison function to ensure that as far as possible the company focusses its product development

and designs products that are suitable for an international market directly, or are developed in such a manner that its components provide viable common core components for internationalisation.

"We also try to encourage the various marketing departments throughout the world to think about the suitability of their products for other needs, and other market places. Currently, we are working on dimmer programmes which have common core components, and which are being consciously developed to suit both the European and North American markets.

"It takes time to get agreement between the various parties involved, but no where near as long as if a product had to be developed for one market, and then re-developed again for other markets. So, whilst it may appear to be a burden at day one, it becomes far less of a burden on the company in total."

David Bertenshaw's role is a newly-created position. Strand Lighting urgently needed someone in R and D who could take an international over-view, and who could allocate priorities on an international basis. He reports direct to Peter Blaxtan, divisional managing director of Rank Precision Industries. David re-joined Strand a year ago after having spent 13 years with the company at an earlier period.

I asked research and development manager **Tony Brown** to explain the organisation of his department at Isleworth.

"This department is responsible for developing the control systems and dimmers for TV and theatre products and to a lesser extent architectural lighting products. It is split into four different disciplines of engineering: software, electronic design for both analog and digital electronics, electrical power design for dimming systems, and a drawing office which pulls it all together and coordinates all the parts as a documented system. Because our factory is in Scotland we have a very tight discipline of design quality, and what leaves this department are documentation packages or software packages which have been thoroughly tested.

"We have fairly elaborate facilities for environmental testing of designs and all electronic designs are subjected to heat tests down to 0 °C and up to around 55 °C to make sure they carry on working."

A total of 24 people are involved with research and design at Isleworth and their average age is around 30.

"The ideal person would have spent a fair amount of their time hacking round theatres, using equipment from a fairly young age, and then had some sort of technical background in college or university, particularly in an electronics or scientific discipline that was relevant and could then apply these two parameters for designs for the future," said Tony Brown.



Graeme Pusey, export sales manager, pictured at a recent Middle East exhibition.



Alan Luxford, major systems manager, unpacks for an exhibition in Moscow.

"Since that person rarely exists, we compromise. About half our staff on the product development side have come up through using equipment and have application knowledge, whereas the other half are 'purist' engineers. Together they make a very good fusion. Key individuals tend to become reference centres, and ideas are bounced off the theatrical people.

"It's a marriage mix that works. The people who have worked in theatre by tradition are likely to

cut corners to get the show on the road, whereas the purist engineers are much more interested in academic calculation and product reliability and so on. Sometimes the marriage is not always a happy one, but the quality of the product at the end of the day is what it's all about.

"The theory (and practice) is that a written specification comes from the marketing department and gradually gets developed through its project design period, and hopefully the eventual



David Bertenshaw - director of international research.



Tony Brown - manager of research and development at Isleworth.



Custom engineering manager Steve Dawson (right) with design manager Alan Buchan.



Design engineer Tim Williamson (right) and Roy Morgan discuss a typical custom-engineered project - an 8 preset 384 channel houselight control panel for the Purcell Rooms, part of London's South Bank complex.



Graeme Kerr - a past master at problem solving - keeps the Isleworth sales counter ticking.



Fred Brown (in background), UK service agents supervisor, pictured at work in the engineering service training area.

outcome is better than the original concept. So we should always show some improvement after having spent time on development.

"The whole idea is that you can - with two brains, working from a commercial end and a technical end - get a product which is exactly tailored to the market. It should work that anybody within the company can come up with a good idea for a product and the system will cope with it. Generally, an idea will start collecting champions and once the enthusiasm rolls, it will get turned into a detailed product specification by the marketing department, the R and D department will do a parallel technical specification and estimate how much it will cost to develop.

"The project is then attacked by our accountants who will make a financial justification (or otherwise) and a strategic plan is developed. We will then develop it, review it constantly throughout the design cycle, and finally test it. In fact more than 50 per cent of our development time is spent on testing.

"The new Action board, for example, spent something like nine months in trials and tests before we let it loose on an unsuspecting world. Relatively, Action took a long time to develop, about two years, which is rather long for a product of this nature. It was developed trans-Atlantically; some parts were developed here, and some in the States."

Steve Dawson is custom engineering manager for Strand Lighting, and heads a small department of a dozen people. It operates as a sort of specialist 'jobbing shop', handling all specials and modifications to standard product, allowing the manufacturing units to concentrate on high throughput of catalogued product in the most efficient and cost-effective manner. The unit comprises a small metal fabrication workshop, assembly and test areas, stores, a heat soak room, and engineering offices.

"Custom Engineering will design, cost, engineer, manufacture, assemble and test any requirement from simple socket boxes, special manual desks, houselight control systems to large control desks,

and special dimmer racks," explained Steve Dawson.

"We are also responsible for all Galaxy product. The various panels are configured and tested at Isleworth, including an elevated temperature 'soaking' to ensure reliability. Again, these systems can also include specials such as wooden desks designed to optimise the usually cramped control room space, communications, mimic and pin patch panels, motion control, automatic changeover dual electronic racks, and so on.

"We work closely with sales and project teams, and can liaise directly with clients, suggesting the most viable solution for any task. With immediate on-site access to all R and D facilities, considerable resources can be called upon to solve even the most difficult of requirements."

In the field of commercial lighting, Strand are taking advantage of their theatre-based technology in an endeavour to establish a strong third arm to their overall business. Commercial lighting manager is **David Brooks**, who set up the division in January this year.

"If you look at Strand's business overall, it's really divided into three distinct areas, two of which are entertainment lighting - the stage and theatre lighting in which Strand's name is best known - and the Quartzcolor television and studio lighting. Both of these are quite distinct in their customers and approaches, but the third area, the Environ range for architectural and commercial lighting, is really quite different in its approach to the market, its distribution and means of sales and specification. But the underlying concept and technologies are common.

"What we've decided to do is use the skills and resources Strand have been famous for for many years, take some of the theatrical techniques, and package it all in a way that is appropriate to the commercial lighting market.

"Since January we've had a small nucleus of a team dedicated only to selling and promoting Environ. And whilst this is separate from the rest of the company it's not divorced from it. Obviously we interact amongst ourselves.

"A lot of the core services like finance and administration are common, and of course if people from the entertainment lighting sales side find enquiries in our areas they pass them across and there's a transfer the other way too.

"Buildings like conference centres and hotels are a good example of the business we will be going for - where there's entertainment lighting but also meeting rooms and other facilities where functions require fairly straightforward room lighting and where the emphasis is more on the Environ type of product application.

"What is now coming to the fore in this country is the use of lighting to create different looks and different styles. Americans have been doing this for some time, whereas in Britain the concentration has been on energy saving. If you compare the two, you find that what's happened in the States is that architects and specifiers have said 'we want a tungsten lamp because we know it can be dimmed', whereas here people have taken the light source and said 'we want an energy efficient light source' - and that's been the first criteria.

"As a result, some of our interiors are less attractive than they could be, because people have looked at the installed load and said that's the most efficient way of doing things.

"So our approach to the market is not to tackle it as an energy management system, although, of course, by dimming you are actually achieving energy savings and extending lamp life too in many cases!

"Establishments that depend on hiring out facilities are finding that because they can make a room look like a conference centre or a banqueting suite or whatever, it can be a very attractive proposition because of the economic payback, making space more useable and more rentable.

"We have a small team who are working through commission agents in the UK and we cover the whole of Britain in this way. Generally, there are two types of people who approach us: those who are very clear about the products, and those who only know they want to 'dim the lights'. Therefore an important part of our task is to lead them through the possibilities.



David Brooks, commercial lighting manager, shows the 'works' of the Mini Universal 5 amp dimmer unit, part of the Environ range.

"A lot of people know about rotary wall switches, but the fact that you can dim by pre-setting or programming is taking many people into a new area.

"There is a whole range of areas where Environ can come into its own, from fast food chains and retail outlets through to hotels, offices, and shopping malls. We've just completed an interesting project at the HQ of Norwich Union where we worked with a lighting designer to install a programmable system, and everyone has been very pleased with the result.

"Our aim is to grow this business for Strand, and we will be announcing new products later this year which will take us further forward. Already we're finding the response to the concept has been very encouraging, and our aim is to expand into Germany, France and Italy where the pattern we have developed in the UK will be repeated in those markets."

"My role is to do the 'thinking ahead' for the company," said marketing manager **Camilla Aitchison**, "and to help plan for the future.

"We are organised on product lines, and we think for the future from a product point of view. When we conceive and design a product we then undertake the market research for the various markets.

"We then take a product through research and development, into manufacturing, through training of the sales force to launching it on to the market place, and subsequently demonstrate it to the market.

"So my task is to try and see where we should be a year from now and provide the relevant market reports and strategy documents to the main board to that they can plan for the future and see where the products that we have developed are going to fit.

"The role of our product managers, Susan Dandridge and Mike Cawte, is to take a concept and drive it through the company - from getting the initial agreement from the board through to market research and competitor analysis. They have to chart its progress through research and development and into manufacturing, forecast future sales, train the sales force, and prepare all launch material to go with it such as advertising, literature, advise of suitable exhibitions and promotions, and prepare press packages. They will then review a product six months after launch to see if any modifications are needed. At any one time they will each have around 10 products under their wing.

