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October 1988
Volume 3 No. 10

**Light's
Sound
Show**

LONDON, SEPTEMBER 1988

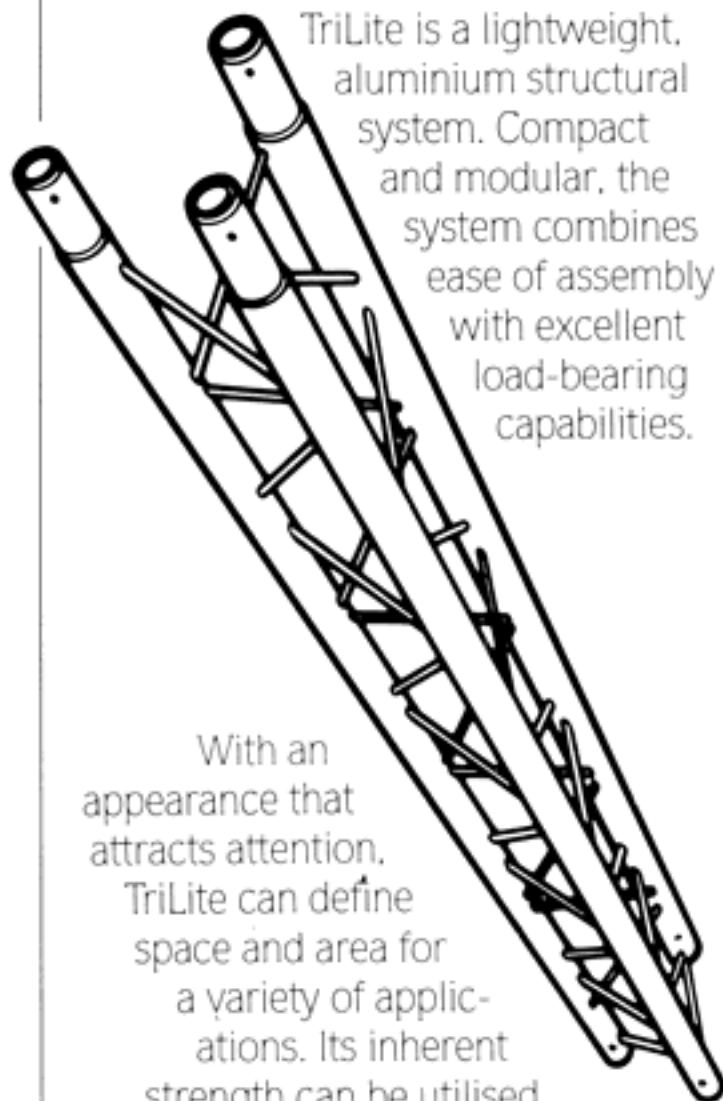
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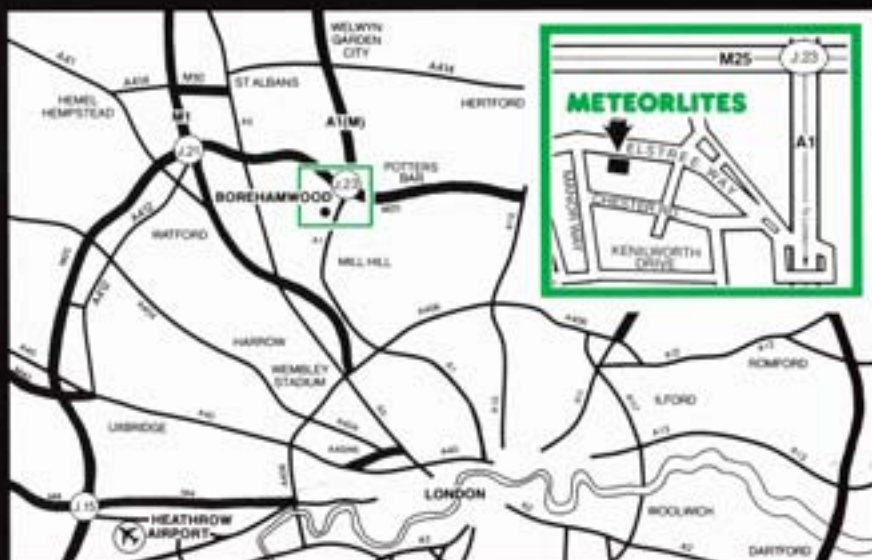
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LIGHTING+SOUND *International*

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Order now - for well after Christmas

Peter Brooks of Zero 88 Lighting and current chairman of PLASA pictured outside Olympia 2 during Light & Sound Show 88 with a rare and highly sought after edition under his arm. He'd prised this extra specimen of Sirius from shipping stock so that Zero 88 staff could cope with all the enquiries being received on stand at the Show. All production of Sirius lighting control boards through to 1989 has already been sold, and getting your hands on one - even if you're the company's managing director - is no easy matter.

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Editor: John Offord
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Telefax: (0323) 646905

PLASA office:
7 Highlight House, St. Leonards Road,
Eastbourne, Sussex BN21 3UH.
Telephone: (0323) 410335

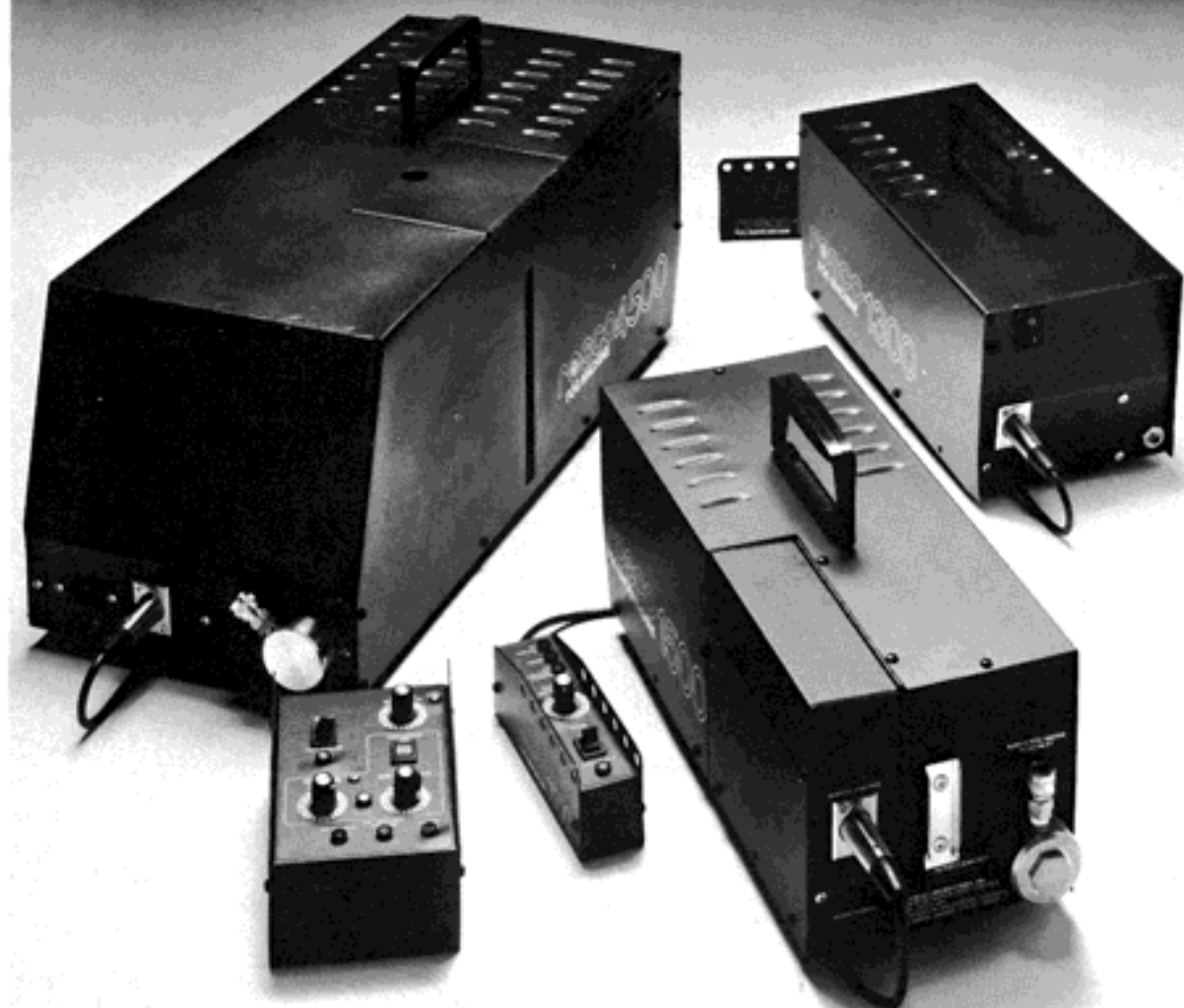
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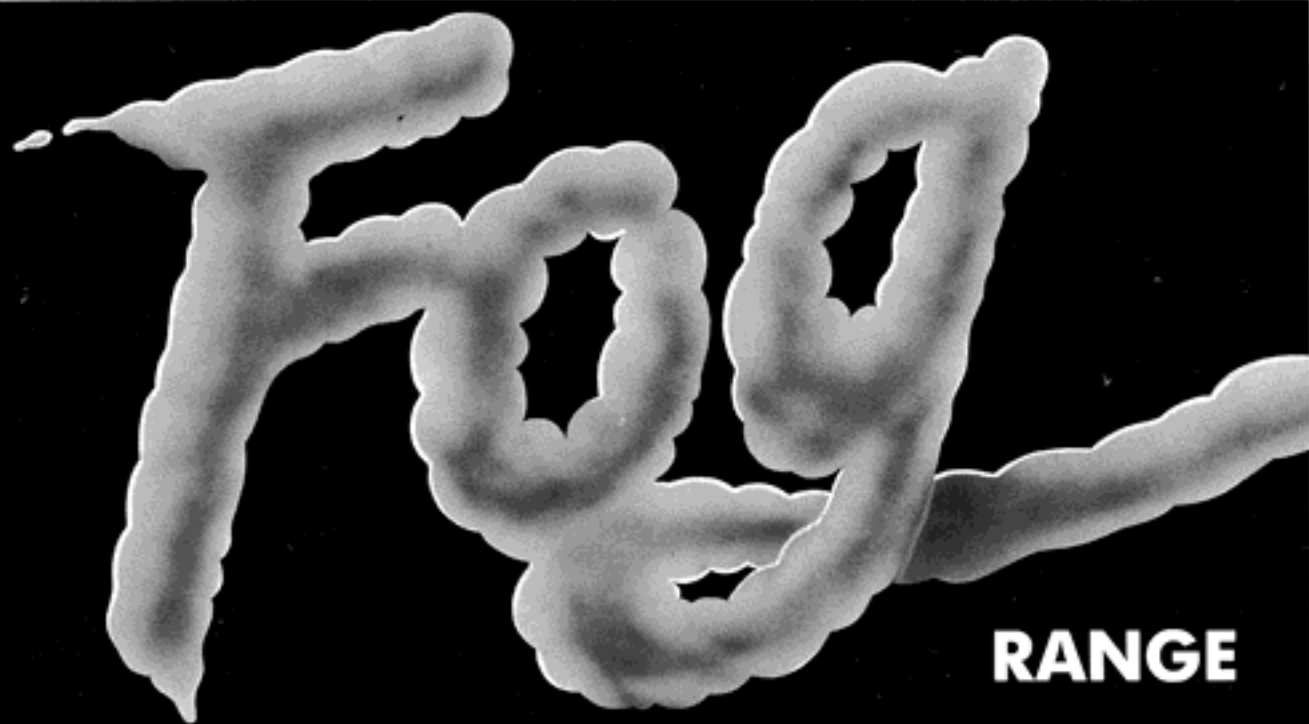
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INTRODUCING THE NEW ROSCO

Designer





The first name in fog machines

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And we developed the phenomenally successful 1500.

The New Range

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The 1500 and 4500 both have high capacity heat exchangers which allow them to operate continuously at any setting without a pause, a feature probably unique to Rosco.

They also allow continuously variable fog control.

This enables you to achieve even more fine tuning in your control which means greater creative scope in terms of the fog

effects you want to create.

Which is why we call it our 'designer' range. Because now you can design any fog you want from the thinnest mist to the thickest pea soup.

They're also safer and more reliable

But performance isn't the only thing we've improved.

All our machines use electrically operated internal peristaltic pumps with a state-of-the-art electronics. This has enabled us to set a new standard for safety and reliability.

And of course you get the usual Rosco features.

Every machine comes with remote control. And each is designed to use Rosco fog fluid which besides the standard version, now also comes in five different scents ranging from Pina Colada to chocolate.

If you would like to know more about the most professional high performance range on the market, fill in the coupon and we'll send our brochure.

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It's available in the following colours.

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.....AND QUEEN

New From Lee Colortran

The Windsor range of luminaires is a new concept in Theatre Lighting design from Lee Colortran. It comprises a Fresnel, P.C. and four zoom profiles, all interchangeable between 1000w and 1200w.

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The Windsor range from Lee Colortran, the brightest idea in lighting for a long time.

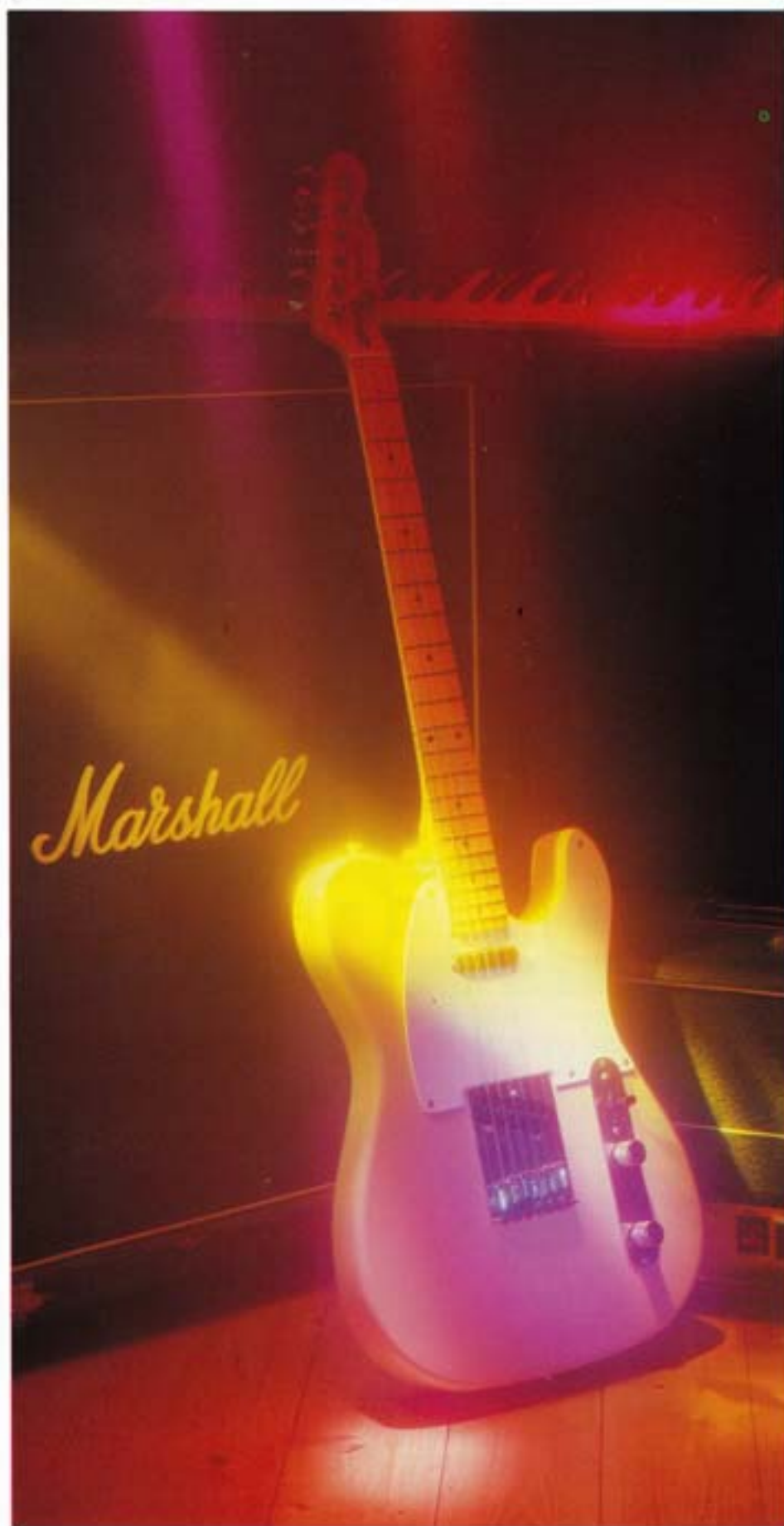
The Lee Hotline

For full details of the new Windsor range of luminaires, ring us on: London (01) 968 7000, Manchester (061) 788 0174 or Nottingham (0602) 455520.

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If you are that 'someone special' please send details of your career history, together with a recent photograph to Malcolm Gregory, Personnel Manager, at the address below.

Alternatively, call in to see us on Stand G17 at the forthcoming Light and Sound '88 show at Olympia.

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PLASA's Big New Era

**Major Success for Light & Sound Show at Olympia 2
First Annual Dinner
Yearbook Launched
New Awards Planned**

The move of PLASA's annual Light & Sound Show to Olympia 2 proved to be a total success, and it gave the event an upgrade that was an absolute necessity. Any misgivings were soon forgotten once the event began.

Without any doubt, the PLASA Show can now be numbered amongst the few international trade shows for the industry that are a 'must' on the calendar. It was also a show for all the industry, whether your particular interest was in discotheque, theatre, concert touring, or whatever.

As a centre for building on Britain's export trade it was an excellent showcase, and the most frequent comment made by exhibitors questioned by L+SI was on the quality of overseas trade visitors. Appropriately, the event was officially opened by Eric Forth MP, the Parliamentary Under Secretary of State for Industry and Consumer Affairs, echoing the DTI's interest in this high-riding sector of British exporting.