"Our product managers have had to bear the brunt of a considerable work-load, as the company has become more and more international. Instead of providing products for one region, they now have to provide products that adapt to any region in the world, and this has to be done by product managers liaising from one international operation to another."

Strand Facts

Strand Lighting employs 750 worldwide
- including 300 in the UK

A division of Rank Precision Industries,
it accounts for one-third of the division's
annual turnover

Strand Lighting accounts for 2% of the
Rank Organisation's annual turnover

Oliver Hartree, Strand Lighting's managing director since the beginning of this year, joined the company in January 1984 to bring modern industrial management to the Kirkcaldy factory where the team "responded magnificently" to the process.

His career in engineering management and design began when he worked as a metallurgist at Bristol Aero Engines after leaving college. He followed this with six years in research. He held several increasingly important management roles in different areas of the industry, and prior to joining Strand he was the managing director of a switchgear company which he'd turned from loss to profit and combined it with another operation in the same field.

While Marvin Altman was president of Strand Lighting, the very fact that he was American made people in the UK recognise that the company was a truly international operation, and not just a British company doing rather well abroad. I asked Oliver Hartree if he would be making any deliberate moves to present a similar image and to keep a strong bond between the UK and the United States in particular.

"Strand Lighting is a very international company - we have subsidiaries in seven countries around the world. With marketing input from all these places we gain great strength from knowledge of a very wide perspective of application.

"The opportunity to market American product in Europe and UK product in America does give us two strong legs. Some have felt that there has been undue influence from over the water, but I think perhaps this was us also getting enthusiastic over having a wide range of equipment to offer.

"In Isleworth we remain very much alert as to the needs of the UK and European market, and we will not take our eye off that ball. We will add to our offerings anything from America which may be of interest to lighting designers over here.

"The image of the company will not change significantly in the future. The links with our US company will be just as strong as they are currently; we still have a clear policy to design and market products attuned to the European market from the UK. Perhaps I am biased, but I see our Kirkcaldy factory as the best in the business!"

Strand's 'Spectacular' promotion at Bristol last September was one of the industry's highlights of the year. How important was that event to the company and what reaction have you received?

"It was a fine show, and of course its success was what we worked for. It exceeded our expectations. It has also taught us where a few weak points are. We strive to serve the customer and to get rid of the old arrogant image. And we do keep our eyes open to correct faults and internally apply fairly severe criticism to ourselves. It can get quite hot in here sometimes!

"The market impact which Bristol achieved was to show again the very broad front upon which we make progress, and it gave us very valuable pointers for the future. As the months go by we will all see its effect."



Oliver Hartree, managing director of Strand Lighting.

For a company of Strand Lighting's size, it was interesting to see them 'buy-in' expertise from outside recently in the shape of the P.A.L.S precision automated lighting system, and I questioned whether they would take in other products in this way in the future, and how they saw the shape of future research and development.

"I see automated luminaires fully controlled by memory systems taking an increasingly significant place in the market, whether it is for labour saving on rigging a studio, changing settings at scene changes, or for spectacular effects on stage and in touring shows. The needs are different in different applications, but increasing sophistication in controls is coming with servo-managed equipment.

"In looking down that road one must avoid over emphasising it; the needs of the rep. and the amateur stage, schools and colleges, as well as the professional sector are our concern, and there are benefits for all in the new products we are developing.

"I have said before that our range is wide. From time to time we will come across ideas, products, and accessories which we will 'buy-in' to serve the market - it would be a brave outfit that thought it could be best on all fronts without taking some not-invented-here elements into its shop window. Mixing ideas from inside and outside the company does help us to avoid complacency."

How does Strand Lighting fit in with all the other facets of the Rank Organisation's activities - is it a reliable and regular profit maker? And in the volatile world of entertainment, how is show **business**?

"The Rank Organisation has given us very firm support, particularly through the recent period of reorganisation. Whatever extra resources we need, we have to compete for - so we need to have a good case. Rank have demonstrated their commitment to the entertainment industry in many directions, and Strand Lighting is just one of them.

"In recent years we have both broadened our manufacturing and engineering base and expanded our commercial distribution network. We are not hungry in the predatory sense, but opportunities arise from time to time and we would always consider if there would be benefit in a particular move.

"As things are we manage to keep our end up, but one thing is certainly true in Strand Lighting - you never know what may be around the next corner.

"So, Strand Watchers - keep watching!"

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years on

Basildon's New Towngate Theatre

Francis Reid

The Arts Council of Great Britain chose the press preview of Basildon's **New Towngate Theatre** (financed by Basildon Council at a cost of £6.5 million) as the occasion to reveal their 1988/89 grant to the Regional Arts Associations. Eastern Arts (whose region includes Basildon) received the largest percentage increase of 14.6%, Northern Arts the smallest at 0.6%, with Greater London receiving a decrease of 1.8%. This substantial redistribution of national arts resources is significant not only for its move towards equitable sharing on a population basis, but for the means by which it has been achieved.

There were none of the usual displays of hysterical self interest: a working group from the regions discussed the cutting of the regional cake and those who had been getting disproportionately larger slices on a purely historical basis agreed to yield. As the basic justification for arts expenditure is the propagation of a cultured civilisation, this corporate rationalism is a welcome display of seemly behaviour by our arts bureaucrats. The cake, of course, is acknowledged to be too small by all except the Government. But the Government is unlikely to change its ways until instructed to do so by the electorate. And the electorate are unlikely to support more arts funding until they are better informed about costs, and have a clearer picture of what's in it for them.

In Basildon, the electorate can see clearly what they have gained. Their new theatre, with council chambers and county library under construction as an attached limb, gives focus to a town centre strong on the logics of town planning but hitherto bypassed by architectural statements other than those of cost effective function. This is not to say that the New Towngate Theatre is not both functional and cost-effective. It is certainly both. But it is also a visual statement offering considerable aesthetic pleasure. Particularly on the inside. It is too early to judge the outside. At the moment its come hither seems a touch clinical; but this is something that will be speedily resolved by an admin team who are particularly dedicated to outreach philosophies. At the risk of the architects never again speaking to me, I would suggest than an electronic newscaster high up on the fly tower might be not only acceptable but appropriate. I strongly suspect that Frank Matcham would have embraced this technology if it had been at his disposal.

RHWL (pity the initials of Renton Howard Wood Levin do not sound an acronym), the architects of Basildon's new theatre, are rapidly becoming the today equivalent of Frank Matcham's practice. They have certainly cornered the refurbishing market and get an above average share of any new theatres. They are now sufficiently experienced to be able to do their own theatre consultancy, although technical specialists are called in to specify the stage equipment and supervise its installation and commissioning.

Basildon looks to Bury St Edmunds and Northampton for core elements in the design of the New Towngate. From 1819 Bury come the proportions of the auditorium and the form of its curving tiers. From 1983 Derngate comes the deployment of hovercraft technology to restore the eighteenth century concept (but in terms of today's

budgets and schedules) of a theatre as a flexible multiform space suitable for both assembly and performance.

The main house seats 530-560 according to format. In the Georgian manner, there are three shallow tiers and a stalls area whose raked seating can be cleared for transformation to a flat floor which continues the stage level. The seating blocks are moved on air castors and shunted via elevators to basement storage areas. The stage is interfaced to the auditorium by a pair of mobile towers (in the triple tier format of the auditorium) which can be moved on air castors to define a proscenium or leave the stage area open. The centre tier level is carried around the walls of the stage tower and can be available for audience as an option in open stage mode. The flytower can be closed off (a la Derngate) by a flown ceiling to aid concert acoustics and visual intimacy. There are, of

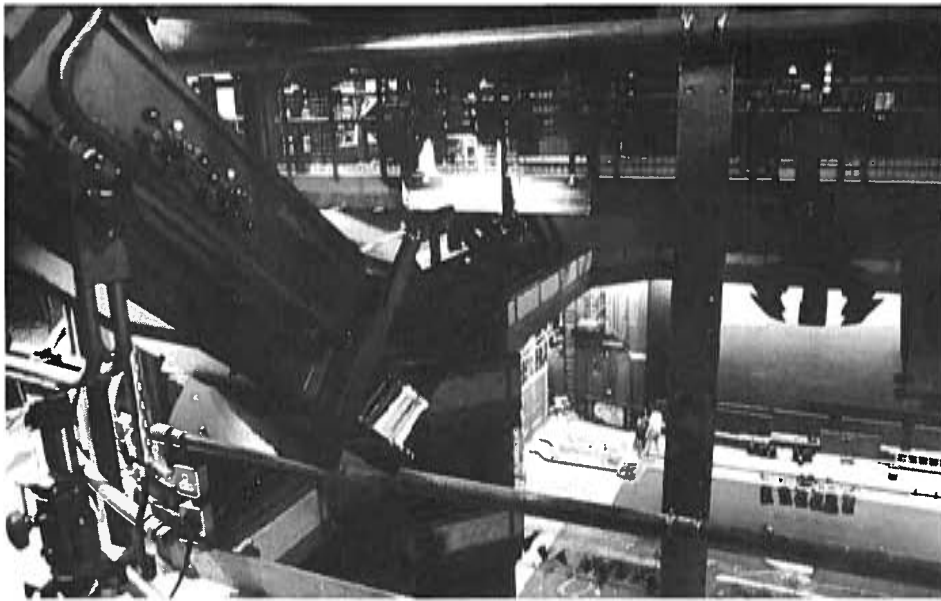
course, the now traditional elevator options to provide apron or orchestra pit (up to 40 musicians) when required.