As if organising a major up-grade of the 88 Light & Sound Show wasn't enough, PLASA held its first Annual Dinner at the Royal Garden Hotel, Kensington on Sunday 11th September, the opening day of the Show. It proved to be another success story, with 300 members, exhibitors and guests attending, and with after-dinner entertainment provided by the Ronnie Scott Quintet and George Melly with John Chilton's Feetwarmers. Joining PLASA chairman Peter Brooks, vice chairman Tony Akers, and chairman-elect Rob Peck on the top table were representatives of the various European trade associations.

Published in conjunction with this magazine, PLASA's first annual Industry Year-



Tony Akers, Peter Brooks, Ken Sewell and PLASA general secretary Tony Andrew pictured with Eric Forth MP (centre) after he officially opened the PLASA Light & Sound 88 at Olympia 2.

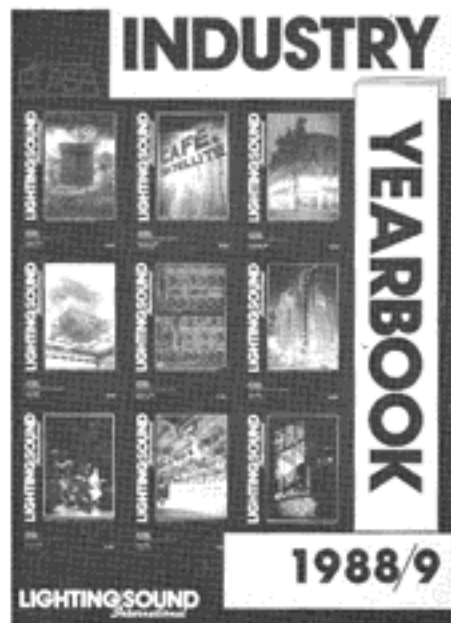
book was launched at the Show. Edited by John Offord, it includes 160 pages of contact information and comment, and for your free copy, send us in the coupon on page 42 in this issue.

Last, but by no means least, moves are afoot to launch PLASA's own Awards in 1989. Chairman Peter Brooks has drawn up a draft for consideration by PLASA's committee, and has asked L+SI to ensure that a full debate is initiated through our columns to ensure that if such a scheme is launched it can start its life from a groundwork of informed comment and opinion.

"I think PLASA should make a limited number of annual awards at the annual dinner for venue design, sound processing equipment, loudspeakers, luminaires and effects, lighting control, and a special merit category," he said. "There should be an emphasis on new product, but existing product could compete.

"Above all, the emphasis should be on openness, and I would suggest that the ideas are publicly debated through L+SI," he explained.

continued on page 15



PLASA's first annual Industry Yearbook - see page 42 for free offer coupon.



The Ronnie Scott Quintet pictured at PLASA's first Annual Dinner.



Tony Akers, Rob Peck and Peter Brooks relax after the speeches are over.

THE MOST ADVANCED SPECIAL EFFECTS

HEAVY



For many years people wishing to create an effect of low lying fog clinging to the floor are only too familiar with the problems of doing so. Invariably it entails a long journey to the chemical company for supply of dry ice, carrying special storage containers and by the time you have returned 25% of the dry ice has evaporated; also by the time you are ready to use it, you probably just have enough for the show and that is after you have spent an hour or so boiling 100 gallons of water!

JEM are pleased to announce the demise of dry ice CO₂ — dry ice is a thing of the past, just a bad memory. From October 1988 JEM will be in full production of HEAVY FOG, the most advanced special effects smoke/fog machine in the world.

HEAVY FOG has taken three years and over 20,000 hours of development and has revolutionised smoke/fog effects throughout the leisure industry. HEAVY FOG is not just a machine that simulates a dry ice (look-a-like) effect, it is vastly superior in every way, and is capable of producing a vast range of special effects.

JEM's Research and Development Department has developed a very specialised low temperature freezing plant capable of temperatures below -30° combined with a high power industrial fog generator. HEAVY FOG has an enormous output and is able to throw a layer of fog to cover a floor 4,000 square feet (371.60 square metres), 1 inch (2.54 cm) off the floor to 6 feet (1.83 metre) high in the air, and at the touch of a button can produce normal smoke effects.

JEM have also developed three special water-based Fog Fluids.

- A1 Quick dispersing
- B2 Medium dispersing
- C3 Long lasting

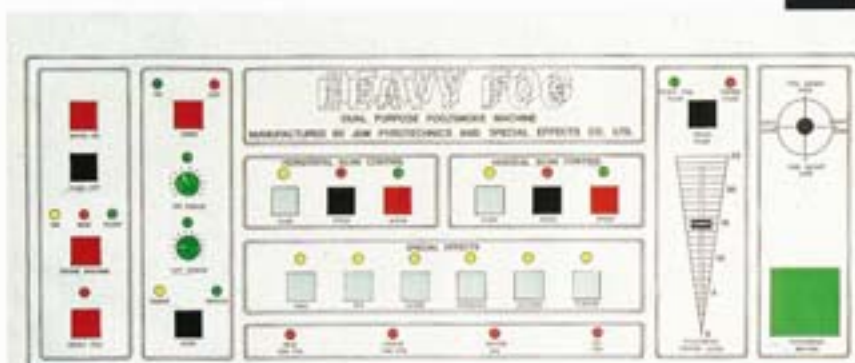
HEAVY FOG fluid is completely dry and will not leave any residue. HEAVY FOG can also produce fog and smoke continuously without stopping to recharge. To enable HEAVY FOG to produce both effects simply fill one fluid tank with standard ZR FOG LIQUID and the other with HEAVY FOG FLUID. HEAVY FOG costs less than half the cost of dry ice CO₂ to run.

Do not be fooled by poor imitations; HEAVY FOG machines are manufactured by JEM PYROTECHNICS & SPECIAL EFFECTS CO. LTD. HEAVY FOG is a Trade Mark of JEM PYROTECHNICS & SPECIAL EFFECT CO. LTD.



SMOKE MACHINE IN THE WORLD

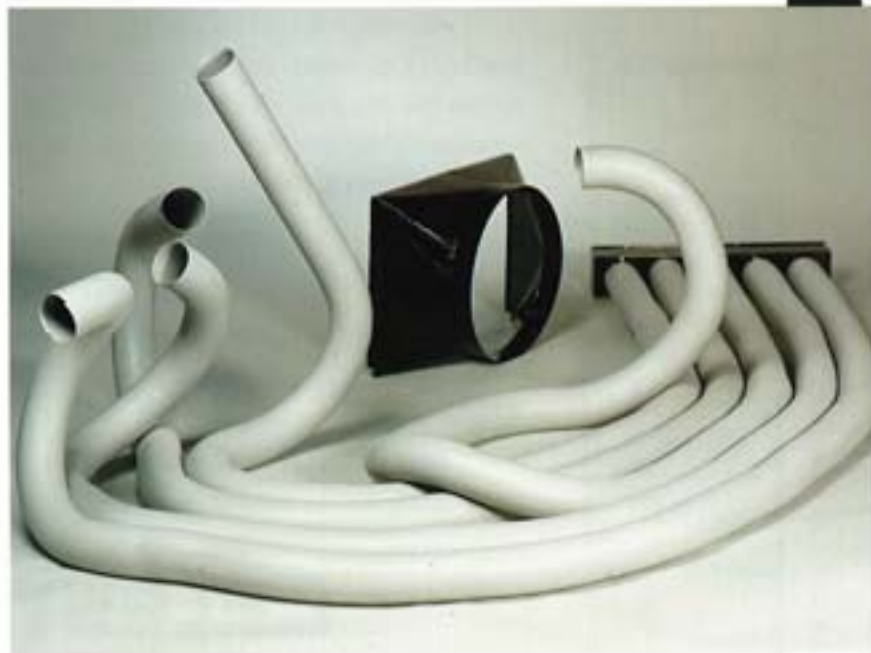
FOG™



Artist's illustration

The controller has a comprehensive range of controls which include variable smoke/fog output, joy stick control, horizontal and vertical scans for the creation of special fog effects, and six pre-set special effects; Wave, Sea, Cloud, Waterfall, Volcano, Curtain. To vary the height of fog simply adjust the fog/smoke output level control and move the joy stick forward or back ward depending on the desired height of fog. All effects can be achieved manually or automatically.

As an optional extra a 5-way ducting system is available and comes complete with 5 x 100mm x 5 metre lengths and front ducting adaptor. Also pictured, rear duct adaptor to which 400 mm ducting can be fitted.



ILLUSTRATED RIGHT: 5 WAY DUCTING SYSTEM
Comes complete 5 X 100mm X 5 metre lengths and front duct adaptor.
Also illustrated rear duct adaptor to which 400mm ducting can be fitted.
Both duct systems are optional extras.



THE SPEAKER CABINETS ARE MADE OF RIGID, VIRTUALLY INDESTRUCTIBLE, HIGH DENSITY POLYMERS.



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The secret lies in the use of the latest laser and computer technology, enabling us to perfect a new, strongly reinforced dome radiator with a clearer, sweeter top-end performance. When integrated with an 8" cone driver with an edgewound ribbon wire, extra long voice coil, the result is a unit with a vastly superior bottom and top-end capability.



The SRC1 is the brains of the SR system. It not only equalizes, it also provides a foolproof, intelligent protection system for the SR1, eliminating the possibility of overload or damage at any level.

Celestion's SR system is changing the face of PA. Write to the address below for full details and the name of your nearest stockist.

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compact diecast body

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thermally insulated handles

strong diecast components



Mighty Light

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Creative Lighting

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fax 0376/780668

"My own view is that there should be only one application allowed from each company in each category, and a maximum of one award for each company in any year; also, awards must be applied for by aspiring companies with a list of applications published. Such applications should state why the product is worthy of an award in order to assist the short-listing process.

"It is obviously important that the judging is done by a committee of experts. Anyone could apply to be a judge, but the selection of judges could be by a PLASA committee, with only one committee member representing the committee and acting as chairman. We would also have to ensure careful rotation of the chair and judges.

"I think the terms of reference of the committee should be publicly debated through L+S, and that written comments regarding awards and individual applications should be sent to the judges by readers of this magazine and any other interested parties.

"As a matter of principle, in the case of a tie, preference should be given to 1) a British company and 2) the smaller company. I also feel strongly that as part of the terms of reference, that if no candidate was good enough then no award should be made," concluded Peter Brooks.

Furse Hire Department

Furse Theatre Products are scheduled to open a stage equipment hire department on October 3rd based at their Nottingham premises. In addition, sale of lighting and controls and a wide range of stage equipment such as tracks, drapes and rigging will also be available.

Technical Manager, Bob Smithurst, will be responsible for day-to-day operations, closely co-ordinated with CCT's London hire division under the overall direction of CCT's national hire manager, Lincoln Parkhouse. In this way it is intended to provide a nationwide hire service providing everything from major productions through to the occasional spotlight. Since re-joining CCT in June, Parkhouse and his new team have completely rejuvenated CCT's hire activities with a growing customer base in the UK and Europe.

Moore for Furse

CCT have now announced that Martin Moore has taken over as general manager of Furse Theatre Products. He is returning from America where he has been an associate with Jules Fisher and Paul Marantz Associates, one of America's major theatre and environmental lighting engineering consultancies, to take up the appointment.

Before going to the States some 10 years ago, Martin Moore was research and development manager for Rank Strand, playing a major role in the design and development of MMS and Light Board control systems.



Moving to the UK: Martin Moore and Linda Snelham-Moore (pictured at the PLASA Show) are Nottingham bound from the US.



Lenny Henry Mixes It

Allen & Heath's new Saber 16 track sound mixing desk - supplied by Luff Light & Sound of south London - has been chosen for the currently highly successful Lenny Henry tour. Saber is available in both studio and live sound versions. It is fully modular with many new options and standard features. Among these are a MIDI mute processor controlling individual mutes as well as 'scene change' memories and a unique checking system for PFL and Solo in place. Saber is part of the new product range from Allen & Heath.



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DDA



SOUND THINKING

More for HAVE

Fast growing HAVE Facilities of London's docklands have announced the purchase of a majority holding in Luff Light & Sound, Strand Lighting and Bose main dealers.

They have also announced the set-up of a new operation, 'Impromptu' to offer a hire service for their new 'Cue' communication system.

Marquee Audio Launch

The Marquee Organisation, which includes Marquee Electronics, Entec Sound and Light and Marquee Presentations, promoters of the legendary Reading Festival, have announced the formation of Marquee Audio. Formerly known as Entec Audio Sales, a division of the hire company, recent expansion and penetration into alternative markets has led to the need for an independent company, say Marquee.

Situated at the Shepperton Studio Centre, Marquee Audio have recently built new offices and a demonstration facility which includes products from some of the professional audio industry's finest manufacturers. Specialising in both supply and installation, Marquee Audio deal with JBL, H+H, Yamaha, B.S.S., Martin Audio, Soundcraft, Rane, Denon, Court Acoustics and many others.

New Bose Dealers

Bose has added four key dealers to its UK network. Paul Farrah Sound, Viewplan, Avitec and BN Communications will be supplying all Bose professional products, including the recently-launched professional Acoustimass integrated loudspeaker system.

PLASA Show Success

"Having been concerned about exhibiting at the show I can report that Eurolight received in excess of 100 firm enquiries, as well as accepting orders on the stand from six new customers," managing director Nick Mobsby told L+S. "Of the visitors seen, some 40% were from overseas who were pleased that the show had expanded to include theatrical and television equipment, as well as the more traditional disco and club systems.

"Eurolight will certainly be back next year and are considering taking a larger space to show a greater range of products to suit the demands of the exhibition visitors," he continued. Eurolight have concluded sales at the Show to Madame Tussaud's for control systems and dimming for the London Planetarium - another ovation sale - and seven smart systems and dimming with infra red control for Wookey Hole Caves.

"All in all it was a fantastic exhibition. Keep up the good work, PLASA!"

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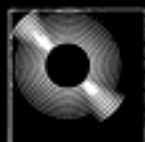
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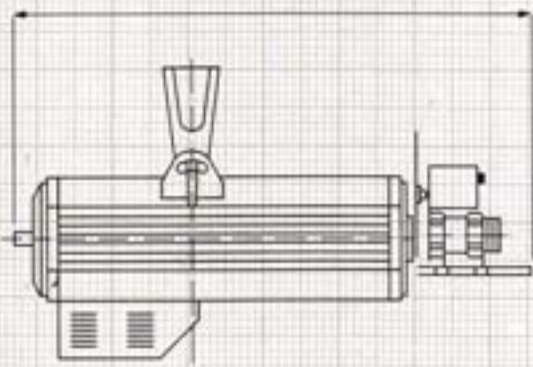
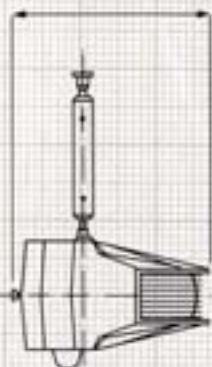
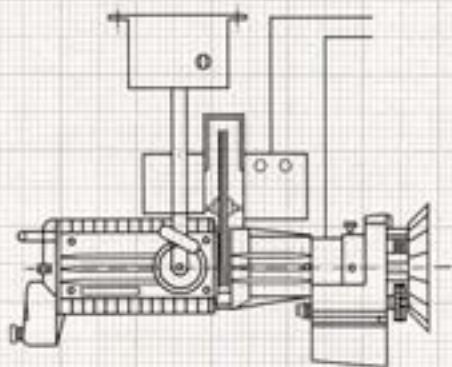
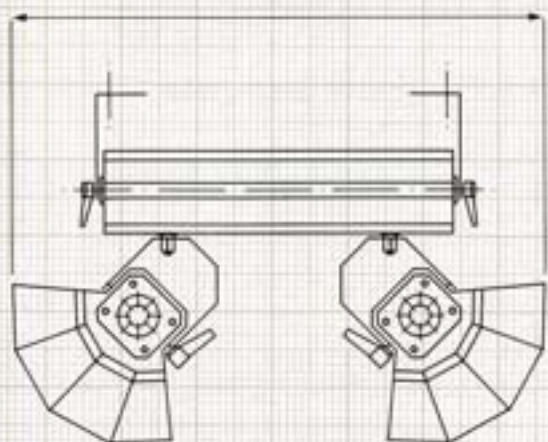
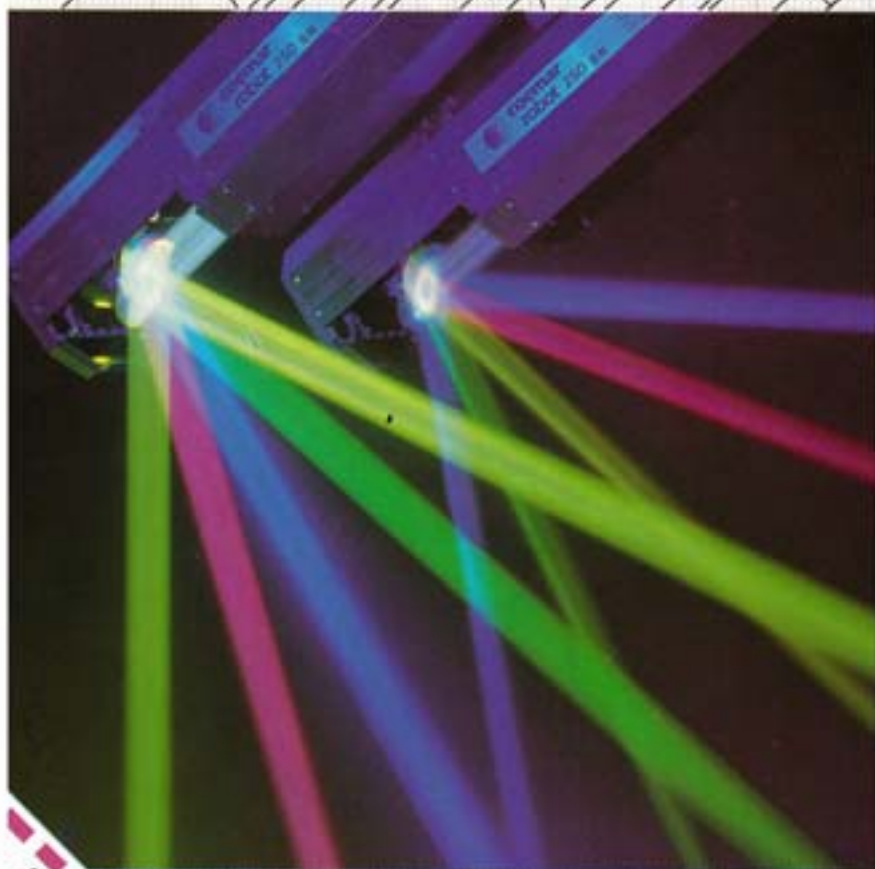
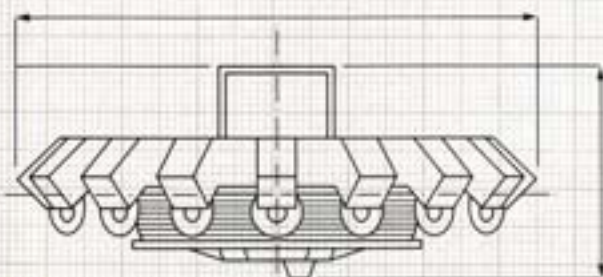
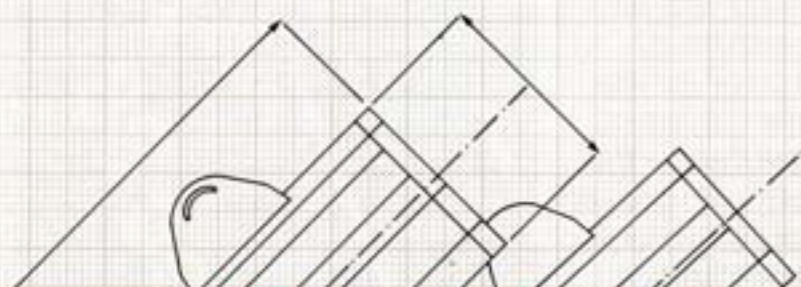
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PLASA LIGHT & SOUND SHOW 88

BRITAIN'S BEST

The Professional Lighting and Sound Association's 1988 Light & Sound Show moved to Olympia 2 this year and sailed straight into the top flight of international trade shows for the industry. Ben Duncan, Brian Davies and Graham Walne tracked down as many exhibitors as they could cope with, and John Offord took most of the pictures . . .

(Details of new products launched at the Show is given in the comprehensive Official Catalogue published with the September issue. Technical information on many new products will also be included in forthcoming Equipment News pages.)

AKG's new C410 ultra lightweight (9oz) headset mic attracted a lot of attention from DJs. Unusually, it has no headband, so it can be worn without upsetting fancy hairstyles. The mic is a battery powered electret type, substantially flat across the whole audio range, and mounted on a unique 'articulated' arm. Another new model, K280 is a high impedance (70 ohm) headset with twin drive units, capable of producing up to 130dB SPL. Retail price is £95. AKG have also launched a range of low cost dynamic microphones with marginal handling noise; prices begin at £59.

Beyer's DT108 is a single earpiece headset with mic, derived from the long established DT100 headphones. S186 is a new radio mic, looking stylish and streamlined because it has an integral aerial. With an eye to the needs of video filming, M300 mic is now available in non-reflective matt black, with an integral on/off switch, as requested by DJs. Also on display, the ST214/6 is a lightweight speaker stand weighing just 3½kg.

Bose launched their 'Acoustimass' powered speaker system. Inside the moulded enclosure, Bose have fitted the usual active equalisation together with an integral power amplifier. Using PWM (Class D) techniques, it's around 90% efficient, helping to keep the overall system weight down. This alone should make it popular for small, mobile 'boot of the car' sound systems. The cabinet claims to use new loading techniques, namely 'two masses of air to launch sound' while 'distortion is effectively filtered by the air inside the enclosure'. In plain English, the loading principle (judging by the cutaway drawings) is essentially a clever development of a conventional Thiele-Small vented enclosure: the bass driver is ported on both sides, each port being tuned to enhance a different frequency range. Audition proved that the Acoustimass was certainly capable of exceptional SPLs for its size, but midrange quality was less than convincing when high levels of bass energy were present, meaning Bose haven't (yet) broken the laws of physics.

CandySound were demonstrating on the Smithfield Electronics' stand a flexible range of modular sound equipment for leisure installations, from pubs to shopping centres. Bridging the gap between domestic hi-fi and fully fledged pro gear, their units emphasise tasty aesthetics with a choice of three colour schemes, and ease of use by barmaids and the like. Nearly two years after introducing their SR system, the large investment in tooling up for moulded plastic enclosures is paying off, so Celestion are planning to extend their range of PA/installation products, with SR3 and SR4 cabinets scheduled for release early in 1989. SR system users so far range from Ronelles night club in Cambridge to the China Club in Miami. For live sound, the list spans Aswad, TPau, Ben Elton and the Tommy Dorsey Band.

Citronic were showing a 1U high power amplifier scheduled for release in December, which consolidates their PPX range. Citronic's Classic series of disco installation 'separates' was on display, revamped in a grey finish, and a tagged security system is now available for installers.

Cloud's Disco Master 1200 replaces the DM 600. It has stereo monitoring, sweepable presence EQ for the mic, a sub-bass output and a second, assignable stereo output which can be used for restaurant areas. At £365 (including the PSU), DM 1200 costs no more than the original DM 600. Sav-



A massive queue formed for the first opening of the doors for a PLASA Light & Sound Show at Olympia 2 London on Sunday 11 September. Early visitors had already taken their places by 8 a.m. for the 11 o'clock start.



Stand of the Show - Optikinetics' white Trilite permutation coupled with a black and cerise colourway won universal acclaim.



Pushing the SR Series - Barrie Fraser and Martin Claydon of Celestion.



Bose UK boss Alan Kilford with the new Acoustimass system.



Citronic's sales director Mike Gerrish with chief engineer Steve Anderson.



Anytronic's Bob Hall describes the new Auto Display Pak.

ings have been made by pruning away facilities (once fashionable, no doubt) which aren't sought after by the majority of today's users. The CV1000 amplifier has been improved. Air cooling is now front-to-rear, a new generation of Mosfet transistors have been incorporated for higher efficiency, meaning less waste heat at full power. Hitherto, limiters on-board power amplifiers have not met with critical acclaim, because amplifier makers have underestimated the unpleasant sonic side-effects of simple hard limiting. Judging by the circuitry inside the CV1000, this is the first installation power amplifier with a 'studio grade' limiter for setting a transparent ceiling on SPL. The

limiter can be disengaged by a switch placed securely under the lid, the threshold presets being accessible on the rear panel.

Databeat Digital Systems demonstrated their IMS1 computer controlled CD music system on the Oxtron Digital Systems stand. The basic version is like a hyper intelligent jukebox; indeed, the hardware includes a rack of Sony CDK-006 60 disc CD players. Songs are automatically selected and cross-faded in and out. Selection avoids repetition and is based on criteria like tempo, year of release and chart position. The criteria can be programmed to change, so the style of music can be kept appropriate as the clientele of a shop or bar changes throughout a daily or weekly cycle. For DJ booths (and attended background systems), the addition of a PC/AT compatible together with Databeat's card means the selection criteria can be instantly changed via a menu. The DJ version

throws up a shortlist of 12 songs which he/she can then choose as the most suitable one for the moment. It means that the DJ's are offered combinations they'd never think of in the heat of the moment, ensuring a professional service. It should also prove educational to inexperienced DJ's! Due for release in November, designer John Leeef first dreamt of such a system in 1974. It's taken four years of part and then full time work to make it a reality.

Fane have introduced 10" and 18" co-axial drivers with CD horns. The latter looks like a world first. A 5", 50 watt 'full range' drive unit has arrived; it features in the Miniflex 100, the smallest of the variously named 'Court by Fane' and 'Fane Court Series' enclosures. They've been busy, because the range spans 11 models, including five full-range types, and a 24" subwoofer. **Formula Sound** were previewing their System 2000 mixer, which builds on the features and expands the channel capacity of the famous PM80, still retaining the modularity. Scheduled for January, the mic input module comes with mid frequency sweep, while the new music input module is switchable between phono/line, linkable to switch line/line. Stereo outputs are provided for two zones, for recording, for lighting controllers with 2kV of isolation, monitoring speakers and for headsets. There's a balanced input to the main stereo buss, selective voice-over ducking, split cueing a multi-function crossfader and two sets of switchable LED metering with switchable peak-hold.

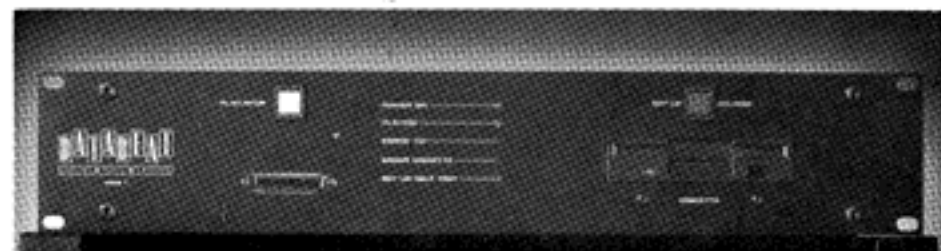
Harrison Information Technology unveiled the SP2000, the latest in modular disco mixing systems. Aside from fairly conventional mono and stereo input modules, a variety of FX and facilities that can normally only be purchased as part of a fully-fledged PA console or as 'outboard' gear, can be plugged-in, giving (for example) FX return EQ, voice filtration, comp-limiting, zoning and bpm monitoring and syncing. The frame costs £400 while each module will be around £100, enabling a unique and sophisticated mixer to be custom specified at modest cost. Due for release in November, the XL-150 is probably the first Mosfet amplifier which runs uninterrupted from a 24 volt standby battery if there's a fire or mains failure. Retailing at around £450, it's likely to gain the approval of fire authorities, who feel that the sudden



AKG's new C410 headset.



Wembley Loudspeaker's latest 'Cube'.



Databeat's IMS1 computer controlled CD music system.



Mode Electronics' new products were displayed on a special hexagonal unit.



Close up: Mode's Dick Steward (left) gets down to technical detail.



HH Electronics were showing their TA-2 and TA-3 PA speakers.



Bryan Morris with the latest console from Studio 1 Electronics.

cessation of music increases the likelihood of panic in a crowd. The amplifier also features a 100v line output, and remote control of volume and muting, via a VCA chip. The SL80, an 8 way digital sampler expressly made for DJs is also due for release in November. It has shutter, reverse and pitch shifting functions, and automatic editing.

On this occasion, **HH** were able to outline the principles behind their TA-2 and TA-3 series of PA speakers. The system is based on a high power 10" drive unit with a co-axial, conical horn. Together, they cover 55Hz to 18kHz. Combining this with a suitably shaped cone flare gives the tweeter's horn a measure of constant directivity at high frequencies, where beamwidth would normally narrow. The matching C1 'system controller' is an active crossover with an integral limiter and a mono sub-woofer output. Installation experts **Marquee Audio** (previously trading as Entec Audio Sales; now they're an independent company within The Marquee Organisation) were displaying racks of equipment from JBL, HH, Rane, Yamaha, Court Acoustics, BSS, Denon and Martin. **Hill Audio** will be announcing major changes to their UK marketing strategy and their product ranges around the new year.

JBL installation series cabinets (**Harman Audio UK Ltd**) are now being made by JBL International in Denmark. By cutting out the transatlantic air-freighting of lumber, a 30% cost reduction is anticipated on the European models, designated 4700. The heavy duty 4800 series intended for Rock'n'Roll PA rentals will continue to be made in California. There's also a new Sub-bass speaker for the European market, and further additions are scheduled to the Control series of full-range enclosures in the autumn, namely Control 10 and 12 SR. On **Shuttlesound's** stand, ElectroVoice's new 'Super-woofers', namely the EVX 160 and 180 were on display for the first time. Power handling has been increased around 3 fold, to 600 watts (conservative EIA rated continuous pink noise) without compromise to efficiency, and a host of related features reduce intermodulation and various kinds of dynamic distortion. This is just the first step; The EVX-1500 and 1800, both rated at 1.5kW are due early in '89. Judging by their brochure, EV aren't tempting a power spiral; they

want people to benefit from the enhanced clarity that power headroom brings. The HP series CD horns has been expanded; the dinky HPT series is optimised for use with the new DH3 super-tweeter up to 20kHz. Model 7300 is EV's first power amplifier, rated at 300 w/ch into 4 ohms. A plug-in 'Linkwitz-Riley' crossover module provides optional Bi/Tri-Amping on a tight budget. The PL50,60 and 70 are new mics in the PL series, the first with N-Dym performance in this price bracket. At the same time, PL5,6,9,11,78,91A and 95A are now discontinued.

The 890AL is **Stanton's** latest moving-magnet cartridge, combining the ruggedness needed for scratch mixing with Hi-Fi performance. **Turbo-**

sound were demoing a wide range of speakers inside their famous soundproof 'igloo'. Amongst these, TSE-112 is a mid/hi 'pack' fitted with the unique V2 hf driver. It's recommended for installations where extra hf output is required to combat hf absorption. Turbosound's TXD series of direct-radiating cabinets announced in June attracted continuous interest throughout; availability is scheduled for Nov 1st. **TOA** had built a sound booth which approached the height and simulated the atmosphere of a real discotheque better than others. It wasn't as soundproof as an igloo, but TOA were public spirited enough (unlike some other manufacturers) to keep the doors shut and restrict full power to short bursts.

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Avolites on Show . . .



Steve Warren on Q-Patch.



Rory Orr on the QM.



Jef Hammersley on Precept.

The speaker system on audition was the SF-30 (a 3 way enclosure with vented bass/mid, CD hf horn and super-tweeter) combined with the SW46W 2 x 18" sub-woofer. For a Japanese system, it was remarkable, being for the first time tonally in tune with (my) Western ears, and comparable in sound (and price note) to the better class of speakers made in the UK or USA. TOA's seven agencies include Audilec and Carlsbro.

Wembley Loudspeakers report that the Maxicube 2 is now readily available (see L+SI Sept). There's also a new model in the B-Line range: BL2828 is an ultra compact (28x28x20") sub-bass cab with a response to 25Hz, the result of advanced labyrinth and horn-loading techniques. Next

door, **Volt Loudspeakers** had their FR.220.18" coaxial driver on display. It's probably the only unit of its kind that's available in impedances of 32 and 64 ohms. As such, it's ideal for large-scale distribution off long 100 volt lines; units can be paralleled without the cost, hassle and quality loss of step-down transformers. Rated at 125w average or 250w programme, it costs just £97. Finally, **Wilmex** were showing the 'Flash Former', a combined phono amp and 'Transformer' switching unit. Using solid-state devices, it's claimed to overcome the potential unreliability of mechanical switches, under duress of ultra-heavy scratching.

Ben Duncan

Light & Sound Show 88 at Olympia 2 has become one of the most important international exhibitions for discotheque sound and lighting equipment. During the event I was talking over old times with people who were in at the beginning just fourteen years ago when Ben Cree set-up a show at the Sundown Club in Charing Cross Road. In 1975 and 1976 the show moved to the Bloomsbury Hotel, and in 1977 the organisation was taken over by the British Association of Discotheque Equipment Manufacturers (BADEM), the fore-runner of PLASA. In just fourteen years the industry has really come of age.

What impresses me most is that in spite of the fact many of the original companies such as Op-

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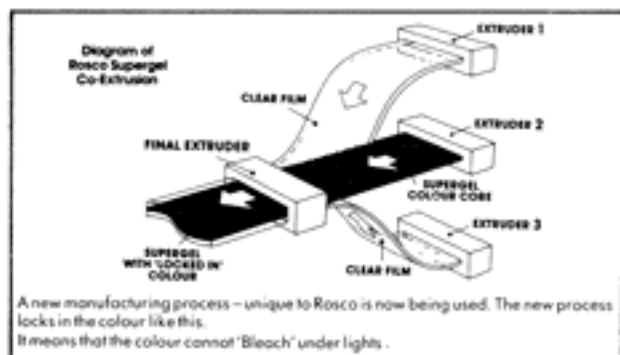
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tikinetics, Pulsar, Zero 88 and Icelectrics are now international operations, they are all still friendly and approachable, something that is not true of many other industries. And whilst they may fight for orders during the day, in the evening they can be found chatting with each other over a drink at the appropriate rendezvous.

How then has the equipment and the industry changed in the past fourteen years? Obviously it has become ultra sophisticated and complex, with microprocessor technology heavily involved with both sound and lighting. Systems have also become much more commercial and professional. Reliability is now the watch-word. Whatever happens, the show must go on, so back-up is imperative and beam-ping of sound achieves this in addition to greatly enhanced quality.

What of this year's show? What's new? Have things changed dramatically, or has the development revolved around small improvements and cost savings? Both really. The inclusion of digital storage techniques in sound equipment has added a new dimension, whilst the use of microprocessors has changed lighting systems considerably, in many cases making them much easier to operate and offering many more facilities at the same time.

For me the most impressive mixer was the SP2000 from **Harrison Information Technology**. It is a new concept in mixer technology. It is modular in construction and offers just about every possible combination of facility the most sagacious operator could desire, including built-in digital delay, BPM counter, up to 20 stereo channels, 100mm faders, live microphone mixing over backing tracks, broadcast monitoring, versatile output processing including vocal suppression and stereo enhancement. Undoubtedly it is a mixer for the future.

Also offering built-in digital delay is the Numark mixer (**Lamba Electronics**). The currently available model is the DM1775 which was ably demonstrated by Cut Master Swift. In December it is anticipated that an up-graded model, the DM1975, will be available, offering many more facilities such as memories and easier operation but at a higher cost. The background to these two products was detailed by the American designer Steve Schiffman, and they have been in development for the past three years. Initial samples were

offered to a number of top DJs for their reactions. From these reactions a second line of samples were produced, and these were also checked out by DJs before further work was put in. The result is a mixer ergonomically designed with all the facilities working DJs require, and at under £1000 represent good value for money, in my view.

On the amplifier front two products impressed me: the new Amcron range currently handled by **Shuttlesound** and the MK2 CV1000 from **Cloud Electronics**. The big daddy of them all must be the Amcron Macro Tech 10,000, offering a full 10,000W in a single package. Both the Amcron and the Cloud units have built in limiters which reduce the input signal to ensure that overloads cannot occur.

A most useful and low cost lighting gadget called the Sound Animator has been produced by **Electronic Lighting and Music**. This is for use in conjunction with a scanner or scanner bank and is connected in the mains supply to the motors. The unit has a built-in microphone which detects the music beat and causes the motors to 'dance' in tune with the beat. At around £30 it will be a useful addition which can be added to an installation at any time.