The **Studio Theatre** is a potentially flexible space, although retractable seating for 200 imposes an endstage format as normal. Both theatres share the foyers and are linked backstage, with sound isolating lobbies allowing simultaneous operation. The backstage juxtaposition seems to have been particularly well planned to allow effective co-ordination of both stages. The get-in allows two trucks to unload simultaneously.

The main stage is 13.5m in depth and 19.2m in width, containing a sprung dance floor area of 12m x 12m. A maximum opening of 13.5m can be narrowed to 9.5m by pivoting the proscenium towers. The grid is at 18.6m, with a flying height of 18m for the 38 single purchase flying lines at 200mm centres.



The main auditorium, New Towngate Theatre, Basildon.



Follow spot position at the New Towngate Theatre.

Lighting

Bridges provide good lighting angles from the auditorium ceiling. Side lighting from lower angles is always difficult to integrate into auditoria where the audience tiers extend all around the walls to the proscenium. However, although Basildon has no permanent provision, there is what would appear to be a particularly elegant solution for tidy temporary rigging. Clever use of short vertical 2 inch o.d. pipe within the decorative scheme allows bars to be positioned virtually anywhere on the circle fronts and fed from circuit outlets concealed under hinging sections of the velour covered leaners. Backstage, the fly level circuits intended for

lighting bars are paralleled across stage, allowing bars to be plugged from either end; while the circuits designated for side lighting are paralleled between fly galleries and stage floor. The rig is Strand, mostly Cantata, and the control a 180 channel Midilite from Eurolight. (The studio has another Eurolight memory (Microlite II) with 60 channels). The working light system, offering presettable states, is by Northern Light, who seem to have become the dominant force in this specialised area.

Sound

Light, sound and film projection are well housed in a control suite on the middle tier. The sound installation, designed by Eric

Pressley and supplied by Audix Limited, has a DDA B Series mixing desk, and reinforcement is based on one fixed loudspeaker cluster over proscenium centre, with portable speakers available for positioning as required. Six sound boxes are positioned on stage, four on the galleries and four on the bridges. Each box has twelve tie lines to the control room (duplicated on a multipin) and four tie lines to the communications rack. There are two loudspeaker points, two video points and cue light.

Front of house areas are roomy, airy and appropriate for a theatre ideally situated to become an all day social focus for the community. The whole theatre is on a human scale and all seats have good contact with the stage. The use of scene painter's sponge techniques for discreet texturing of the paintwork is particularly welcome. In comfort terms, Basildon becomes the touring flagship of the Eastern Region.

But perhaps not for long. There is a lot of action afoot. Ipswich hope to restore the Gaumont and give it a new stage house capable of taking the biggest shows, Norwich are planning a refurbished Royal, moves are afoot to provide Cambridge with a theatre which will take the shows that have outgrown the Arts Theatre's restricted stage, and Luton's published estimates earmark 8 million for expenditure on building a new theatre in 1988-89 and subsequent years.

And that is just a few of the bigger ones: on a smaller scale, the restored Lowestoft Marina Theatre will be opening soon and the National Trust have an architect working towards a scheme to return Bury St Edmunds Royal to its full 1819 glory.

It was indeed appropriate that the secretary-general of the Arts Council should

Northern Light

Towngate Theatre, Basildon

Northern Light supplied the complete Working Light Control System . . . based upon the new programmable **System 2000**, as launched recently at the A.B.T.T. exhibition

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Theatre Engineers

choose the opening of Basildon's New Towngate as the venue to announce a new deal for the regions in general, and the Eastern Region in particular.

Techplan in Towngate

However great the experience of the architectural team designing a performing arts building, specialist theatre equipment consultants are necessary to handle the rigging, lighting, audio, communication and similar technical installations. And this is particularly true when the building is designed to function in a number of forms: theatre, flat-floor, concert, promenade, etc., and it was this work which Techplan were invited to undertake for the Towngate Theatre.

To facilitate the movement of the seating wagons over the inevitable gaps between the elevators and the fixed floor levels, air sled technology was chosen and this was applied also to the proscenium tower motion. A high pressure system, enabling a single hose to be connected to each moving element would have been preferred but as this technology was not demonstrable it was considered prudent to use plug-in blower units to achieve the necessary low-pressure high-volume air supply. In the event it was found that the blowers and sleds were more efficient than anticipated, with lifting capacity in hand.

"There was neither reason nor money to install other than single-purchase counterweights for lighting and scenery," explained Techplan's Richard Brett. "The diverters for the 38 sets are overhead, allowing clear access to the full steel-channel grid. The two ceiling pieces which close off the flytower void when audiences are on the stage or public galleries are each counterbalanced by four linked sets and are stored vertically. When lowered to working height, these panels are rotated to horizontal by hand winches to align with the continuation of the gallery front in the stage area. Such architectural features are an important part of this type of adaptable theatre but do restrict the scenic use of the stage slightly."

The need to accommodate the public on stage and on the galleries also necessitated additional exits (and bright illuminated signs!) which would not normally be required backstage. This also raised the working galleries, so a step was introduced in the fly gallery to maintain the sightlines to the stage. The working light control is a solid-state industrial programmer and was set up to a logic table prepared by Techplan. To simplify operations in this touring venue all the production lighting bars were designed as 3m pre-wired lengths and can be rigged on any bar.

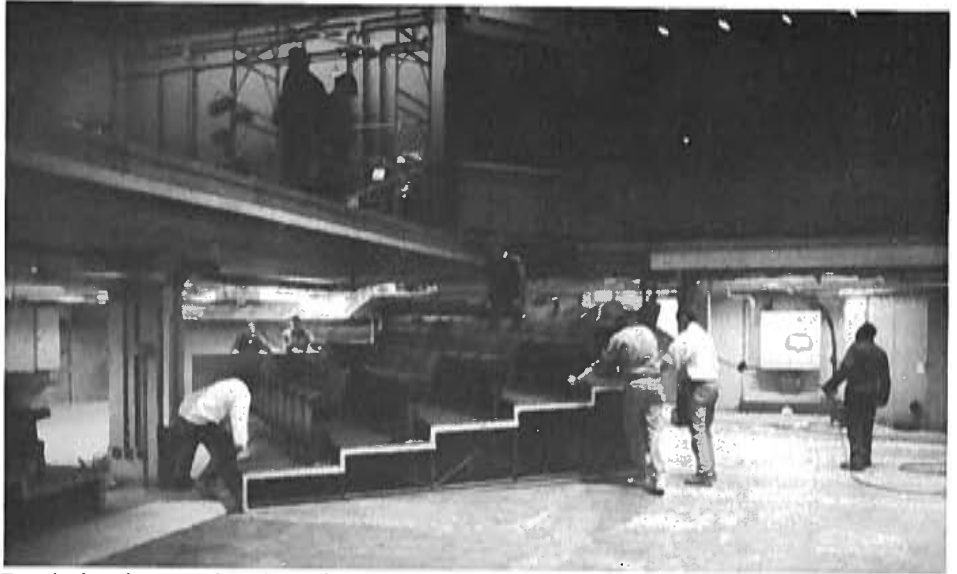
While the semi-circular and intimate form of the auditorium limited the size of the control room, Techplan were able to include an alternative sound mixing position in the rear stalls and to incorporate extensive auditorium lighting positions (for flat floor as well as theatre performances) both on the ceiling bridges and on the balcony fronts. The late introduction of film projection was achieved by shoe-horning a small 35mm projector and a separate tower for vertical spools into the control room. Because of this the room will be somewhat cramped and may need further

modifications once any operational problems have been identified.

Flexibility was the keyword in the audio systems design. While a generous complement of equipment has been provided, an extensive installation of radial wiring and connection facilities was designed to create the necessary infrastructure to accommodate almost any audio requirement. The main loudspeaker installation is in the form of a cluster of horns and mid-frequency units flown over the front of the stage by an electric hoist. This array includes units pointing towards the stage which may be switched on when audiences

are in this area. The loudspeakers are fully equalised to match the room acoustics and additional portable loudspeakers provide for foldback and effects use.

"Our biggest concern on this project was not having the time to commission all the equipment finally before the theatre opened, as the equipment sub-contractors' programmes had been compressed due to their being (as always) amongst the finishing trades. We shall now watch with interest and learn further from the way the Towngate Theatre backstage team use these installations," Techplan's Richard Brett told L+SI.



Transferring air-castored seating to basement for storage.