A quite unique service which caught my eye was that from **Future Software Systems**. Boss Chris Fulton explained that when his computer is connected to a video system it enables messages and comments to be presented in real time at the touch of a button. For example, used during the recent Disco Mixing Competition he could pull up comments on the competitors as they operated, or flash up pre-recorded messages about the event. Also, if something unexpected happened he could type up a comment, rude or otherwise!, instantly displaying this on the large multi-screen video system installed.

Talking of video systems, there were several stands displaying video in various guises. **Cameron Video Services** were showing their Videowall product and demonstrating the easy to use software packages. Additionally Cameron can offer a repair service as well as a comprehensive hire service.

Showing a video projector system was **Amark** who import the TVP3000 - which they consider to be the best and brightest system available. To complement the projector, Amark were also

showing their video graphics based on the Commodore Amiga computer. Arguably it is the best graphics machine around, although it is not supported by programmers at the level they promised. However, Amark will do all the programming necessary and were offering a tape of a club's logo and events, giving a discount to all who ordered at the Show.

One of several overseas exhibitors was **Videoprojector Industry SpA** of Italy, large screen video projection systems being their speciality. On show was a single projector unit; the quality was excellent and a system producing images up to 70 square metres is available.

The Fairlight CVI Entertainer is a digital effects generator for use in conjunction with a video screen system. It has a titling facility and a sequencer in addition to more than 50 preset effects. This Australian product was being shown in the UK for the first time by **Light Vision** of London.

An ancillary of video systems is the software, the most frequently used product being music video tapes. Several companies specialise in the production of these, with each tape usually carrying 20 to 30 individual musical items, and the majority are official copies of videos produced by or for the groups concerned. A great many are material from the top 40 charts, and as such are not always applicable to the club scene. **Diamond Time Ltd** are specialising the supply of tapes especially produced for the dance and disco industry. The material, which is copyright cleared, features 30 tracks per month of the top dance music in the country for which the tape is destined. Additional material can also be supplied to supplement dance videos: material such as comedy spots and advertising. A variety of samples was displayed and demonstrated by top London DJ Graham Gold who can be seen on specific nights at Gullivers in Soho.

Lighting in club land has become a massive industry both for the lantern/effect manufacturer and the club installer. One of the biggest design and installation companies today is Tony Kingsley's **Avitec**. The stand as usual was one of the largest at Olympia and undoubtedly one of the best equipped with a regular light and sound show from early morning until closing time. Showing in the UK for the first time was the Colour Pro system which is based on the mixing of the three



Chris Fulton of Future Software Systems.



Manoochehr Kamani and Andrew Robinson in operation on the Universal Lasers stand.



Paul Adams, Charmaine Adams, Nigel Holmes and Mark Adams of PA Installations and Amistar.



Many new lighting units were demonstrated by Soundtech Ltd.



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primary colours, each having their own lamp and colour filter. They are then mixed by varying the amount of light from each and are thus able to produce an infinite range of colours and intensities (see L&S August issue).

Another very big stand on the ground floor was **Laser Systems** from South Wales, and they had no less than seven members of the company in attendance to demonstrate product and answer questions of all types. Four new products were displayed, the Superscanner, the Fibrelight, the Colour Cube and the MK2 Gyrolight.

Also showing a range of lasers were **Laser International**, who claim that their product are aimed at the lower end of the market in terms of cost. The least expensive laser is based on a 2mW tube with the option of 5mW if required. The master unit is entirely self contained and complete with mains power pack. The unit, the Midi, provides a random switch which can be music sequenced and slave units can be added at will.

Universal Lasers also had an impressive display, ranging from their baby unit running just 1mW to the 2W Argon system with computerised controller. A 360 degree laser display system was also shown and very effective it proved to be.

The only illuminated floor which I saw was

mounted on the **Infinity International** stand. Many variations of design are available and those on display were excellent. Not too many clubs go in for this type of lighting - which seems a pity as they can be very effective as well as cost effective to a club contemplating the renewal of a floor. Probably the most interesting display was that which utilised the infinity mirror technique, and in a floor can be quite disturbing! The infinity well was quite amazing, and even more so the effect of the well turning a corner. As with any lighting device these floors need to be seen to be fully appreciated.

Many clubs using video displays are finding that suitable material is limited. One option these days is to install a satellite communications receiver and utilise programmes such as MTV or even films with the sound turned off. One company exhibiting this year were **Amistar Satellite Communications** who can provide all the necessary equipment and install if required. A live satellite broadcast reception system was installed on the stand and the pictures were also displayed on other video company exhibits such as Cameron Video Systems. Advice on the legal aspects of this form of entertainment was also available from Amistar representatives. Sharing this stand were

representatives of **PA Installations** who were at the exhibition to promote their installation service which now numbers important installations as far apart as Southampton and York.

Several companies who sell products to the trade as well as install and equip clubs and pubs are also selling direct to the retail user. Among these at the show were **Disco Rainbow International**. Based in London's Shepherds Bush, they also offer a hire service which may be of especial interest to club owners with breakdown problems.

Leamington Sight & Sound are another company who sell to both retail and trade, they are also well known for their club and pub installations. In order to provide a better service in the wholesale market, this facet of the business has now been hived off from the retail and installation operations. The new division, **United Kingdom Distributors**, is under the capable aegis of Peter Maddison. The flight case operation, of which I have personal experience, has been considerably extended and can be highly recommended.

The highlight of the **Lightfactor Sales** stand was undoubtedly the computerised motorised lighting systems such as the Lampo Tobor Raggio and the Satel Swivel - the former being exhibited for the



Hazel Simpson of HIT with the new SP2000 modular mixing system.



Turbosound had the first public showing of their new TXD series.



Fane: new 10" and 18" co-axial drivers with CD horns.



Kelectrics' Rob Peck with Roy Parker of Leicester Sound and Lighting.

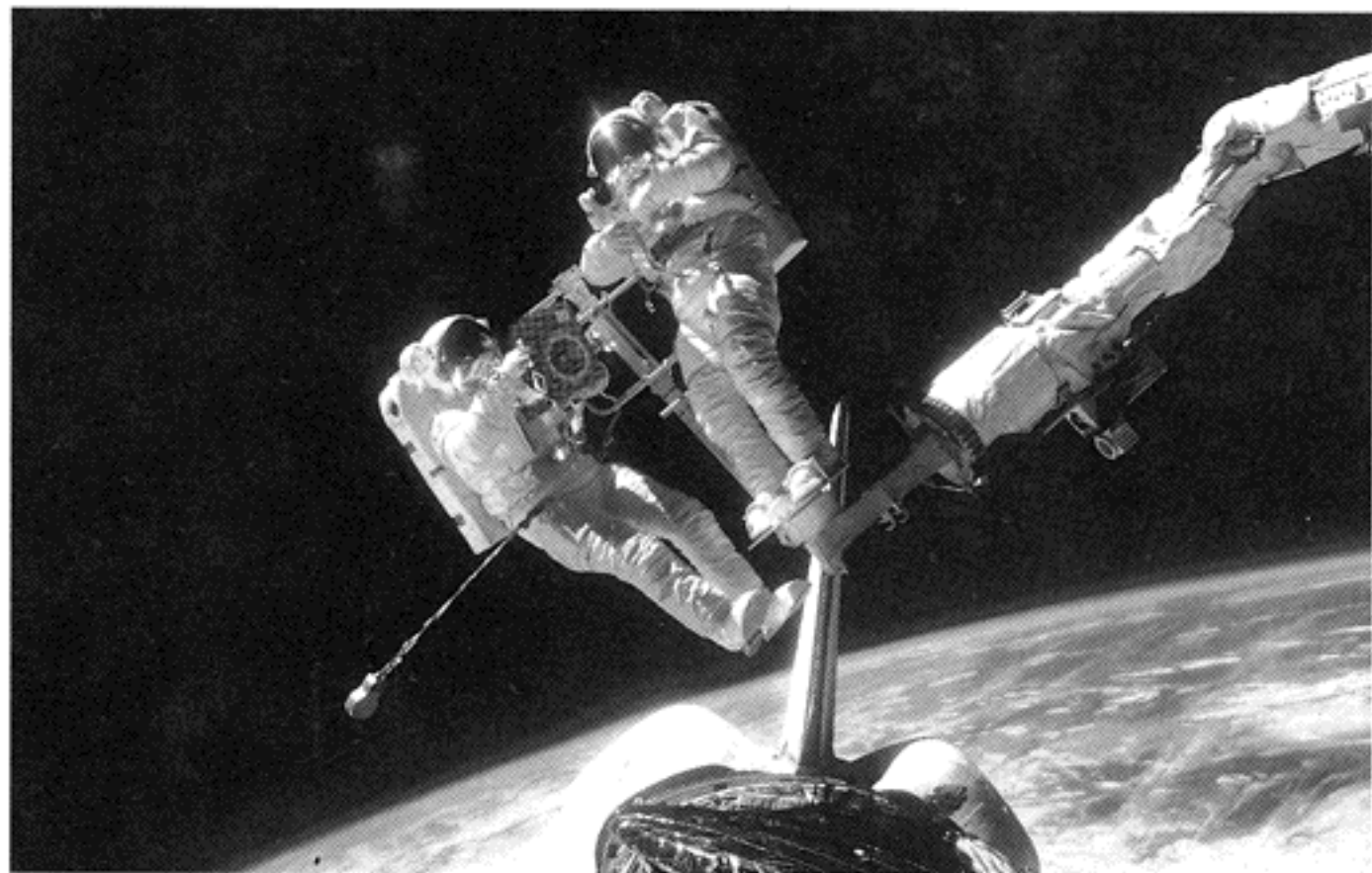


DJ's at work on the Lamba Electronics stand.



Audilec's Phil Price launched the RCF 'Espace' series.

IF WE PUT THE OTHER SPEAKER HERE.....



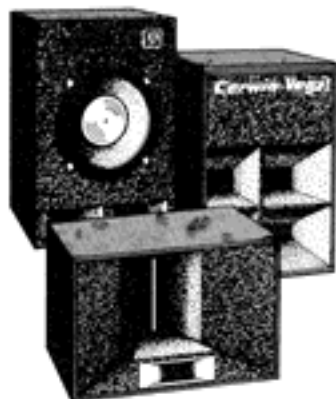
The men from Avitec's sound design department seem to know no limits, but then who would if they were given the exclusive use and distribution of the world's finest professional sound systems.

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Cerebrum's Rod Bartholomeusz promotes Light & Sound Design's concert lighting products.



David Catterall of Zero 88 goes into Sirius speak with Malcolm Robertson of Effects Lighting.



Cue Systems were highlighting their desk operating system.



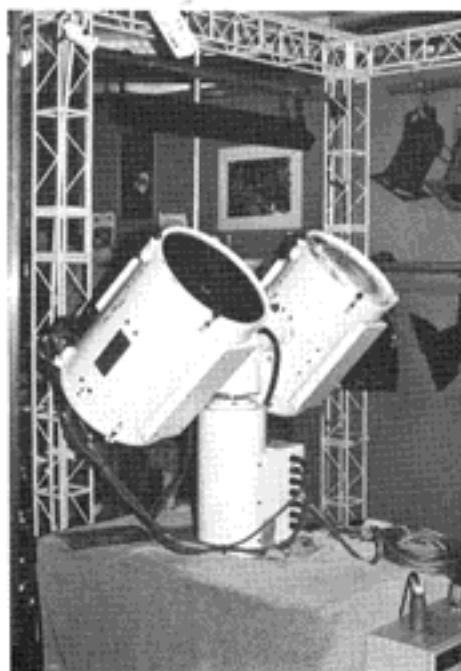
Amru Saund with Musicraft's latest PPD mixer within a Soundtex flight case.



CCT's Jack Watling takes note.



Multiform Lighting's new Scorpio explained.



Searchlights from Action Lighting.



Speaker talk: Paul McCullum (right) of Wembley Loudspeakers.



Spencer Brooks - launched Marquee Audio.



Laserpoint's impressive Pixelite videowall system on demonstration.

first time in the UK. Lightfactor also sell to both retail and trade clients and offer a definitive catalogue which they claim to be 'the' handbook for installers and club managers/owners alike!

Lightning Sound and Light, now in their third year of operation, claim to be one of the major retailers and installers in the UK. Expansion has been carried out every year and 1988 sees the doubling of both showroom and office accommodation. A hire service and a separate hire catalogue has now been made available.

A similar company, **Luton Sound and Lighting Ltd**, specialise in mail order and export in addition to their usual installation and retail implementation. Of especial interest is their own brand range of loudspeakers under the trading name of Herdy.

Musicraft are always guaranteed to have something new, different, and usually useful, and 1988 was no exception. For the road show/hirer operation they can supply flight cases into which any 19 inch rack mounted mixer can be fitted plus two Technics turntables, or with slight modifications with a Stanley knife, any other disco turntables. Wheel mounted racks for amps etc. are also readily available and from experience I can say how much better this type of system is.



Catherine Aylmore and Graham Smith of Starlight Design.



NJD Electronics - no less than 10 new products on show.



Martin Bailey of Tannoy in technical mode.



Martin Deacon (centre) shows the MP33 lighting controller.



HGM Sound - a wide ranging display.



John Raybone and Steve Halsall with Quatro on the Tobybound stand.

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Always busy - the Lightfactor stand.



Another busy first floor stand - Action Lighting had a full range of equipment.



Charles Wood and Fergus Veitch (Pancan) on the Touchstone stand.



Paul Butler (left) of fast-growing Mushroom Lighting of Northampton.



Eurolight's Nick Mobsby (right) with everything you need for an installation.



Spotlight (Milano) had a representative range of equipment of show.



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In business now for the past six years **S&S Sound System** now market a range of products of their own manufacture under the brand name of Phase 2. On show and demonstrated were the Phase 2 loudspeaker systems and the very new RD3 vari-speed professional turntable. This product is the newest all-British unit in the UK market. Conceived to be easily operated with a very high technical specification, serviceability has not been forgotten. Already having received very good reports, I can only await my review sample with impatience!

The latest news from **Zodiak Manufacturing** is the taking over of Manhattan Sound and Light, and these products are now being manufactured under licence in Huntingdon. Also shown at Olympia were the Zodiak range of scanners, pinspots and other lighting effects.

The **Tobysound** stand had many great photographs of recently completed installations. Also featured were the Tobysound Service division who claim to answer most service requests within two hours. The Quatro lighting system was also on display and for the first time the auto-volume circuit from the Quatro Excel was available. This unit, which can be programmed to control sound levels consistent with mood and time of day, will immediately appeal to all-day opening pubs.

Amongst the Italian contingent of **APIAD** members was **Technitron** who have been making lighting effects for the dance industry since the early 70s. Prominent in their display was the Polifemo, which is a rotating half sphere with a central lamp and a series of coloured optics produces blades of coloured light.

Launching a new compact fog machine for the first time in the UK were **Music and Light Production** of Milano, Italy. Other products from their range included Par36 based lighting units and horizontal beam effects. Also manufacturing lighting equipment for many years and supplying theatres and television in addition to discotheques are **Spotlight** srl of Milano. On display were versions of their follow spots and motorised spotlight systems. Spotlight are represented in the UK by **AC Lighting** of High Wycombe.

SGM snc, another APIAD member from Italy, have concentrated their efforts during 1988 into improving the aesthetics and the updating of the electronics associated with their range of lighting

control consoles. Several innovations were introduced at the show including several new designs of floor, and their P63 and P64 dimmers together with the Regia 64 lighting consoles.

Involved in the manufacture of both lighting systems and fog machines **Programsistem** of Italy were demonstrating their impressive 'Seven' and 'Genesis' lighting effects in conjunction with their fog machines. A newly formed company at the end of last year **Lite Beam** of Napoli were formed from the remnants of Sear - a well respected name in lighting. Displayed at PLASA were some of their motorised computer controlled lighting effects such as the Magnum, Colt and Pike.

Studio 1 Electronics were showing for the first time two new disco consoles for mobile or club use. The Elite features 6 channel stereo mixer with two mic channels and autofade, three band EQ for both mics and music channels. Being fully flight cased and complete with Technics turntables it is suited to the hire market. The Entertainer is a more modest system using two variable speed turntables, split cuing, switchable crossfade and two mic channels. It is available powered or unpowered, with the powered version having twin 150W amplifiers built in. Also on the stand was the new 150W Mosfet amplifier with built-in 5 band graphic EQ.

Starlight Design were showing a range of lighting equipment based primarily on the ubiquitous pinspot or Par 36 lamp. Several new products were displayed including the Starlight 20 lamp Tumbling Box and Starfan. Specialist items can be designed and produced by Starlight Design as one-offs if standard production items are not quite what the client requires.

Similarly, Par 36 based lighting units were demonstrated on the **Soundtech** stand. The principal newcomer to the range available was the system comprising up to 32 lamp heads with fully synchronised and pre-programmed movement on all axis, linked by a single daisy chain data lead to the controller. New additions to the low voltage lighting systems have been made, and also new was a four head helicopter with angled rotor plate.

On the **Anytronics** stand were several new items including an Auto Display Pack which is essentially a four channel switching pack with a built-in sequencer offering 48 pre-programmed patterns. Also new is Light System One - an expandable

lighting control system. In its basic form it is a four channel lighting controller but with the capability of being added to the other Anytronics products to give dimming, crossfade and strobe control facilities.

Astralloy are now concentrating all their efforts in the trussing market - no, not for those with hernias - for those who have to fly lighting and sound systems. Five types are now available with the new Quatralite being especially suited to the hire market. Introduced for the first time at the show was a very new concept in trussing, complete with integral wiring. The system I inspected had internal wiring to socket outlets at strategic locations, and for rapid setting up this will be a winner.

In addition to their range of motorised lighting fitting and mirror balls, Batmink have introduced three new lighting effects. The Mini-Moonbeam and Scanning Moonbeam are based upon the effect of a rotating array of pin sharp light beams which may be coloured with gels or left white, the Scanning Moonbeam being fitted with a 120 degree scanning motor. The new Flatbeam produces two vivid razor sharp static flat beams which may be individually coloured gels. I wonder when Batmink will fit a tilting motor to sweep the flat beams up and down!

Although designed with the mobile roadshow in mind, the **Deacon** MP33 lighting controller has the reliability and quality much in demand by the installation market. This controller has been carefully thought out and designed with the operator in mind. Extremely compact, but with a big specification, the MP33 will hold its own against stiff competition.

Especially for use in both environmental as well as effects lighting the SD1200/1202 low voltage dimmer panels from **lelectrics** are ideal for the installation industry. The range of switching panels and packs were also much in evidence such as the LV1200 panel which separates the high and low voltages and is designed to be used with the 512 12 channel zero voltage switching packs.

In addition to their own manufactured range of lighting effects **Jivelight** are now the sole importers for the French Sapro range of lighting units. Scanners and spinners from Spain were also shown including those from Coperluz.

Always a major force in discotheque equipment, **Le Maitre's** stand this year was no exception. Most



Manvizia Micheli, Maria-Pia Pantaleo of the Italian Institute for Foreign Trade, and Nicola Ticozzi on the APIAD stand. Eight Italian companies exhibited.



ADB (Belgium) trio of Andre Stuckens, Robert Rutten and Raph Janssens.



First time at a PLASA Show: The Great American Market from Hollywood.



Terry D'Brass and Rob Field of Lightfactor with the award-winning PP4 control.



Joint presentation: High End Systems (Color Pro) and Astralloy.

impressive was the low smoke effect generator, the LSX, which simulates the effect of dry ice as it hugs the ground. A quite large unit, bigger than the Fogger dry ice machine, the LSX is suited to the large club or theatre. Three new loudspeakers from **Acoustic Energy** were demonstrated these being distributed under the **Light and Sound Distribution** banner.

Light Engineering continue to display and sell their every popular range of Parabeam lighting products which, due to continued investment in manufacturing techniques, have resulted in even more competitive prices. Tubelight and stair nosing continue to do well, as does the well thought out Paraflex lighting rig.

Sound Creations have introduced three new lighting controllers with the showing of the 3 channel, 4 channel and 8 channel audio sequenc-



Paul Mardon and Ken Sewell of Pulsar focused on Golden Scan - a joint project with Italy's Clay Paky.

ing systems which being complete with microphone input do not require connection into the sound system. Sound products shown included the Autocue SC909 and the console type SC120, which together with a selection of amplifiers and programmed matrix units complemented the display.

The **SIS** stand was most impressive, a very large one, but with a few products given special emphasis: the new Rotovision screen and a range of dichroic low voltage fittings and the Beamspot. Other products from **SIS** such as the four-head scanner bank were also prominent.

No such prominence was afforded on the **Sapro** (France) stand. The only item on view was a large screen projection television set which was programmed with a video tape of the lighting equipment made by the company. I found the quality of



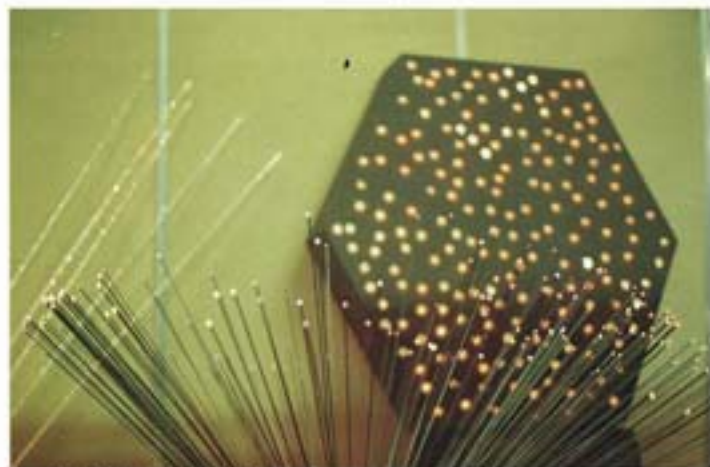
Light Engineering: continued manufacturing and design expertise.

the reproduction poor in the ambient light and it made it difficult to evaluate the lighting effects. I feel that Sapro missed an opportunity as a result.

The **Penn Fabrications** stand had on display a wide range of Par 64 and Par 56 lanterns shown to good effect on their own-brand trussing which included a simple 1 to 5 way corner piece together with a range of clamps and accessories.

Two new products were on show from **Light Processor**: the Commander 2 lighting controller being shown in public for the first time, and the PP4 compact controller being shown in the UK for the first time. The PP4 has an impressive range of functions and is to sell for under £200. Also on show was a lighting show controller activated by compact disc.

Optikinetics as usual took a very large stand which included a very well used and most



Fibre Optics from Par Opti Projects.



Clay Paky Golden Scans light up the Pulsar display area.



Strand Lighting had a joint stand with main dealer Luff Light & Sound.



Strand's latest - the 'Impact' control system - demonstrated by Ken Priddy.

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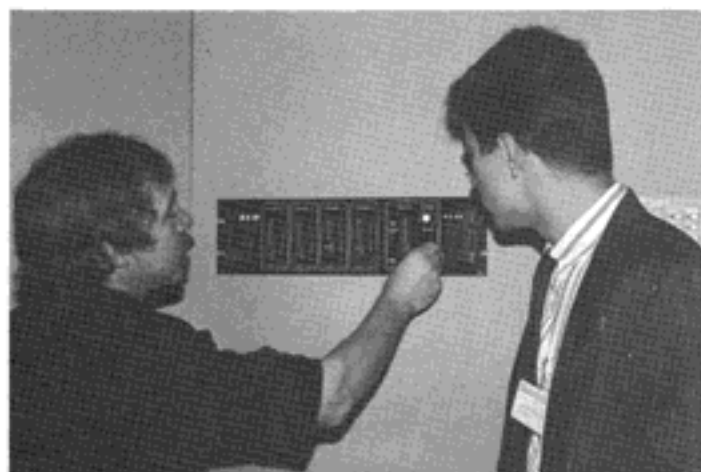
Fibre optics trio of David Press, Paul Raymond and Gill Potter from Par Opti.



Peter Knight of Balzers explains the Dichrolight colour filter range.



Cheryl Bereznyckj and Monica Saunders promote new look ADDA cases.



Eric Matthews of ELM demos the new DX-80 4-channel dimming controller.

welcome refreshment bar where one could discuss business whilst imbibing coffee and other delights. New at the show were the Xenon based Stroblower, comprising of a four channel controller and four strobe units ceiling mounted. It is very, very impressive and well priced against the competition. Also new for the smaller installation or roadshow is the Flatspot, based on a 500W halogen lamp and lens assembly which creates a horizontal flat beam of light which is very poignant and economic at a little over £50.

The installation design and manufacturing company **Malham** also had a big stand with many photographs of their installations, and I had the opportunity to inspect some of their blueprints of future installations. The watchword of the products is utter reliability and to this end only quality components are used throughout. Demonstrated on the stand was a very large lighting unit based on 48 Par36 lamps in a rig some 6ft by 5ft which by the use of an electric piston system can scan

through an angle of 120 degrees.

In addition to **Multiform's** large range of lighting controllers on display on stand F127 was the newly created **Scorpio 1800** light mixing desk. Designed specifically for the live music and theatrical markets this product has many attractive features: 18 channels; add/swap flash master slave facility to enable 2 desks to be linked; crossfade or switched chases; sound activation, automatic or single step plus many more features too numerous to mention.

Finally, but by no means least, from **NJD** came a staggering ten new products which include new lighting controllers, new loudspeakers and new amplifiers and new consoles. Probably the two most interesting for the club owner were the **Logic Octet 19** inch rack-mounted eight way programmable switch panel and the **Logic 256 19** inch rack mounted eight way programmable lighting controller.

Brian Davies

Firstly, congratulations are in order: to those who had the courage to book Olympia last year, to those who organised it this year, and to the editor of this publication for the best exhibition guide ever, by virtue of the simple concept of printing standowner's names on the plan. Please copy! There were many people to meet and the large number from abroad made the event international... any chance of a conference next year?

When reviewing exhibitions I always ask for information on new items which those people who missed the show wouldn't otherwise see, but it concerns me that many exhibitors' staff appeared unaware of what to promote, others asked to be identified as the market leaders without giving a poor journalist any reasons, and others treated catalogues as gold-dust and hid them away on the back of the stand. Presumably business is still good, but with 147 companies exhibiting at this show a glimpse was provided of the fierce competition that exists in the market place.

Exhibitions are ideal places to launch new or improved products, and here is a selection.

Lytmode introduced their new range of 'Green Ginger' controls now operating on DMX language, a major step for the company but sensibly they

have sought to maintain their popularity with safety-conscious educational markets by powering the desk from the dimmer pack. For those unfamiliar with the advantages of multiplex, **Lytmode** displayed side-by-side examples of the old multiway connectors and the single replacement 6 pin din. **Son-et-Lumiere** launched themselves onto Plasa for the first time and as specialists in satellite TV (as well as lighting, sound and video design and installation) they could be busy in the forthcoming revolution.

Another company exhibiting for the first time was **Beam** who specialise in the design and installation of lighting, sound and video equipment for discos. I liked their policy of setting up all the systems in their factory for complete test before installation. In this way teething troubles can be sorted in the best environment and actual site time is minimised. The company also offer DJ training, neon signs and sound level controllers - a useful product in view of Ken Dibble's article about legislation in last month's L&S.

Also trailed in last month's edition were the new colours from **Rosco** which are now included in the company's updated 'Supergel' guide (now in Filofax format) and which forms an excellent com-

panion data sheet to Francis Reid's guide to diffusion filters. I'm not sure if Rosco have identified a generation of Yuppie technicians, but in addition to the Filofax guide they have now launched 'Designer Fog', a range of three machines - all of which use the Oscar winning fluid and the senior of which the 4500 fog 'processor' puts out 4500 cubic feet per minute. Another well-known theatre name **TSL** were offering their 'Digifex' CD sound effects range, but on lighting would only say 'watch this space'...

Any exhibition provides a golden opportunity for the manufacturers of trussing systems to demonstrate their wares. **Mushroom**, who were featured in the August edition of L&S, certainly took the advantage. **Thomas** also took the chance to launch 'TinyTruss', a new and elegant system which seems ideal for exhibitions and which sensibly needs no tools to set up, each section locking together via large wingnuts. **Thomas** have also asked me to clarify a report made in an earlier L&S about their 'Raylight'. It is now fitted with **Mogulprong** so that the direct electrical connection is much safer than with ordinarily wired raylights. For those who missed the ABTT Trade Show **Cerebrum Lighting** provided a second opportunity to see the 'Trusstower'. This low-cost system comprises twin manual towers which can raise a 30' truss to a height of 18', ideal for small venues. Watch out for further news from **Cerebrum** about a new venture...

Some exhibitors enjoyed many enquiries from their fellow standholders. Typical of these were **Balzers** and **Par Opti Projects**. Both these companies sell components to other manufacturers and so the show offered a chance to dig beyond the finished product. **Balzers** manufacture a wide range of films and coatings but it was their 'Dichrolight' range of 18 dichroic colour filters that attracted attention. The colours are available in a rectangle of 160mm x 110mm and in diameters of 96mm and 168mm although other sizes can be cut to order. **Par Opti Projects**, 'the fibre optics people', manufacture the components for fibre optic harnesses, guides, light sources and lenses and they supply companies all over the world. I am only familiar with the application of this technology in starcloths so it was interesting to see the effects that different lenses can create; the



Jiveight's Dave Winfield shows the best effects.



Serious conflag: Mick McManus and Rodney Clarke of Le Maitre.



Inside the works at Citronic.



Now available - JEM's Heavy Fog machines show off their power.



Line-up for the next presentation - the Laser Systems team.



M&M Lighting's Mike Goldberg with the Eagle system from Abstract Electronics.



David Mitchell, Sue Riley and David Yeoward of SIS Lighting.

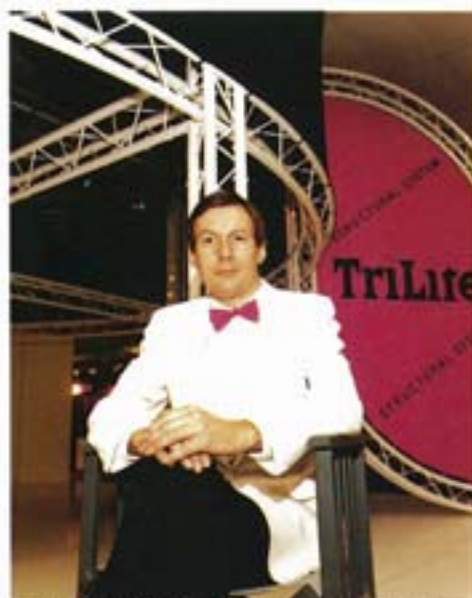


First floor focus - Batmink had a wealth of lighting fittings on display.

Putting on the style . . .



Sandra Cockell and Formula Sound's System 2000.



Optikinetics' Neil Rice takes the director's chair.



WB Lighting's Roman Walanta caught in the Coemar cross beams.



Avitec's non-stop Tony Kingsley is persuaded to slow down to camera shutter speed.



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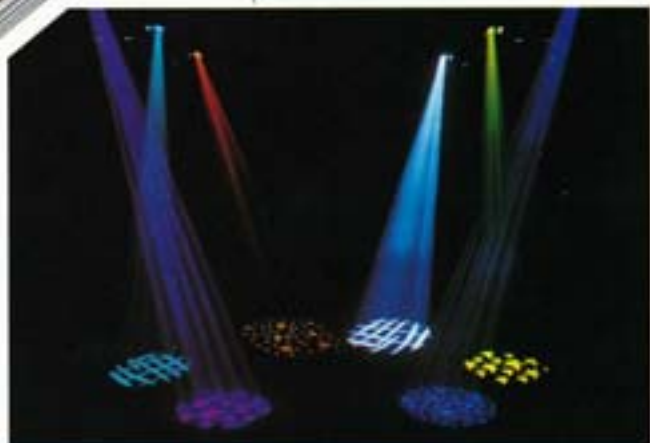
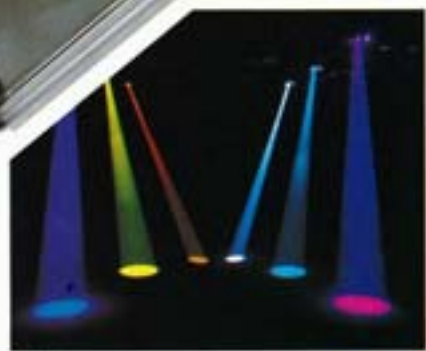
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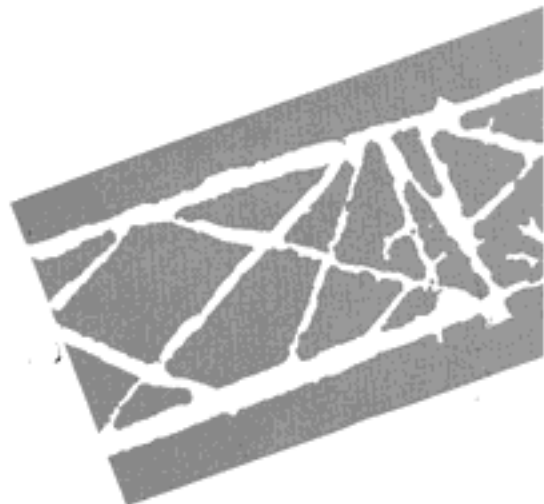
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company have also updated those colour-change lamps that were such a feature of the 60's.

Another area of technology with which I am unfamiliar is lasers, but in the hands of **Laserpoint** and **Laser Grafix** I can relax. Laserpoint is another company recently featured in L&SI (you read it all here first folks) and is one of the world's largest. Wherever the final destination of the Jarre concert, Laserpoint will be there; they told me of a recent concert in India with 3 people in the audience - hard to imagine. Laserpoint have also now announced that Teletape Video will be the exclusive UK distributors for their 'Pixelite VideoWall' system, and their Plasa demonstration set-up gave impressive clarity and was controlled by surely the smallest equipment rack at the show. Laser Grafix also sell to other laser companies worldwide and featured their new 'Prisma' system which interfaces with Midi keyboards offering the ultimate in son-et-lumiere. The Krypton laser can achieve multiple colours and the text writing is the best I have seen with no trail from one letter to the next.

L&SI will be featuring a survey later this year on remote control luminaires and on colour change so I don't want to include information here which would be more appropriate later, however the exhibition gave an opportunity to see how these systems have developed. A wide variety of colour scrollers was on display. **M&M** launched 'Rainbow' at 11 colours, **AC Lighting** launched Great American Market's 'Colorwiz' which offers 11 colours for 6'8" units and 22 colours for smaller units, and **Cerebrum** launched 'Geljet' at 12 colours. They also have the 'Jumbo Gel-jet' which fits Thomas 8 lights and other large applications (cyc floods) with an overall aperture size of 12" x 23". **M&M** also showed the 'Eagle' which offers remote colour and gobo change as does the 'Macspot' from **Optikinetics**. **WB Lighting** demonstrated 'Robot', but equally impressive was the replacement of their discharge lamps by 750w 60v filament units which are obviously easier to dim and have given their products a new lease of life.

Lynx Lighting attracted attention with their forest of moving synchronised stalactite-like pipes - the 'Tube' system - which contains the 12v 100w Superspot lamp and which is controlled via the Zero 88 Orion providing random or controlled settings. Lynx also showed their 'Synchro' range of



Andrew Stone (right) of Eurolight explains the new 'Ovation' lighting control system.

individually controllable Superspot mobiles and an impressive 'Proteus' which moved a pack of Colorpros. Welcome visitors **Spotlight** (via agents AC Lighting) showed a range of remote pan-and-tilt controllers which fitted as standard almost all of their range, and specials are available. For small clubs and discos their 'Visitor' remote joystick follow spot should prove ideal, but there may also be applications in larger premises since the unit is small and can be mounted where conventional follow spots would not fit - perhaps built into the set closer to the artiste.

Undoubtedly the star of this section was 'Golden Scan' from **Clay Paky** and offered by **Pulsar**, who are convinced this is the best moving light on the market. Golden Scan echoes the Panca (also available on the **Touchstone** stand) idea of moving the beam via a mirror rather than coping with the inertia of the whole lamp housing; 6 colours, 3



Augusto Andraghetti (right) of Spotlight Milano.

gobos, variable iris and strobing are available. At Plasa the Golden Scan was controlled by Oska, with its still unique touch sensitive screen.

Lightfactor Sales' brochure includes a number of other similar devices including the Colibri, Color-Pro (yet another product reviewed in L&SI recently) and the Eagle.