Specialist Engineering at the Towngate

The £750,000 contract for specialist stage equipment at the Towngate was won by **P. E. Kemp Engineers Limited**, a company well known for specialist engineering back-up throughout many branches of the entertainment business.

"Stage equipment at the Towngate follows fairly straightforward and well-proven designs coupled with the introduction of some novel elements which enable the theatre to cater for a wide range of events including concert format, promenade, flat floor, and theatre-in-the-round," director Peter Kemp told L+SI.

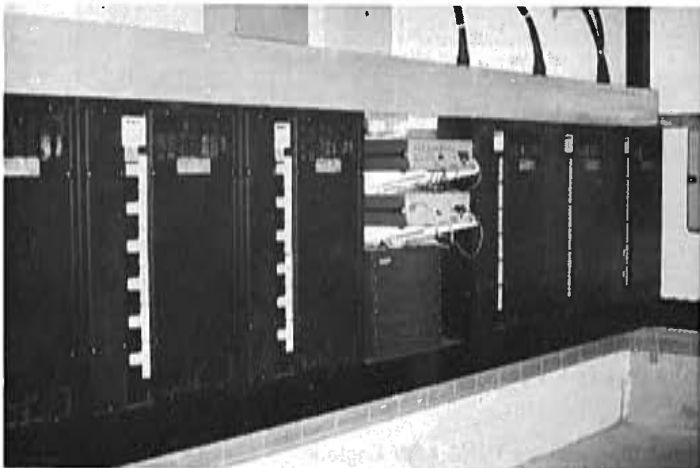
The company installed the flying system, orchestra and auditorium lifts, the safety curtain and wing panels, lighting grid, air sled auditorium seating units and side towers, doors to stage, scene dock and studio, the flown ceiling panels, and electric hoists to the auditorium ceiling. In addition, various work was also carried out in the Studio, including telescopic audience seating units. Also installed was a film screen and mobile proscenium together with hand operated winch and hemp sets. "An electrically operated festoon curtain gives this space a mini theatre application," said Peter Kemp. "We were also responsible for a large area of the timber cladding and sup-

plied all the stage drapes."

The major feature at the Towngate Theatre, however, remains the air sled seating units and auditorium side towers. "These have proved easy to move and due to the displacement of the individual pads are able to be moved across large gaps when in the storage positions below stage," explained Peter Kemp.

"Due to the shape of the auditorium towers, each weighed 3½ tons, and the displacement of weight was very uneven over the base area. Although we expected some problems with this design, by careful flow balancing, movement was quite easy and stable considering their height is nearly 9m with a base dimension of 2m x 3m.

"Orchestra and auditorium lifts are each lifted by six screws and are arranged so that the orchestra lift is the master unit, and provided with a full set of positional limits. The auditorium lift has its own power transmission system but has no limits, and when required to move is linked by locking the two drives together via an electro-magnetic clutch. Soft start is incorporated, as is a full safety edge system, a roller fire curtain to partition the lift underneath the assemblies, and an efficient smoke seal arrangement operating at two levels.



Dimmer room with over 200 channels of Wallrack controlled by Eurolight demultiplexers.



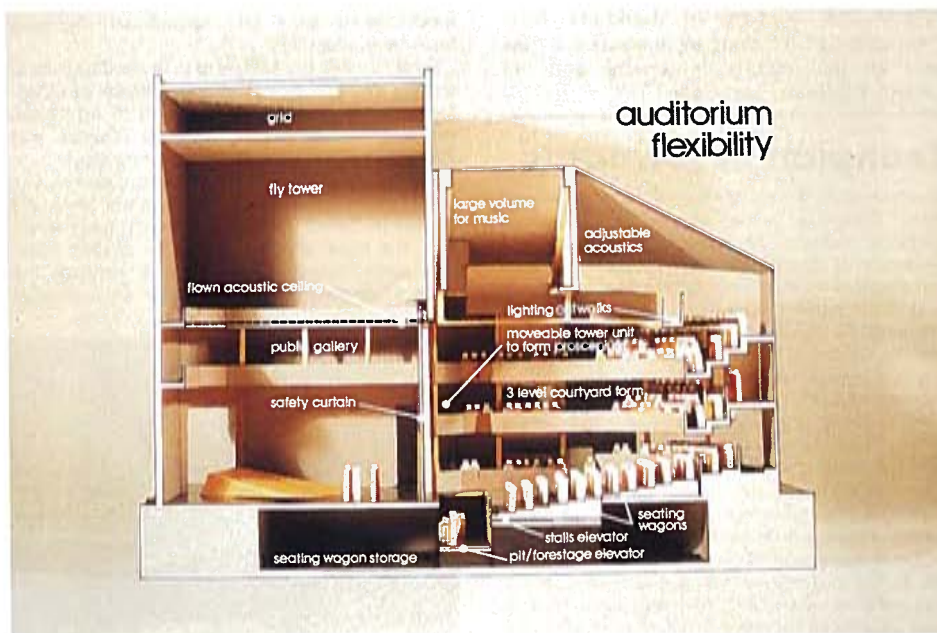
The Microlite Three memory lighting board - a new approach to lighting control, using 16 bit computer technology.

The safety curtain is a normal counterweighted unit weighing 6½ tons and clad in steel sheet on both sides. The auditorium side is formed into dished panels, giving a very pleasing appearance. The curtain works in conjunction with a sliding panel on each side of the stage which can be retracted into the wings to open the proscenium to the auditorium width. These side panels are interlocked with the curtain and carry the lower portion of the main curtain guides. Two hinged sound/fire doors weighing 2 tons each and two raise and lower doors are provided and these divide the areas between stage, studio and scene dock.

"In the studio we installed a raise and lower door using a hydraulic motor powered hoist which enables the door to free fall under control without use of counterweighting or buffer.

"Rather more testing was required on this project than we had previously experienced but we would expect this to follow in further projects with the more stringent health and safety rules that now apply. However, all of our equipment passed these tests and all credit is due to our director in charge of this project Michael Kemp and to his team on site.

Sub-contractors were: Mick Tomlin Limited, Bert Richman Limited, Hovair Limited and Audience Systems Limited.



Annotated model, showing auditorium flexibility.

Credits

Architects: Renton Howard Wood Levin Partnership (RHWL)
 Project Architect: Murray Armes
 Architects: Gary Reading, Felix Sussman
 Assistants: Nick Farnell, Moriam Alafia
 Theatre Planning: Anthony Williams
 Colour Consultant: Cläre Ferraby
 Quantity Surveyors: Widell & Trollope
 Structural & Services Engineers: Ove Arup & Partners
 Theatre Equipment: Technical Planning Ltd
 Management Contractor: Wimpey Construction Management Ltd

Theatre Equipment Specialist Contractors

Stage Equipment: P E Kemp Engineers Ltd
 Sound & Communications: Audix Ltd
 Stage Lighting Control: Eurolight Ltd
 Stage Lighting Luminaires: Strand Lighting
 Working Light Control: Northern Light

Sound Equipment:

(courtesy Audix Limited)

Main Theatre Mixing Desk: DDA mixing desk 'D' series with 'theatre' inputs and 'matrix' outputs. 32 into 8 into 2 frame fitted, 24 into 8 into 2.

Studio Theatre Mixing Desk: DDA mixing desk 'S' series. 16 into 4 into 2 frame fitted 8/4. Transformer balanced line and microphone inputs.

Control Room Monitoring Equipment: Tannoy DTM-8 monitor speakers, Beyer DT100 headphones.

Portable Equipment Rack: 21 U Audix rack.

Main Theatre - Control Room Rack: 39 U Audix rack with rear hinged lockable door.

Studio Theatre - Control Room Rack: 24 U Audix rack.

Amplifier Rack: RC39 Audix rack, RC24 Audix rack.

Loudspeaker Cluster: Housing the following loudspeaker elements: 6 x Altec Lansing MR11594A Mantaray Horns fitted with 6 x Altec Lansing 906-8a HF Drivers, 3 x Altec Lansing 8127 cabinet fitted with 3 x Altec Lansing 3127 bass loudspeakers.

Portable Loudspeakers.

Communications Rack: 39 U Audix rack, Ring Intercom, Sound Boxes.

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Eurolight extends best wishes for the future success of the new Towngate Theatre, Basildon.