The Great American Market (agents AC Lighting) demonstrated a wide range of excellent products. A variation on the theme discussed above is the 'Lightwiz' which is a remote controllable yoke into which a variety of different spotlights can be mounted. It is also wired to accept the Colorwiz scroller. Look out also for their 'Microbrute' which is just over 12" square and contains 9 75w MR16 lamps. It will also accept a colour scroller - perhaps a colour changing cyc light at last? 'Access' is their new 256 way control system which will provide all manner of control language; I particularly like



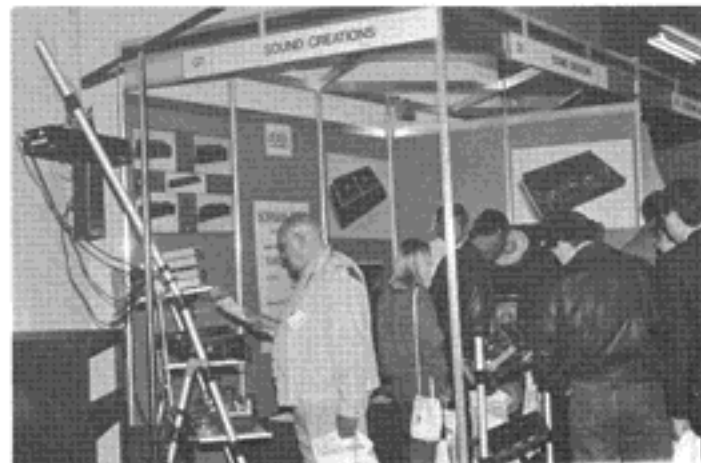
Beam Electronics' James Foster (left) describes the company's complete discotheque service.



Leamington Sight and Sound's Ian Potter (centre) and Peter Maddison (left) in discussion with Eric Forth MP, Parliamentary Under Secretary of State for Industry and Consumer Affairs, who opened the Light & Sound Show.



The men from Malham: James Eynon, Dennis Eynon and Steve Drewett.



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Light & Sound Design



Frances Thompson (US) and Robert Clorley frame up Mervyn Thomas in James Thomas Engineering's new lightweight trussing system.



Contact point: Matthew Griffiths (right) of TSL writes up some new business.



Lee Colortran's Joe Thomley shows the new modular Windsor range.



Getting a word in: Neil Rice, Julie Garton and John Jeffcoat of Optikinetics.



Nigel Clark (Powerdrive) and Mark Tonks on the Cerebrum Lighting stand.



CCT's Don Hindle hooks up to the light source.

the 'help' menu which is permanently on screen and updates as you progress through the plotting. List price is under £2000. Great American are however best known for effects and certainly their gobo wall of actual backlit patterns was the best display of this product I have seen. They are also known for the 'Scene Machine' - a smaller projector than the more famous European names and now available in a punchy 2.5K HMI. On display was the full range of Scene Machine effects modules.

Action Lighting's stand was an Aladdin's cave of delights, with an actual cave, illuminated by their now famous 'Phantom' candles; at the other end of the range their searchlight must have been the most unusual product of the show. The unit has twin 1kw xenon lamphouses which have a range of 6km and which are fitted with powered pan and tilt. A memory facility will be available soon.

New switchboards abounded: an improved 'Eclipse' from Zero 88 with more circuits, and more memory among the goodies but watch out for their 'Sirius' desk, 24 channel 99 memory at £1195 retail and unlike many competitors it includes a wide variety of chases, and possesses 2 presets. Eurolight launched 'Ovation' which has

just been sold to the Lilian Baylis studio at Sadlers Wells. The system comprises 320 channels and with colour VDU, backup, stalls remote and alpha keyboard costs less than £10,000. On the **Strand** stand the Action desk has now been upgraded to 48 ways at £1850 list but pride of place went to 'Impact', a new control aimed at filling the gap between Galaxy and Gemini. Impact provides 350 channels and is costed at £15,000 list.

Controls were also in evidence on the CCT stand with the smaller Eltec complementing the larger range from Avab. For CCT this was the first exhibition since they purchased Furze (although the companies are still trading under separate names). The new relationship enables a package to be offered which includes drapes, stage equipment, project planning and management and an enlarged service team.

I have deliberately left the most interesting product to the end, as befits a star. Lee Colortran have been much in the news recently with the company in the middle of an enforced restructuring, and hopefully we will hear better reports soon. The company have overhauled their control range in recent years and added the Magic Sheet (which L&S brought to you first from the

ABTT North Trade Show last October) and the colour range continues to be a standard. Now Lee Colortran have introduced a completely new range of luminaires. Bored already? Don't be. This one is different. It comes apart so that you can build what you want. Altogether there are 15 components from which 10 different luminaires can be constructed: profiles, fresnels or PC's. So by stocking the components you can change your stock as the show requires, and it should be a boon to hire companies. Of course spotlights are there to produce light and not be a construction toy, so we will have to see what comes out of the sharp end, and how the components stand up to rough handling. But congratulations to Lee for foresight and courage.

Every year at this point I always express wonder at how much longer the UK can support a multitude of separate exhibitions. Plasa's is by far the biggest. Any chance of PLASA, APRS, ABTT, ILAM and IEAM, for instance, all taking Birmingham's NEC and joining at a conference? Yes, I doubt it too - but we'll keep you posted.

Graham Walne

PLASA ANNUAL DINNER

The first annual dinner of the Professional Lighting and Sound Association was held at the Royal Garden Hotel Kensington on September 11th, the first night of the 1988 PLASA Light & Sound Show.

Entertainment was provided by the Ronnie Scott Quintet and George Melly with John Chilton's Footwarmers.

Photographs by John Offord



Some of the Laserpoint party hosted by Andy Holmes, Susi Christiansen and Simon Molseed.



Birthday greetings for PLASA chairman Peter Brooks.



Roscolab's Mike Hall with Bruno Dedoro of Coemar.



Maggie and Glen Scott of Scott Sound Systems get the jocks treatment from Eddie Fitzgerald and Phil Chapman.



John Lethbridge and Rod Bartholomeusz of Cerebrum with guests from Japan.



Tony Kingpley of Avitec with Alex Carter-Silk, and Pauline Smith (PLASA).



Allen & Heath's John Ball with lighting designer Tony Gottelier.



Roy Millington and Dave Smith of Cloud Electronics with Zero 88's Freddy Lloyd.



Peter Brooks addresses the first-ever PLASA annual dinner.



Cerebrum Lighting's John Lethbridge with Nick Searle of Lynx Lighting.



Pulsar and Clay Paky: Julio Savoldi, Ken Sewell, Paul Mardon, Pasquale Quadri and Luciano Savati.



Paul Butler of Mushroom Lighting with Jim Porter from Toronto.



Part of the 20-strong Avolites party with staff and guests from the UK and USA.



Iain Price-Smith (Multiform Lighting) with Paul McCullum of Wembley Loudspeakers.



After-dinner entertainment: George Melly takes the stage.



Keith Greenwood and Kevin and Heather Hopcroft of NJD Electronics.

ELECTRAFIT

Keeping fit with Lighting and Sound Equipment

John Offord takes a look at one of a new breed of Hi-Tech fitness centres.

Here is a health warning: The correct use of lighting and sound equipment can seriously improve your health'. And an added bonus is that it can be a painless process too.

All part of a new line of thinking that has at last reached across from North America, Hi-Tech fitness centres are now springing up across the UK, and they are providing yet another market for products manufactured for the entertainment lighting and sound industry.

In different venues they have different names, but the main idea behind the centres is that when you are jogging, lifting or cycling (or whatever) you are so completely in tune with the light/sound/video presentation that the pain, agony or sheer inconvenience of such pursuits is simply forgotten.

Conveniently for me, such a centre opened in late September in Eastbourne, just a couple of miles away from the offices of L+S. I went along to the privately owned Eastbourne Ball Park to take a look - not to take part. (It's enough of an exercise getting this magazine on the streets each month). Called 'Electrafit', an area in the complex previously used as a squash court spectator area has been equipped with all the latest fitness gadgetry plus a nice little lighting, sound and video presentation.

The company responsible for providing the package is Leicester Sound and Lighting, and they've now completed many similar schemes. I spoke to managing director Roy Parker.

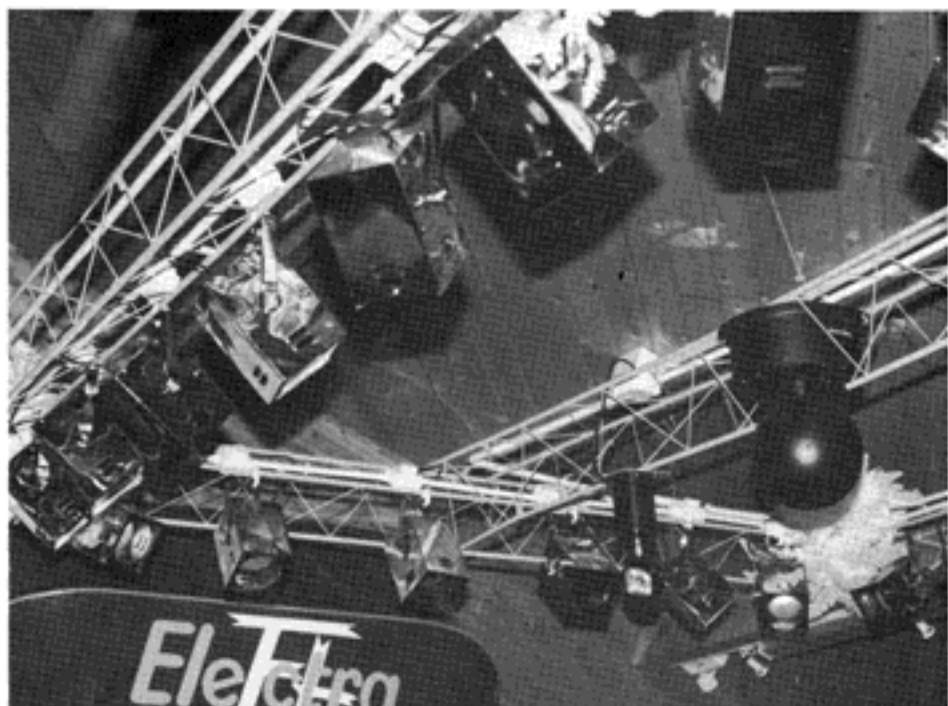
"We first started on these projects about two years ago when we were called in by the management of Granby Halls in Leicester," he explained. "Nissan Interna-

tional were supplying the keep fit equipment, and had conceived the idea with Granby Halls, but the lighting proposed left something to be desired. We pulled the whole project together, and since then we've completed similar schemes at the Maysfield Centre in Belfast, at the Harrow Leisure Centre and at the East Lanark Leisure Centre in Glasgow. Currently we have schemes in progress at the Gloucester Leisure Centre and at Colehill in Birmingham with more in the pipeline."

The growth in this area of business for Roy

Parker has been the result of recommendations from one leisure centre to the next, and is based on Leicester Sound and Lighting's ability to get the projects right. "All the job is on one contract, it's not too expensive, and we can often complete within a week or ten days," said Roy Parker. "They can see the quality when they look at our work, and that's usually a good enough recommendation."

In Eastbourne's case a local sponsor provided the video system, but usually Roy Parker covers the complete scheme, right through



One of the two lighting rigs at the Eastbourne Ball Park's Electrafit fitness centre.



Leicester Sound and Lighting's Roy Parker at the controls on Electrafit's opening night.

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Electrafit at the Eastbourne Ball Park - lighting and sound designed and installed by Leicester Sound and Lighting.

to building the counter/control units through to podiums and the supply of carpets.

In doing so he supplies equipment from a strictly observed list of several of Britain's major manufacturers of lighting and sound equipment, obviously choosing the equipment to suit the venue. The rigs are also built by the company, and the whole set-up for a project is manufactured and assembled and put into operational mode in a blank room at Leicester Sound and Lighting's head-

quarters so that installation time at the venue is minimised.

The range of equipment used is as follows:

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- Amplification **HH**
- Mixers/EQs **Citronic**
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Donna Bull, health club and gym manager at the Eastbourne Ball Park, pictured at the Electrafit controls.

For the Eastbourne Ball Park project speakers are Bose 30T's and at the control centre Citronic, Ice and NJD (Logic 8000) were prominent.

Each scheme is custom designed for the venue concerned, but by the use of top equipment coupled with professional and well thought out design and installation, the keep fit centre manager will have a presentation set-up that can run and run.

"We've had no breakdowns in the two years since we put in the first scheme at Granby Halls," said Roy Parker. "I believe we've looked at it properly from experience."

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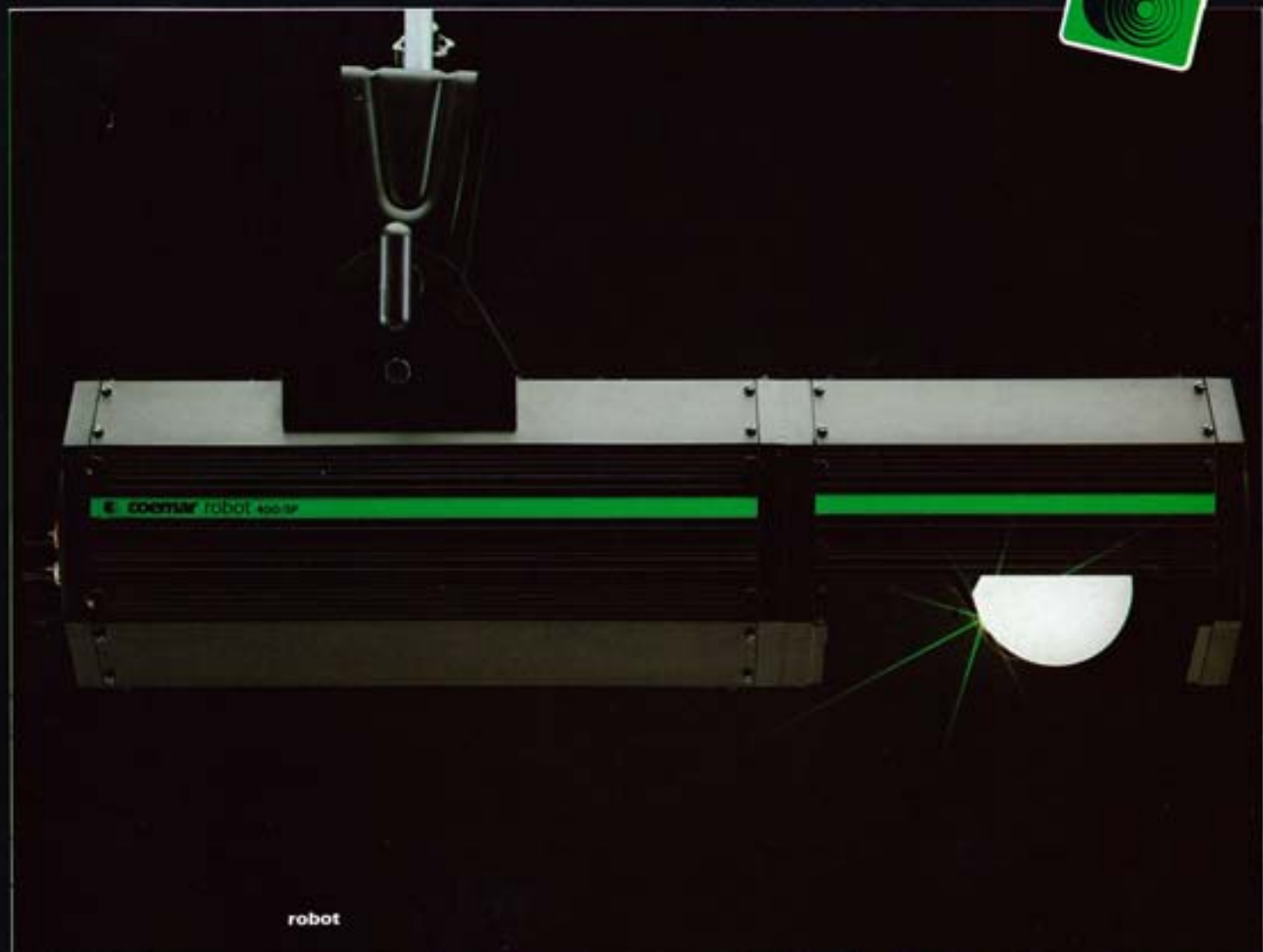
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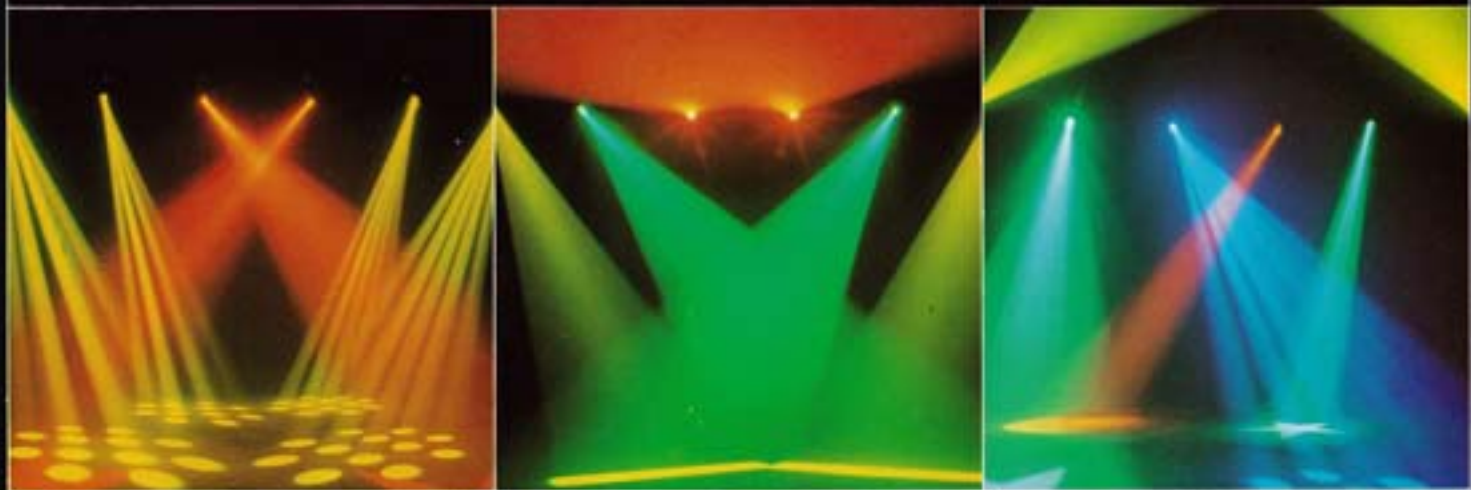
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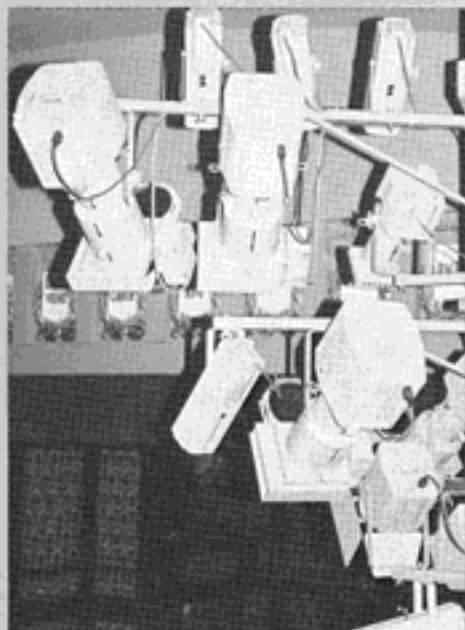
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Lighting the Stages of the World

L+SI IN FINLAND

John Offord looks at three venues in Tampere: the refurbished Tampereen Teatteri, the Tampere Hall under construction, and the new Tampere Workers Theatre. In Helsinki L+SI profiles leading lighting designer Ekku Peltomäki and his work.