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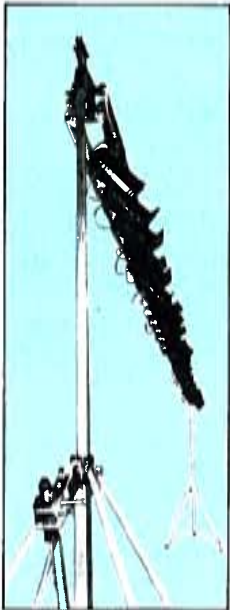
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THIS MONTH'S FEATURED PRODUCTS



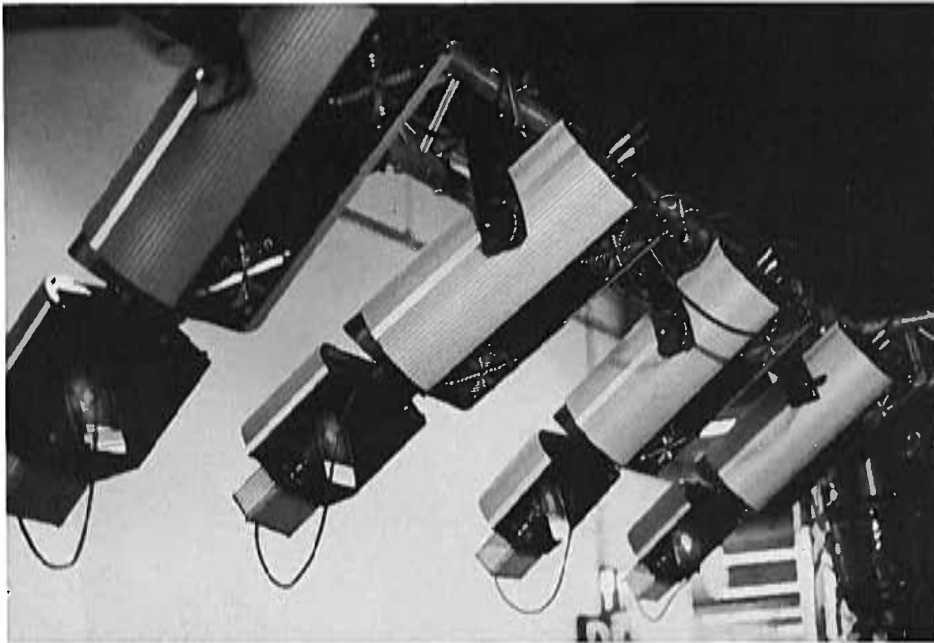
▲ **Celco Baby** The innovative and versatile Celco Baby is an effects board designed for Television, Rock and Discotheque use. It incorporates many important Celco features to offer the designer many creative possibilities, but at a price that makes it ideal for those looking for big performance within a more modest budget.

▲ **The Powerdrive 'Truss Tower'** The Powerdrive 'Truss Tower' represents a new approach to rigging today's smaller scale sets. Robustly manufactured from steel tube it's the ideal way to lift trusses up to 30' long up to 5.5m high. It incorporates a revolutionary fail-safe device to prevent the truss falling in case of cable failure during or after rigging. And it's economically priced!



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 'The Stage and Effects Lighting Centre'
 168 Chiltern Drive, Surbiton, Surrey KT5 BLS, England
 Tel: 01-390 0051/01-390 4841 Fax: 01-390 4938 Telex: 892337

EQUIPMENT *News*



Clay Paky's new Golden Scans line up on the Pulsar stand at the Frankfurt Music Fair.

Golden Scan

Launched at the Frankfurt Music Fair, Clay Paky's new Golden Scan has already sold hundreds of units worldwide, according to Pulsar's Ken Sewell, whose company markets the product exclusively in the UK and France.

It is also a joint project in another way. Pulsar supply the electronics for the Golden Scan, and this new product is an example of Anglo-Italian co-operation at its best. "It's caught on all over the world," said Ken Sewell, "and it's a fine example of British electronics backing up Italian flair in design and mechanics."

Golden Scan is a powerful intelligent spotlight, and uses a 575W HMI lamp to produce a beam that cuts straight through in an entertainment environment such as a disco or rock show. Each projector contains its own high-speed micro-computer, which controls the following functions: pan, tilt, iris, colour, gobo and blackout. In addition it is fitted with a strobe effect.

Each projector can be independently controlled, with a two wire standard cable using the RS232 protocol. In addition, each projector has a standard 8 pin DIN socket so that the effects can be controlled directly from any Pulsar desk or any

other controller which works on the 0 - 10 volt standard. This dual input feature makes the projector directly compatible with most lighting boards currently in use throughout the world, as well as allowing the spotlight to be directly connected to any personal computer system with an ordinary serial output port.

Being independently controllable, the projector lends itself to being pre-programmed using a controller with real-level memories. The ultimate controller is OSKA, which because of its 256 channel output capacity, can control up to 42 Golden Scan units. In particular OSKA can be used to integrate intelligent spotlights into a lightshow including many other types of lighting. One operator can control the whole show, giving lower operational costs and better synchronisation.

While OSKA is a first in control technology, Golden Scan is a first in motorised lighting, say Pulsar. For the first time an intelligent spotlight which can be fully-integrated into an existing control system, but with the flexibility to interface with the computer-based controllers of the future.

For full details contact Pulsar Light of Cambridge Limited, Henley Road, Cambridge CB1 3EA, England telephone (0223) 66798.



MultiVerb from ART - up to four simultaneous effects.

MultiVerb from ART

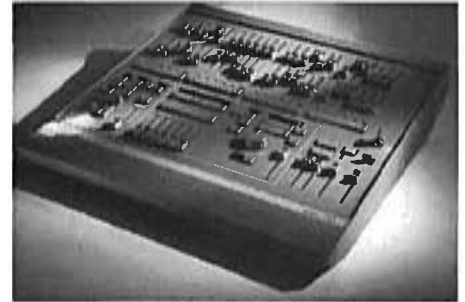
Up to four simultaneous effects are available from one single rack with Applied Research and Technology's new Multiverb.

Reverberation, arpeggio effects, reverse gates, pitch shift, doubling, imaged doubling, digital delay, chorusing and EQ multi-effects can all be programmed into the units' 200 memory locations, or alternatively selected from Multiverb's 100 on-board presets and subsequently stacked. These multi-effects may then be random accessed at a later date, in groups of four if required.

As part of ART's Proverb family of digital signal

processors, Multiverb incorporates several standard Proverb features such as battery back-up for full memory protection, remote footswitch jack with preset increment, a level selector, 16 bit digital processing, and full MIDI compatibility. A random access keypad and 32 character LCD display for simple operation are further features of the Multiverb.

Possibly the most unique aspect of Multiverb is the inclusion of pitch transposition as standard, to set new higher standards in budget multi-FX racks. For further information contact Applied Research & Technology, 215 Tremont Street, NY 14608 USA telephone (716) 436 2720.



The 24 channel Sirius.

Sirius from Zero 88

Sirius is Zero 88's latest and most ambitious assault upon the ever growing small memory lighting board market. A 24 channel desk, it sports an impressive array of features set in a simple to use and attractive grey-liveried console. Like all previous Zero 88 offerings, the desk retains the two manual preset facilities which are always available whilst a Keyswitch allows access to the memory and programming functions.

There are up to 99 programmable level memories which can be used manually through 6 sub-masters or sequentially with timed fade up and down times through the 'go' button; a sequential playback usually found only on more expensive computer boards.

A separate chaser allows up to 9 chases to be programmed with level - very useful these days with so many colour change systems about. Chases may be replayed simultaneously at different speeds or even used in the sequential playback. Desks may also be linked together.

All these features make Sirius an ideal candidate for hire, conference, small band, school and studio theatre use. It is a very good all-rounder at a very realistic price.

For full details contact Zero 88 Lighting Limited, Hart Road, St. Albans, Herts AL1 1NA telephone (0727) 33271.

New from Cameron

Cameron Video Systems launched three new products at Audio Visual 88, notably a dual channel option for the successful MF2000 Image Processor, which offers a wide range of digital image processing effects within an exceptionally cost-effective package. With the new dual channel option, the user can zoom on both channels, giving two compressed images on screen.

One of the key design features of the MF2000 is its memory system. In addition to an internal memory capability, the unit uses interchangeable RAM memory cards, capable of storing up to 200 individual events or sequences each. Thus the MF-2000's memory is as extensive as the number of cards the operator wishes to use.

Accepting both composite and component inputs and outputs, and asynchronous video input, the MF2000 also offers A/B input selection and background channel, and a built-in mixing circuit, facilities usually only available on products in a considerably higher price bracket. This DVE also operates on an exceptionally wide bandwidth in the composite mode (4.5MHz - 3dB) and full 5.5MHz in the component mode, offering more precise colour definition.

Also on the launch schedule was the IV-590 Binary Display, a binary display measurement device, and a new Component Transcoder, the CT600, which offers the same facilities as the current CT500 but boasts X-VHS and YC Input/outputs.

For further information contact Chris Cameron, Cameron Video Systems, Station House, 4-8 High Street, West Drayton, Middx UB7 7DJ telephone (0895) 446661.

Multiple-Wire Identifier

'ScotchCode' WI-116 Multiple-Wire Identifier leaves the old fashioned methods of ringing out cable standing, say 3M. WI-116 allows one man to identify up to 16 wires at a time in any size cable including signal, control and power, multi-pair telecommunications, coaxial, alarm and lighting, up to a distance of 1 mile or more. It is ideal for the installation, maintenance and repair of electrical wiring systems.

A versatile electronic device, it is quick, easy and safe to use. You simply allocate numbers to each conductor to be identified, and hook them up to the corresponding numbered leads. You then test each conductor with WI-116 detector which accurately indicates the allocated numbers 1 to 16 on a LED display. If there is a fault on the line the WI-116 will indicate a short or open circuit. It can also be used to test for circuit continuity.