Many of Britain's lighting and sound equipment manufacturing companies export well over 50 per cent of their production, but that is often as far as the story goes.

Having received an invitation from Fikret Saadetdin of TFP Markkinointi (CCT Theatre Lighting's distributors in Finland) to visit Tampere, I welcomed the opportunity of seeing where some of our equipment ends up. In this case it was a major installation of CCT lanterns at the newly refurbished Tampereen Teatteri in Finland's second largest city. And whilst in Tampere I also had the opportunity to visit other venues: the Tampere Workers Theatre and the magnificent Tampere Hall, now under construction

and due for a 1990 opening.

Tampereen Theatre

Tampere is one of Finland's most important industrial towns and a leading textile manufacturing centre, and for this reason it is often called the Manchester of Finland. With only 170,000 inhabitants (400,000 in the local area), it cannot be a direct comparison, and when I say the Tampereen Theatre is Tampere's equivalent of Manchester's Palace Theatre, you'll know what I mean.

Built in 1913, the theatre is attractive and functional and the recent highly expensive refurbishment has greatly improved all aspects - most particularly front of house and

backstage.

The 480-seat auditorium lacks the embellishments of the 19th century builders, and caught between theatre styles, hasn't the clean lines and spaciousness of more modern establishments. But it's what goes on on stage that counts, and no expense has been spared in providing more than adequate facilities for the major musical productions that are the staple diet of the Theatre.

One of 36 producing theatres in the country, and certainly one of the most successful as far as box office takings is concerned, productions run for as long as they can sell tickets. 'Sugar' has just finished a five year run, and the latest production, 'Me and My



The Tampereen Theatre, originally built in 1913, has just reopened after a major refurbishment.



Fikret Saadetdin of TFP Markkinointi (left) with Esko Roine, managing director of the Tampereen Theatre.



Chief electrician Olli Vanhatalo at the Helvar control desk, Tampereen Theatre.



Stage manager Markku Mäkelä at the Soundcraft desk.



Work in progress at the Tampereen Theatre.

Girl' opened on September 15th.

Equipment-wise, lighting control is a Finnish built Helvar system and new instruments all CCT apart from two Strand CSI 2000 followspots. (Some of the old equipment has also been retained - see lighting plan on page 53). Sound control is a British Soundcraft desk, and this wasn't to be the last one I saw in Finland!

The CCT lanterns, all painted light grey to blend in with the decor, include 22 Silhouette 2k profiles, 18 Silhouette 1k profiles, 14 Minulette 500/650 profiles, 12 Starlette 1k fresnels, 20 Colorsette semaphore colour changers, and 20 Starlette 1k floods.

Drama is a highly active pursuit in Finland, and under the control of the same management are no less than four other venues. In the Pikkuteatteri (studio theatre) in the same building I noted a Green Ginger control, and



Two groups of the specially painted CCT lanterns viewed from the stage (left) and from the balcony (right).



Refurbishment completed: the new-look Tampereen Teatteri, Tampere Finland.



A scene from 'Me and My Girl', the current production at the Tampereen Theatre.



The Green Glazer control in the studio theatre.

in the oldest cotton mill in Tampere, now converted to a variety of other uses, three more venues are situated, each having a mixed lantern stock interchangeable with the main venue.

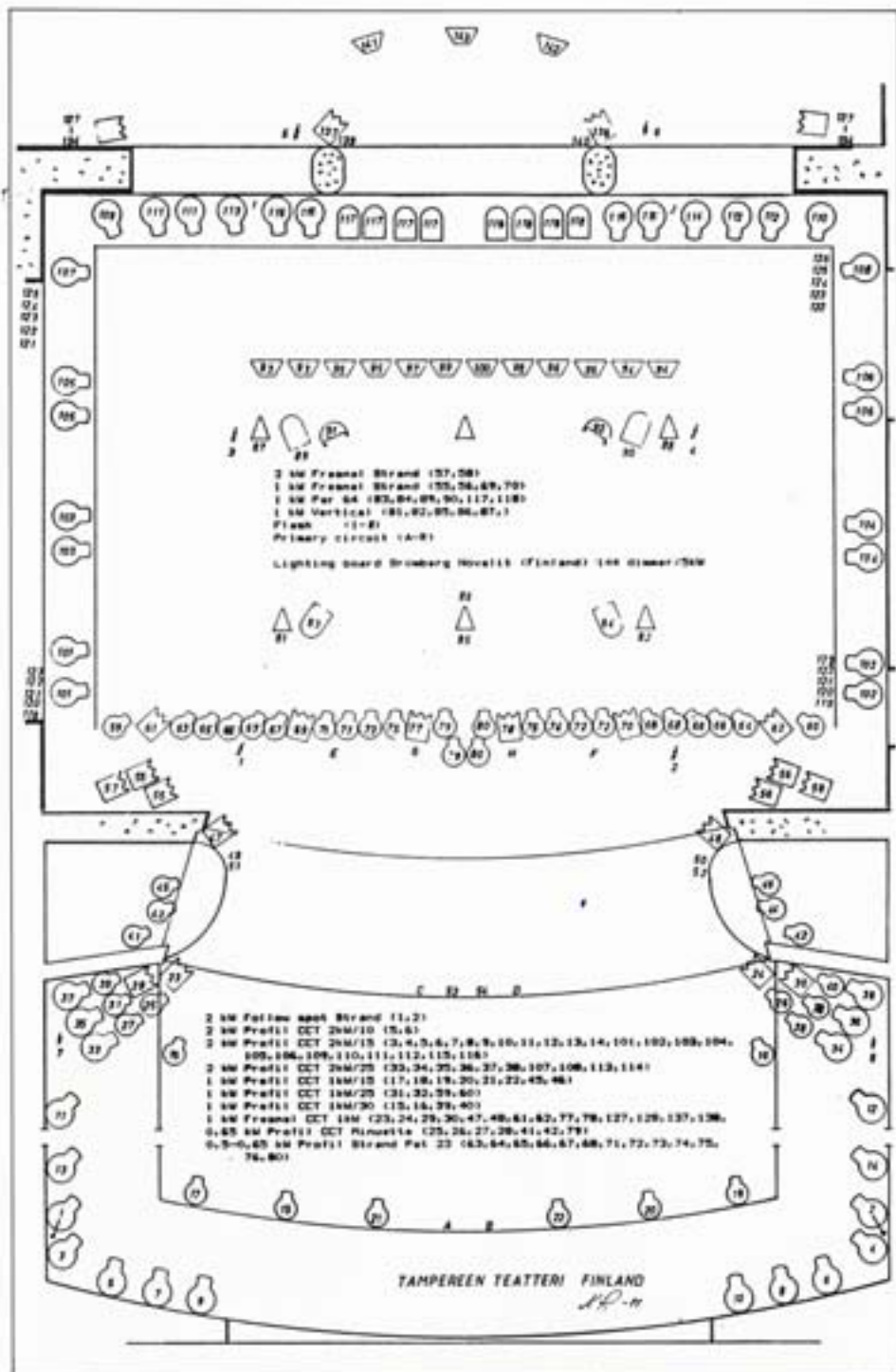
The new Young People's Theatre is a very smart complex, and Finland's first-ever TV programme was broadcast from the rehearsal studio where Pulsar and Studiomastr control equipment was prominent. Last, but not least was a dance studio.

Tampere Hall

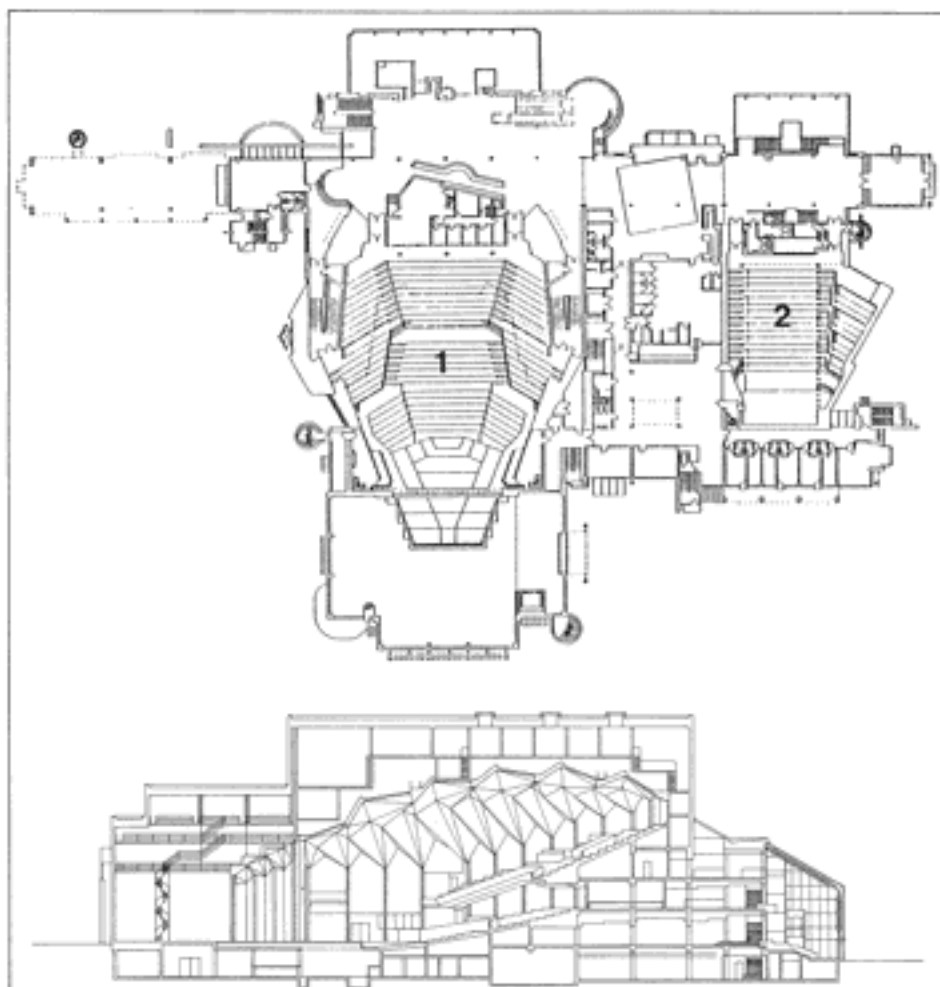
Due for a June 1990 opening, Tampere's new Concert and Congress Hall has now reached the 'recognisable' stage of construction. Situated in a parkland setting opposite the University, the acoustical requirements of the auditoria and the glass canopies of the foyers give the complex its shape and



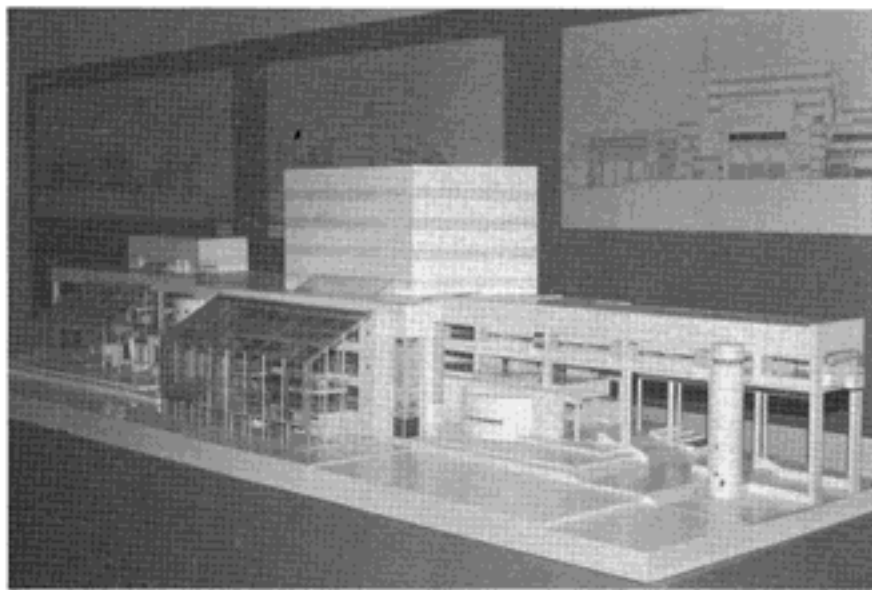
Riemo Putkonen, technical director of the new Tampere Hall.



A model of the interior of the new Tampere Concert and Congress Hall.



Top: a plan of the Tampere Hall complex with main auditorium (1) and the smaller hall (2). Above: a section showing the shape of the main concert hall. Below: a model of the complete complex.



character.

Designed to seat 1,870 for concerts, and with a variable acoustic system built-in, the main hall will have a 600 sq. metre stage, enabling the production of large-scale performances of music, choral works and opera, in addition to major conference and presentations which the management is now actively seeking.

Also in the complex is a smaller auditorium which will seat up to 518, and this has been designed for chamber music and small-scale musical performances. Again, the acoustics can be adjusted as desired by using a modifiable attenuation structure.

Lighting control equipment will be all Helvar with a 'Macro' in charge in the main

hall and a 'Pico' in the small hall. And Britain has lost out this time on the lantern side too, with the majority of units specified to be Ludwig Pani of Austria, with at least 200 1k and 2k units. Also from Pani will be two 1.2 HMI projectors and one BP6. I noticed a listing of 150 Pars on the schedule with no makers name, so maybe there's room for a bit of British equipment yet!

In the small hall, Pani equipment will again be to the fore, and in the rehearsal room a mixture of Pani, ADB and Strand units is listed, with another Helvar Pico in control.

Where Britain has scored is on the sound side where all the five mixers specified for the various auditoriums will be Soundcraft desks.

In charge of the acoustical planning for the venues is Alpo Halme.

Tampere Workers Theatre

TTT (Tampereen Työväen Teatteri), or Tampere Workers Theatre, is the city's base for creative drama. It was originally founded in 1901, and on the eve of the General Strike in 1905 was taken over by the workers' association who set up its constitution. Its aim was to "evoke interest in drama among the poor by performing plays that conform to their spirit".

The fact that the theatre is alive and well today, and as a theatre unique in Finland, is testament to the fact that the some of the original inspiration still survives. In 1985 a new 750-seat theatre was opened, with the original theatre, where Lenin once attended workers' meetings, now a 450-seat base for drama students' productions. Linked as one complex, TTT also has a 115-seat studio theatre and a rehearsal studio of the same size.

The new Tampere Workers Theatre is built in the simple and clean 'continental' style, and has a variable form auditorium complete with all the necessary hydraulics and technical equipment the set-up demands. Lighting control (again!) is a Helvar Macro with 420 circuits, and the majority of the 350 spotlights are Niethammer with eight remotely controlled. The heart of the sound system (again!) is a Soundcraft Series 2400.

TFP Markkinointi Oy

TFP Markkinointi Oy, owner Fikret Saadetdin, is the Finnish distributor for CCT Theatre Lighting, Roscolab, Gerriets, Haussmann, RDS (lamps) and the TFP staging system imported from Germany and assembled and finished in Tampere.

Fikret Saadetdin started the business in 1977 when he became Rosco's distributor and he later gained the distributorship deal with CCT Theatre Lighting. He also markets AVAB's manual lighting controls and is endeavouring to build up a spread of companies and products that spans all aspects of entertainment and staging. He is adamant that he will not duplicate any area of product range and will keep the number of companies he deals with down to these self-imposed limits. He feels that in this way he can promote a range of products without hindrance and any favouritism from one brand to another. TFP are now actively looking for companies manufacturing trussing, Pars cans, touring equipment and controls to fill the gaps in their range.

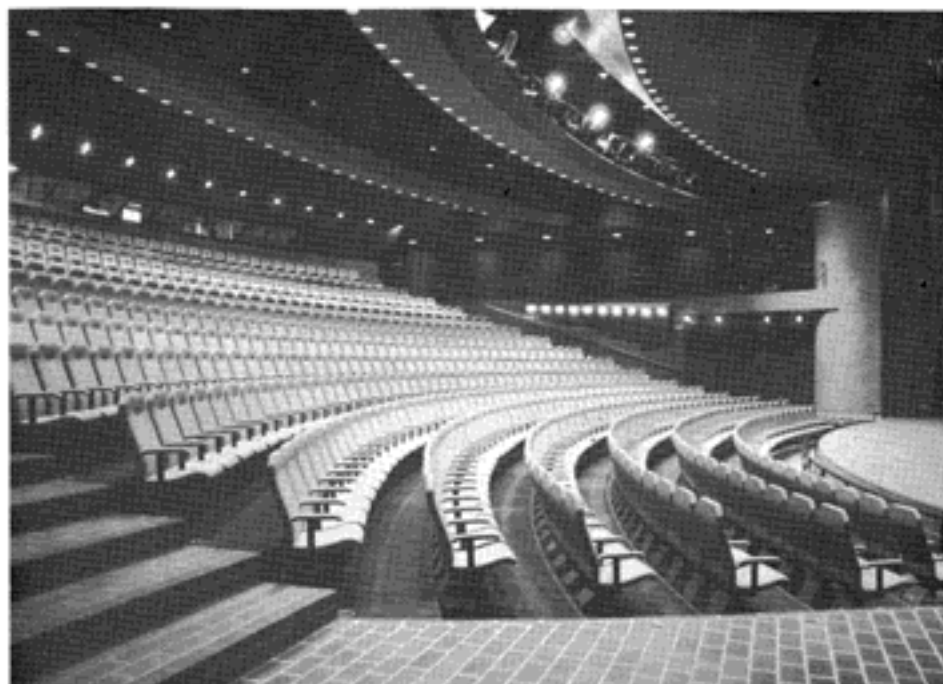
The company hold a continuous stock of CCT lanterns so that orders can be dealt with immediately, and they are imported from the UK in



The original TTT theatre is now used by drama students.