The WI-116 Kit comes with a free 'ScotchCode' Wire Marker Tape Dispenser as an introductory offer, and is available from selected Specialist Distributors nationwide.

EMO Rack Light

The Rack Light first shown by EMO Systems Ltd at last year's APRS Exhibition is now in full production and initial orders indicate that this deceptively simple idea is going to be a real winner, say the company.

Built in a 1U case, the light is shed downwards to illuminate the front panels of equipment housed below in the rack without diffusing into the surrounding area. The case slides in and out on runners and works on the fridge door principle - the light goes out as the case clicks shut, and even if the rack tips forward the frame will stay closed.

The EMO Rack Light, which is mains powered, incorporates 12v festoon lamps which are readily available throughout the world, and two levels of illumination can be selected.

For further information contact E.M.O. Systems Ltd, Durham Road, Ushaw Moor, Durham City DH7 7LF telephone 091-373 0787.



The Rack Light from EMO Systems.

Custom Keys

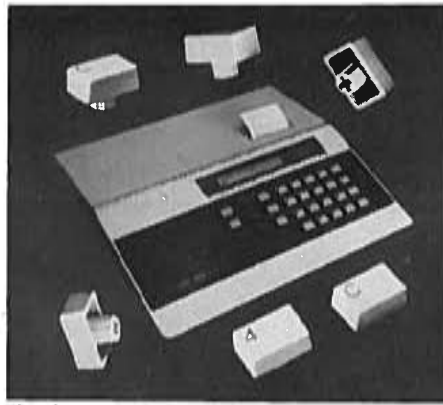
Sifam Ltd, the Torquay-based meter and panel accessories company, has extended its custom-moulding service to include the design and manufacture of instrument pushbuttons - printed with any variety or combination of letters, numbers or symbols.

The facility is expected to be of interest to manufacturers of specialised keypads where non-standard key-cap style, shape or size and variations in the printed designations are required. It is not aimed at the very high-volume market for two-shot mouldings such as for typewriters, computers and telephone keypads.

Sifam has developed techniques for moulding control knobs and pushbuttons of various types with a finely textured surface finish. The surface is such that it will accept almost any form of printing, giving a virtually indestructible image of high fidelity.

Following customer demand the same capability can now be used for instrument keypads. Variations in the printing are readily accommodated without the need for special tooling, allowing small or large quantities to be made at moderate cost.

For full details contact Sifam Limited, Woodland Road, Torquay TQ2 7AY telephone (0803) 63822.



This keypad, designed by Polar Instruments of Guernsey for their new B3T Micro Board Tester incorporates key-caps specially manufactured by Sifam of Torquay.

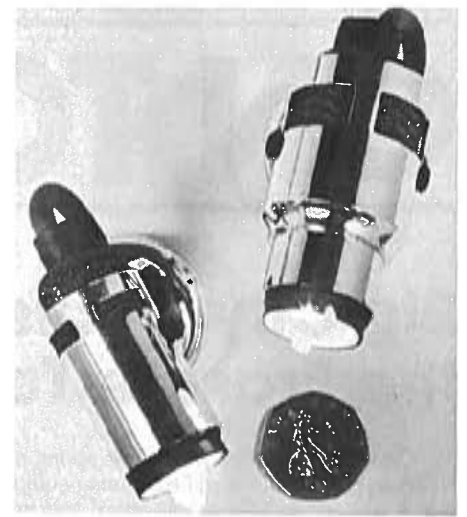
New McKenzie Speakers

UK loudspeakers manufacturer McKenzie Acoustics has added to its Professional Series a pair of 8" loudspeakers that incorporate a pressed steel frame.

The 8-50 GP and C8-100GP, 50 and 100 watts respectively, have been designed to fulfil the need for a speaker that will satisfy the requirements of mid range applications, in compact sound reinforcement systems.

Precision engineered chassis, high quality connectors, resin treated cone surrounds for maximum fatigue resistance and voice coils that are wound on ventilated high temperature Kapton to handle and dissipate heat generated, are some of the plusses of the computer designed and tested McKenzie Professional Series.

For further information contact McKenzie Acoustics, 286 Bradford Road, Batley, W Yorks WF17 5PW telephone (0924) 477102.



The micro remote and mini remote from Christopher Wray's new Electra range.

Christopher Wray's Electra

Christopher Wray's new Electra low voltage halogen lights project a thin beam of cool, white light from a discreet source while at the same time giving the user energy savings of up to 25% over conventional lighting.

The range comprises eight different mini spot lights and one micro spot. The three flush fitting lights are ideal for replacing normal recessed eyeball downlighters. There are three remote spots, which come detached from their transformers; and three incorporated spots, which have the transformer incorporated into the body of the light.

For full details contact Christopher Wray Lighting, 600 Kings Road, London SW6 2DX telephone 01 736 8434.

EQUIPMENT NEWS continued on page 48

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ON TOUR

Keith Dale

Big City Lights and the Erasure Tour

Big City Lights were formed in the Spring of 1987 and have since supplied lighting equipment and services for many varied and exciting projects.

On the concert lighting front some of their most satisfying achievements have included providing the lighting for the Placido Domingo gala at the Wembley Arena, for Johnny Cash and Kris Kristofferson at the Peterborough County Music Festival and for the last R.E.M. tour of Europe. They also supplied the lighting for the Red Army Song and Dance Ensemble performances at the Royal Albert Hall.

Big City Lights make it their policy to supply genuinely creative lighting at 'affordable prices' to rising stars such as The Men they Couldn't Hang, ACT, Vow Wow and Skingames. Recently they took up the challenge to imaginatively light a dank and dilapidated warehouse for the shooting of a new alternative culture TV show under the working title 'Fresh from London'.

An elaborate system was required when they organised the lighting for the current Robert Plant tour. They used their own lighting system for the relatively straightforward warm-up dates in January and February but needed to sub-hire a complete system from Supermick for Robert's major tour which started in March. There were some frantic moments when top American lighting designer Kenny Mednick of Nocturne Lighting was suddenly asked to come in to re-design the show prior to the production going to the United States. Kenny had them trying to rig the resultant stadium sized system in modest venues like the Astoria and the Town and Country Club!

Equally frantic but rather more exotic action took place when, in early March, they flew two complete lighting systems to Zimbabwe for the U.N.I.C.E.F. Children on the Front Line Festival where the star studded international bill included the likes of Harry Belafonte, Maxi Priest, Johnny Clegg and the Real Sounds.

The future prospects for Big City Lights look equally sunny - with the tour of Chart favourites Erasure currently on the road, and the Capital Music Festival in all of its various locations including the Alexandra Palace, the Hammersmith Odeon and the Royal Festival Hall.

Erasure's set and lighting rig was designed by the creative team of Robb and Vanda Mackenzie and Erasure's crew are Ian Calder, Brian Richardson and Firmin Moriarty. Robb Mackenzie is well known for his exciting work with bands such as OMD, Sad Cafe and The Stranglers and together with Kenny Sutherland conceived the initial design and the distinctive circular projection screen for the Robert Plant rig. Robb first entered the world of concert lighting around ten years ago when he was employed as a trainee by veteran hire company Entec. He remained at Entec developing his lighting skills for several years before leaving to become a freelance designer. Robb understandably retains links with the then management of Entec, now owners of Big City Lights, John Denby and Jan Goodwin as well as Big City Lights manager Beverley Drew who also shared the experience of working at Entec.

I managed to catch the Erasure show at the Brighton Conference Centre and Ian Calder explained the unique lighting system. "The



Ian Calder.

computer basically runs the whole show, it's got 15 tracks of which 10 tracks run the music, snare, various effects and tells the synthesiser what sounds to make and when. Four tracks run the lights - 2 of which control the slower reacting lamps and 2 which control the quicker ones like ray lamps. Then there is one track which controls the slide machine. The light box which we had built converts midi voltages, which are coming from the keyboard and computer, into useful lighting voltages (0-10 volts) and that gives us 30 channels of 0-10 volts which goes in the line to the dimmer rack, then there's a line from the dimmer to the auxiliary input of the Celco Series 2 Sixty control board which we use to control 20 channels with time fades on and 10 channels which are on/off.

"It took Vince Clark and I ten days to get everything right using Robb and Vanda's design. Vince played the backing rhythm for the songs and we just applied the lights. He picks out certain bits of music he wants lights for - he prefers one colour at a time and he doesn't like big washes of colour or mixtures. After eight days, once we had learnt the limitations and good points of the system, we went back and re-did the first four songs. There are five or six songs with slides which we have to keep quite dark as the projectors aren't too bright.

"I add extra light manually for Vince and the backing singers. I have manual override in-case something goes wrong like on one occasion his keyboard midi system failed because someone hadn't connected a lead which stopped five of the channels working. I then had to try to fill it in and, as every lamp is going exactly on the beat to the music it is really difficult. By the time the sound travels to the desk and you press the button it looks out of time so then you have to try to anticipate it which is very hard!

"I took over The Cult last year from Peter Barnes although I usually do the dimmers and racks. I would like to do more design work and Chameleon are very good at giving me opportunities to do so. I also like working for Supermick, and this is the first time I've worked for Big City Lights and I'm enjoying it," said Ian Calder.

I asked him about other lighting designers he'd come into contact with: "I like working



Erasure at the Brighton Centre.

with a designer called Richard Gallop who designs for Iggy Pop and Lloyd Cole and the Commotions. I think that Peter Barnes is a very good designer particularly on Big Country and Phil Wiffen who does The Mission for Entec usually does a good show . . ."

Equipment on Tour

Penguin Tour 88/89

Erste Allgemeine Verunsicherung (EAV)

Lighting Desk (control board): 1 Celco Series 2 c/w Softoptions, 1 Celco Series 2 Connexion system.

Dimming: 5 Amptown LD 11 (12 x 10A), Amptown LD V (12 x 20A).

Lamps: 120 Thomas Par 64's, 12 Rank Strand Coda 500/1kw, 6 Altman Zoom Profile 14-24 degree, 4 Altman 6" fresnel 6 - 76 degree.

Effects Lamps: 12 Amptown Posi-Spots + PSC 12 Controller, 8 CCT Colour Changers + MCS 1608 Controller.

Effects: smoke machines, snow machines, pyro's, black-lights, tube lights.

Rigging: 4 Thomas Ground Support Tower (9.5m high), 46m Thomas General Purpose 20.5" Truss.

B.E.T. Experience

Lighting Design: John Rinaldi (Stage Light Design)

Equipment: Bash Theatrical Lighting Inc. Tel: (212) 279 9265

Lighting Desk (Control Board): 1 Producer console + FX.

Lamps: 90 Par 56 500W, 40 4.5" Altman zoom profile, 30 6 x 9 Leko 500W, 10 6 x 9 Leko 1kW, 30 6 x 4.5 Leko 500W, 150 6" 500W fresnel, 10 8" 1kW fresnel, 70 Mini 10 500W fresnel, 24 10" Wizard soft lights, 50 various gobos.

Rigging: various scaff pipes etc.

Terence Trent D'Arby

Lighting Designer: Lawrence Park

Equipment: Chameleon Lighting Tel: 01-579-7279

Lighting Desk (Control Board):



Robert Plant at the Hammersmith Odeon.

1 Celco Series 2 Sixty c/w Softoptions
Dimming: Novalight Racks.
Lamps: 156 Thomas Par 64's, 10 Molefay Units, 6 groundrows, 4 2kW fresnels.
Effects: 1 x 6 way strobe system, 1 Rosco back projection screen.
Rigging: 176' truss, 4 Tomcat ground support towers.
Followspots: 2 Pani truss spots, 2 SuperTroupers.

Bonnie Tyler

Lighting Designer: Louise Strickland

Equipment: Chameleon Lighting

Lighting Desk (Control Board): 1 Avolites QM90 console.

Dimming: Avolite racks.

Lamps: 120 Thomas Par 64's, 9 Leko's, 6 Groundrows.

Effects: 1 Rosco back projection screen.

Rigging: 90' Truss.

Followspots: 2 long throw Pani spots.

Natrel Plus Body Show

Lighting Design: John Rinaldi.

Equipment: Stage Light Design. Tel: 01-879 3439

Lighting Desk (Control Board): 1 Celco Series 2 Thirty c/w Softoptions.

Lamps: 60 Par 64, 2 CCT Sil 10

Rigging: 4 Manfrotto wind-ups, 2 24' genie hoists

All About Eve

Lighting Designer: Tom Lesh

Equipment: Chameleon Lighting

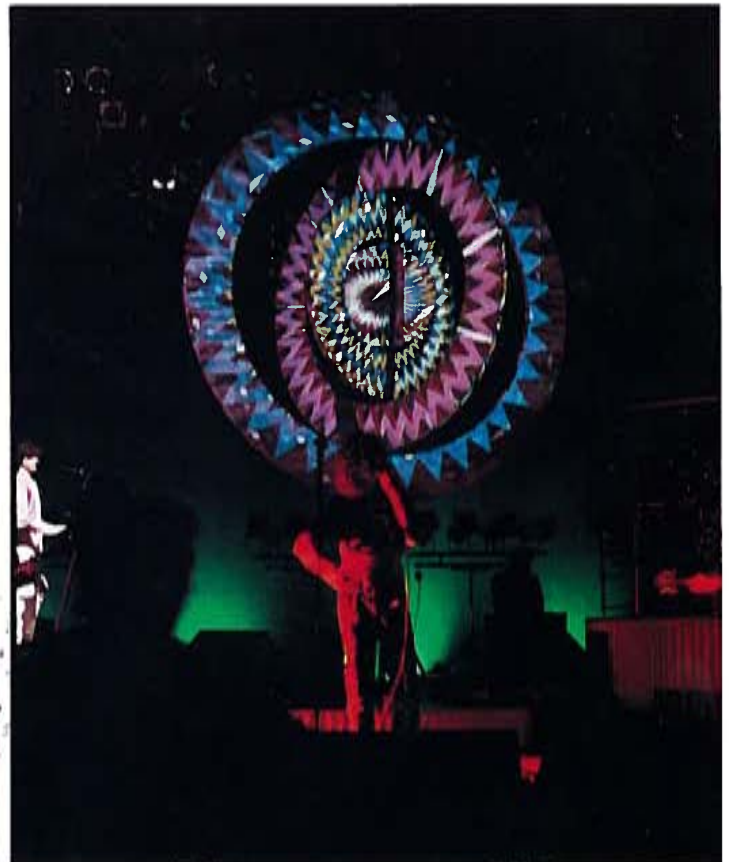
Lighting Desk (Control Board): 1 Celco Series 2 Sixty linked to Celco Series 2 Thirty.

Lamps: 160 Thomas Par 64's, 12 CCT Sil 15's c/w gobo rotators.

Effects: 1 Rosco back projection screen, 4 Cadenza FX projectors, 4 Solar 250 projectors, 1 2 way Kabouki Pipe with back drop and star cloth.

Rigging: 152' truss.

Followspots: 3 Pani truss spots.



Robert Plant Tour: design and construction of the 15' screen and motor drive unit was by Jamie Campbell of Dynamic Innovations, and Ken Sutherland was responsible for the design concept and all slide film projection.

Colour and Thin Film Hi-Tech = Dichrolight

A new approach to colour filters, based on thin film technology, has been developed by Balzers, who say it offers significantly improved performance over existing types of filter, such as gels and coloured glass.

Dichrolight is a range of dichroic colour filters developed specifically for entertainment and decorative lighting applications. Unlike gels or coloured glass they generate pure colours from non-absorption techniques, allow extremely high light transmission and do not fade with regular use. As a result they are suitable for virtually any type of optical or lighting equipment, and in many cases could be regarded as a permanent fixture.

The technology of Dichrolight has already been proven, say Balzer, in demanding applications such as aviation. In essence it involves the application of thin layers of dielectric materials on to a 1mm thick heat resistant glass to create a hard, chemically resistant and mechanically durable filter, capable of withstanding temperatures of up to 400°C.

Unlike the absorption techniques employed by gel or coloured glass, the Balzers filters operate on the principle of interference, by which regions of the visible spectrum are either selectively transmitted or reflected. This means that absolute reproducible colours can be achieved, and because there is not absorption of light the problems of fade or burn-out caused by the build up of heat do not occur.

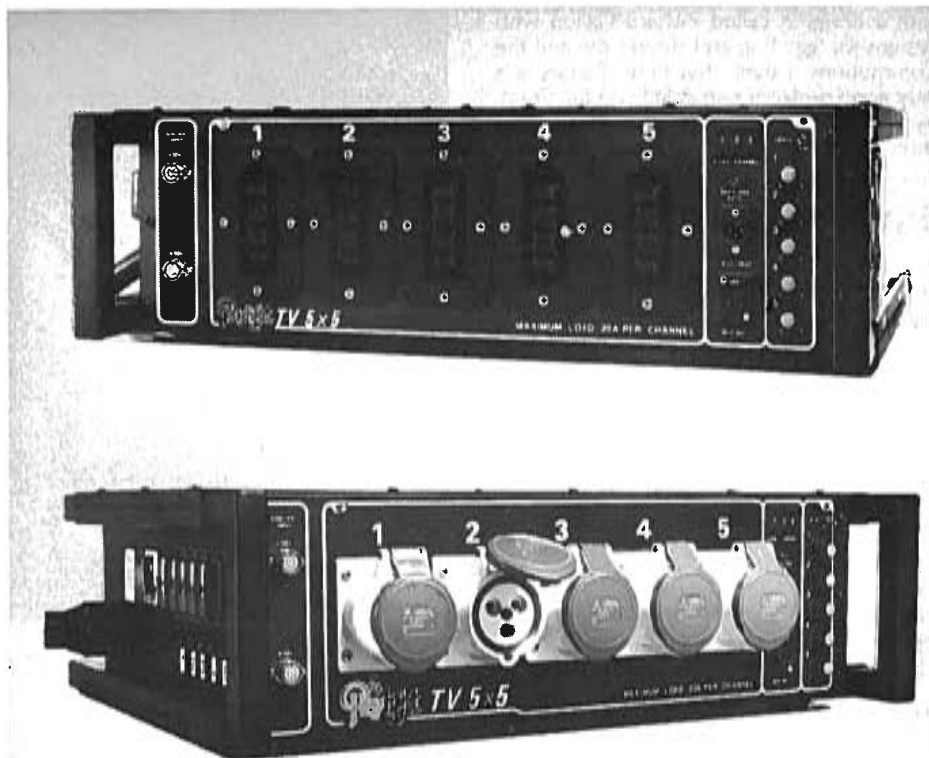
The much higher level of light transmission, created by the interference process and the use of glass, results in brighter and crisper colours, even with dark or intense shades, and Balzers is anticipating an extensive range of applications for Dichrolight, including a number of new areas where conventional filters have so far been unsuitable, such as the sorting of items by colour or in the printing industry.

Of the traditional end-uses for colour filters, the largest areas to benefit will be theatre and concert lighting, TV studios and discotheques, or any environment where powerful lighting is used in a closed space, and in which a low heat build up is desirable.

Other typical applications will be in exhibitions, architecture, teletext equipment, domestic and display lighting. But in any instance the high heat resistance means that filters can now be regarded as part of the internal mechanism of the light system, rather than an external accessory. In Europe and the US for instance, a number of well known lighting manufacturers are already employing this technology on a regular basis.

Dichrolight is available in three standard sizes of 96mm diameter, 168mm diameter or a rectangle of 160mm x 110mm, other sizes being cut or produced to specific requirements. The range consists of 18 colours, all available ex-stock.

For more information contact Balzers High Vacuum Ltd, Northbridge Road, Berkhamsted, Herts HP4 1EN telephone (04427) 2181.



Playlight's new 5 x 5 TV dimmers - launched at the recent ABTT Trade Show in London.

Playlight Dimmers

Due to ever increasing demand, Playlight Hire have introduced a new series of dimmers. The 5kW TV racks feature +10V or -10V control inputs and can be operated via most control desks. There is a built-in Multiplex decoder based on Strand D54 M24/Gemini standard, and DM512 will shortly be introduced as an option. Other features include local channel control knobs, ELCB 30mA trip, cartridge fuses and fan cooling.

Playlight also has available 2kW racks in 15A, 16A CEEFORM or HEALEE, and 10kW racks in 63A CEEFORM.

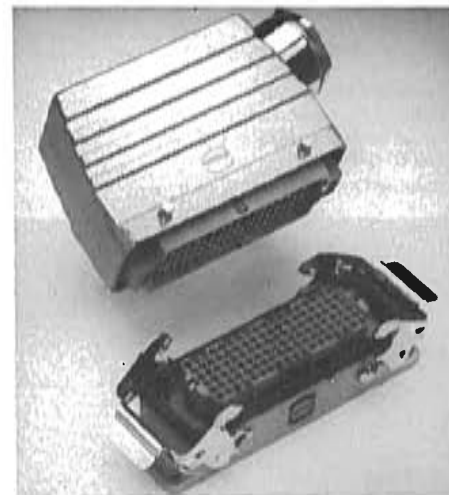
For hire information contact Playlight on 061-793 5848 (Manchester) or 01-965 8188 (London).

New Multipin

Harting Elektronik have launched Han DD - a new High Density Multipin connector for usage in the professional audio and broadcast and theatre lighting industries. Applications include Stage Box microphone feeds to mixing consoles, main power supply connections, or as a cost effective alternative to circular connectors on studio or stage lighting. It provides IP65 protection and an

integral earth contact for user safety.

For further information contact Harting Elektronik Limited, Airport Estate, Biggin Hill, Kent telephone (0959) 71411.



The new Harting high density multipin connector - Hann DD.



Carlsbro's new RM300 mixer amp.

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The new RM300, a 300 watt 6 channel mixer amplifier has recently been launched by Carlsbro Electronics. With comprehensive features, simple operational format and a robust construction, the RM300 is suitable for either fixed installations or on the road. A 19" rack mounted unit, it is the first to be launched by Carlsbro using the latest in Mosfet technology, ensuring a clean, distortion-free sound.

Each of the unit's 6 channels feature XLR balanced low Z and Jack High Z input sockets, plus Gain, Low and High EQ controls. Monitor Send, effects and 'Accutronics' reverb controls are also independently switchable on each channel. The master section of the RM300 includes a 6 band graphic equaliser, master reverb, volume, monitor and effects switches, ensuring comprehensive sound reproduction control.

For full details contact Carlsbro Electronics Limited, Cross Drive, Kirkby-in-Ashfield, Notts NG17 7LD telephone (0623) 753902.

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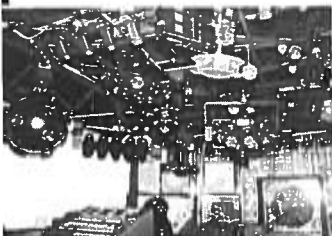
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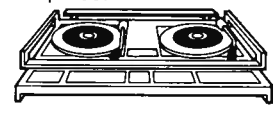
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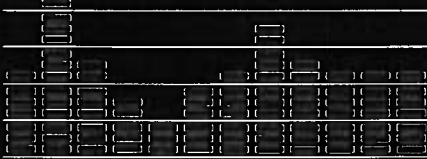
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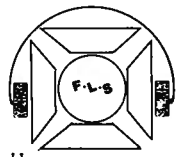
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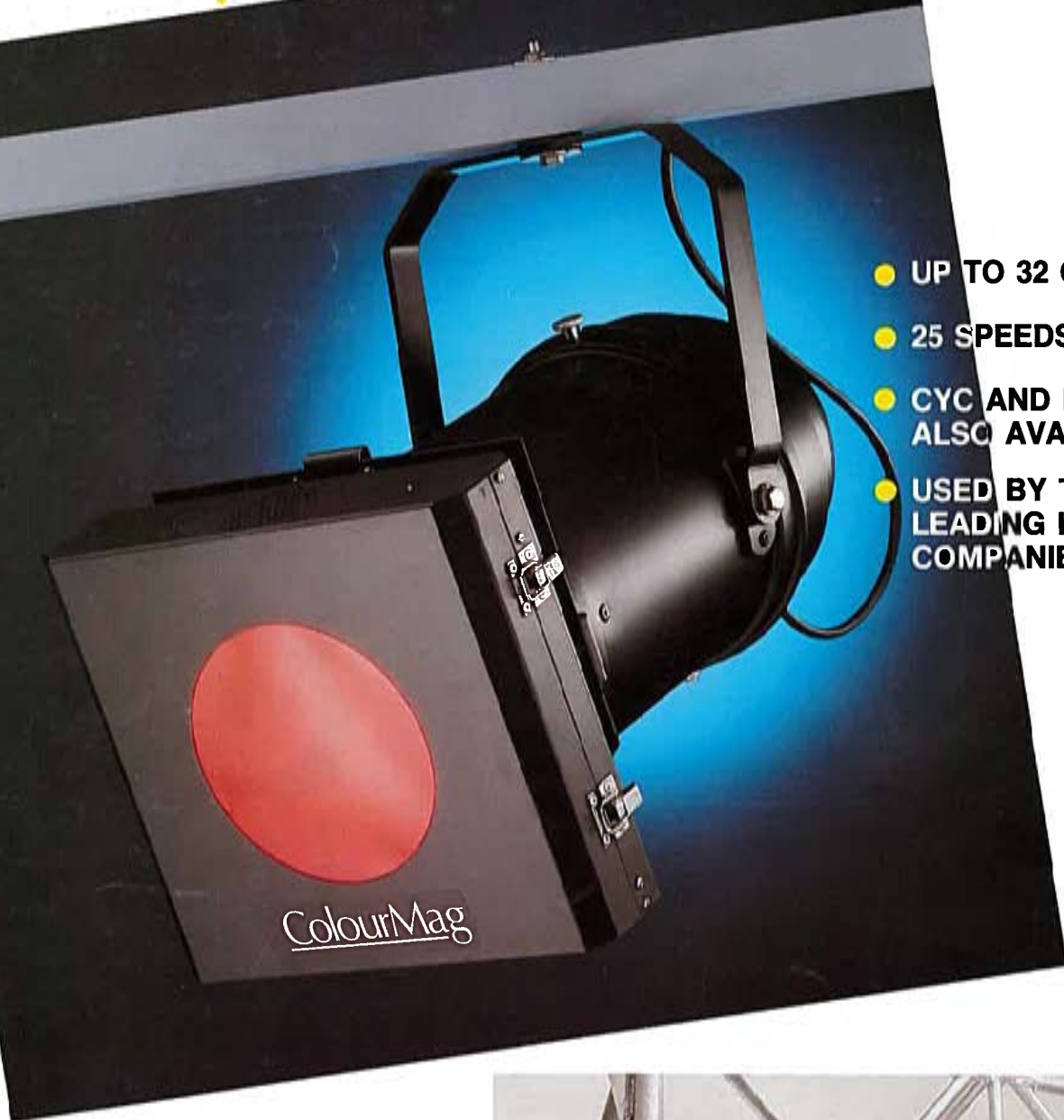
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