TTT's Kellariteatteri seats 115.



The new Tampere Workers' Theatre, opened in 1985, seats 750.

kit form before assembly and adaptation to Finnish requirements. TFP's main business is concentrated in the theatre market - a large one in Finland, where, like Norway, 'every community should have one' applies to theatres, cultural and community centres.

As far as British companies are concerned, Finland is also an important trade route through to the USSR, and Fikret Saadetdin pointed out that there are many other areas of the Soviet Union where markets are available and not part of the usual Moscow and Leningrad orbits of activity.

"British lighting products are very competitive against German and other European products -

and we always get a good reaction when we specify British goods because of their reputation and also for the very high reputation of British theatre as a whole. Also your sound equipment has an excellent name," said Fikret Saadetdin.

He warned that competition will get harder and harder and told me that British products must continue to keep ahead. "You must keep busy with new designs and keep ahead of the opposition," he continued.

TFP's next major contract will see over 100 CCT lanterns installed in May 1989 in a newly converted theatre at Valkeakoski, 30kms south of Tampere.



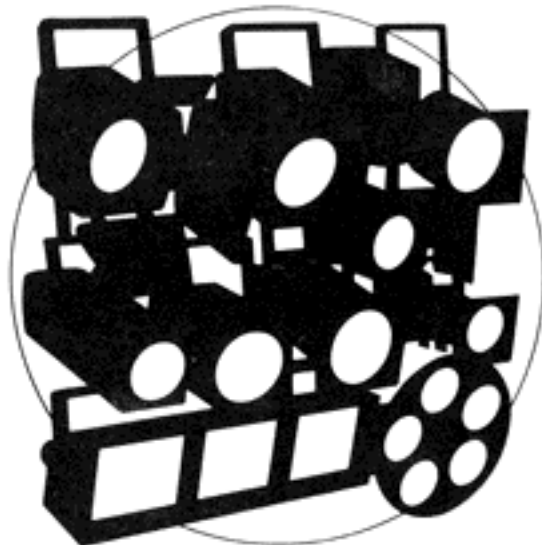
Sound engineer Pekka Siltala at the Soundcraft Series 2400 desk.



Imposing frontage of the new TTT Theatre.



TFP-MARKKINOINTI OY



supply of a complete
range of CCT theatre
lanterns to the
newly re-opened
TAMPEREEN TEATTERI
Tampere, Finland

Also distributors in Finland for
ROSCOLAB - GERRIETS - RDS
HAUSSMANN - PODESTBAU (staging)
AVAB (manual controls)

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Tel: (931) 113933 Telex: 22522 Telefax (931) 450970

Lighting Design in Action from Ekku Peltomäki

Leading lighting designer Ekku Peltomäki was last featured in L+SI in April 1987 when we covered his lighting design for the production of 'Cats' in Helsinki. Having heard that he'd taken a tour of Porgy and Bess into the USSR during the summer, I was eager to find out about the production and also to come back with news of any other projects that might be of interest.

It so happened that Ekku Peltomäki has had a very busy summer, and I ended up flying out of Helsinki with rather more than I'd bargained for . . .

Porgy and Bess

"It didn't seem extraordinary to be assigned the lighting design for the concert version of Porgy and Bess, but taking the production to the Soviet Union and its realisation using Soviet lighting equipment was a special challenge," Ekku Peltomäki told me.

"Our planning team made a field trip to Tallinn (Estonia) and Moscow in good time before the start of the production, and the Castle Hall in Tallinn appeared good for the purpose. The lighting equipment originated mostly from Eastern Block countries, and as

such was unfamiliar to me. The floodlights were large, mostly Pertel 1k and 3k plano convex projectors. They also had a few 2k Pani profiles and 10 Pani 1200 and 2500 HMI's. Control was a Zut manual 240 channel board with 12 preset masters.

"I realised during advance visits that the equipment would be unfamiliar to me so I asked the producer to arrange permits for the Tallinn lighting masters (Aare Paumer and Leo Lööke) to come to Helsinki for the first night of the production here, and afterwards to travel with us to Tallinn and later to



The Helsinki Ice Hall production of Porgy and Bess: the funeral scene.



Helsinki: Porgy and Bess - the love scene.



Helsinki: showing the 'graffiti' backdrop and lighting rig.

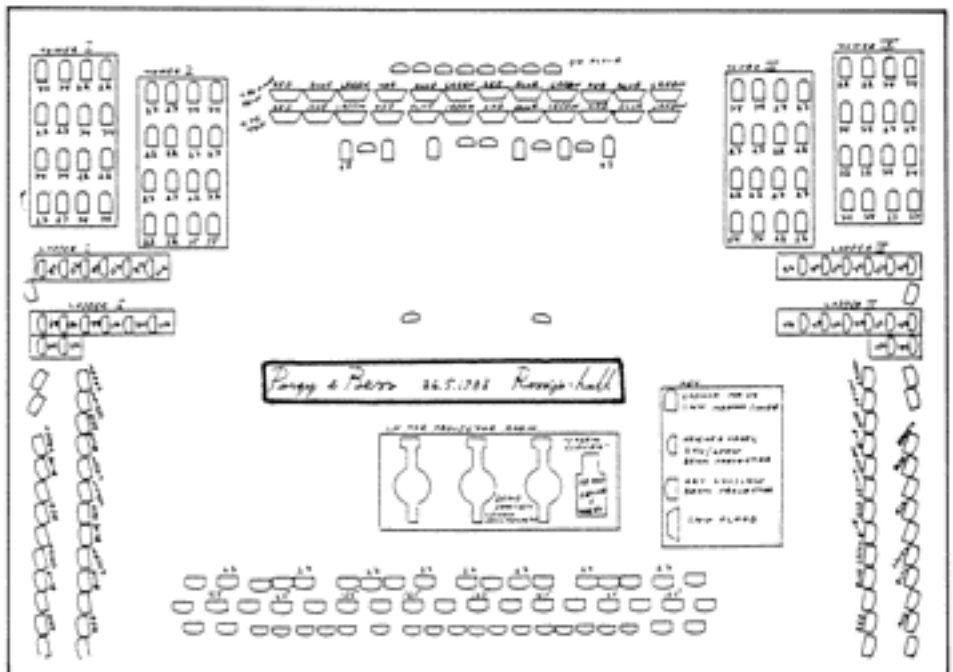


Ekku Peltomäki

Moscow in the capacity of interpreters and experts on the show and its equipment. Unfortunately, due to Soviet bureaucracy they were not allowed to come to Helsinki, but they did accompany us to Moscow where they were a great help to us.

"The treatment we received in Tallinn was friendly, and the presentation of equipment was open and inspired our confidence in spite of the obvious deficiencies. Communication was easy, as the Estonians spoke Finnish.

"The Rossija Hall in Moscow was considerably smaller than the venue in Tallinn.



Lighting plan for the Rossija Hall, Moscow.

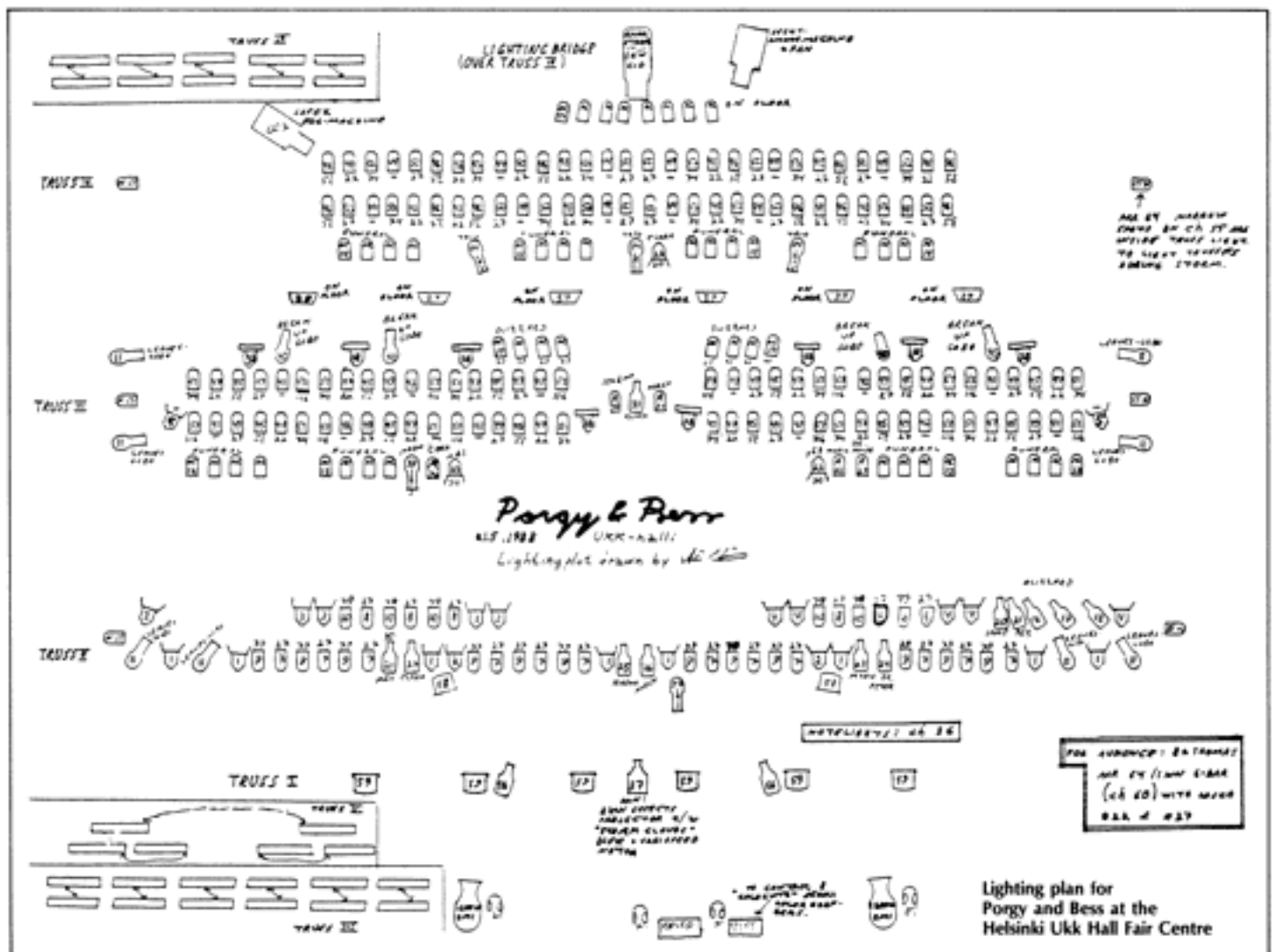
The lighting equipment consisted of similar floodlights, but there were also 100 Coemar Par 64's in addition to a few Reiche & Vogel low voltage lanterns. The control was computerised and manufactured in the East, but with ample Western influence."

Ekku Peltomäki explained that colour reproduction ability in the USSR is poor when compared to (say) Rosco, and the only equipment they took with them on tour was colour plus smoke and wind generators.

"The treatment we received in Moscow

was cool and bureaucratic," continued Ekku Peltomäki, "however, we had received sufficient information about the lighting equipment. The visit was impaired by communication difficulties as no technician spoke English and we were using interpreters who could not translate the technological terms.

"In Tallinn we had time to rehearse the lighting for two days and nights, but in Moscow we had to work to a much tighter schedule and there was much more bureaucracy involved. In Tallinn we could



Lighting plan for Porgy and Bess at the Helsinki Ukk Hall Fair Centre



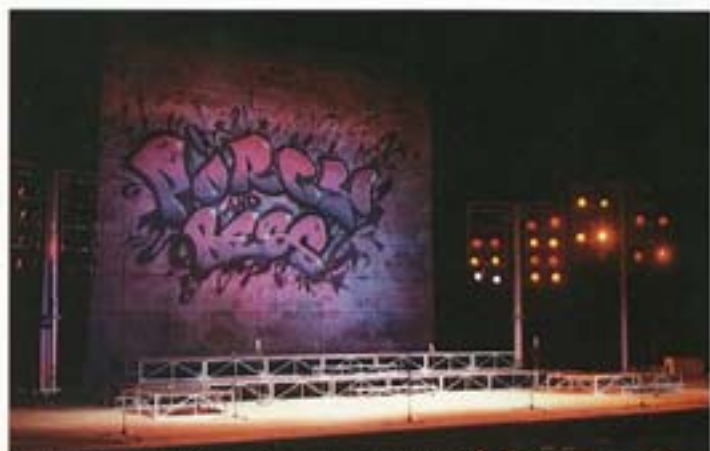
A scene from the Tallinn production of Porgy and Bess.



Leo Looke, Aare Paumer and Ekku Peltomäki (right) in Tallinn.



Tatjana Sokow (in background) prepared and set all cues ready for Ekku Peltomäki in Moscow.



The Moscow production: no profile spots were available, only Coemar lanterns.

work when we wanted, whereas in Moscow unsurpassed problems were caused by just one hour of overtime.

"The opera was performed as a concert version, and each of the halls seated from 3000 to 4500 people. The central feature of the bare staging was a graffiti comprising the names of the vocalists. Because of the reduced stage setting, my main duty was to support and emphasise the contents of the scenes with lighting, and I used many 1k Par 64 and Par 64 ACL lamps. I also tried to take into consideration the accents of the music in a manner used in popular music concerts, using strong colours. In fact, colour was the central factor in the lighting. From the comments we have received, we certainly made

a success of the production as far as lighting was concerned.

"The greatest difference between the concerts in Helsinki and in the Soviet Union was the fact that in the USSR I did not reach the same intensity of light as I did here in Helsinki. This was mainly due to the inefficiency of the Soviet equipment, and the one reason why the Helsinki performance was by far the best as far as the lighting was concerned."

EQUIPMENT SCHEDULE

Helsinki Fair Centre

Lighting control: 60 channel Celco Series 2, 30 channel Celco Series 2, 72 channel Avolites dimmers.
Lanterns: 258 x Thomas Par 64/1k, 40 x Thomas Par 64 ACL, 30 x 1k profile spots, 30 x 1k fresnels, 6 x Thomas

floods, 8 x 2k fresnel spots.
Follow spots: 2 x Paris 1200 HMV (FOH), Strand 1k CID (truss).
Effects: 1 x Paris 2k effects projector, 8 x ColorWiz, 1 x Safex dry ice machine, 1 x smoke machine, 1 x 27" fan.
All trussing pre-rigged Thomas; all chain hoists 1 ton Verlinde; hoist control Avolites.
(All equipment supplied by Ekku Peltomäki Oy)

Tallinn

Lighting control: 240 channel manual desk with 4 presets, 24 channel preset manual board for vertical striplights (4 colours), dimmers made in USSR.
Lanterns (FOH): 85 x 1k and 3k Pritel PC made in USSR; 14 x 2k Paris remote controlled profiles with colour change.
Lanterns (on stage): 30 x 1k and 3k Pritel remote controlled pan, tilt, focus PC type; 150 x Nierhammer low voltage floorlights.
Follow spots: 4 x Paris 2500 HMV.
Effects: 1 x 5k effects projector made in USSR; 2 x 4k Paris HMV effects projector.
(All lighting equipment except smoke, fan, gels and intercom were local).

MOSCOW

Lighting control: 256 channel computerised memory desk made in Eastern Block (no name); dimmers made in USSR.
Lanterns (FOH): 70 x Coemar Par 64 1k and 250w, 105 x Reich & Vogel type 24v/1k beam projectors made in USSR.
Lanterns (sidelines): 28 x R & V type 24v/250w beam projectors made in USSR.
Lanterns (Backlights): 24 x 1k cyc-lights made in USSR.
Follow spots: 3 x Deko 3k/160v Xenon follow spot made in USSR.
Effects: 1 x 10k R & V type effect projector made in USSR.
(All lighting equipment except smoke, fan, gels and intercom were local).

CREW

Helsinki:

Designer and lighting control desk: Ekku Peltomäki
Stage manager: Tom Ahlberg
Followspots: Jori Polkki and Juuso Jäppinen (FOH); Ari Virtanen (truss spot)

Tallinn:

Designer and lighting control desk: Ekku Peltomäki
Lighting desk assistants: Aare Paumer, Leo Looke
Stage manager: Tom Ahlberg
Followspots: Ari Virtanen, plus Arneli, Ravi and Laine (local)

Moscow:

Designer and lighting control desk: Ekku Peltomäki
Lighting desk assistants: Tatjana Sokow, Alexis Demerzov
Stage manager: Tom Ahlberg
Followspots: Ari Virtanen, Aare Paumer, Leo Looke.



Another scene from the Ebony Theatre of New York production of Porgy and Bess in Estonia. Directed by Hope Clark, sets and costumes were by Seppo Nurminen. The role of Porgy was played by Bruce Hubbard with Rita McKinley as Bess.



Two scenes from 'Light Art'.

Light Art

Possibly the major artistic event in Finland this year will prove to be 'Sini Ristit', which took place at the Retretti Arts Centre at Punkaharju, a 1000-seat venue which is underground, and cut out from solid bed-rock. Ekku Peltomäki was asked to create 'Light Art', and in the first instance his brief was to simply light the rock surfaces.

"Music had to come into it," he explained, "and we ended up producing a visual and sound spectacular that lasted for 4½ minutes. It took place every hour, and people kept coming back to see it again.

"I used a combination of the old Finnish traditions in poetry and music coupled with the latest technology. A Celco control was used to control both the lights and lasers, and my son Jakko Peltomäki devised the use of the Celco board's facilities to achieve this."

The event was such a success that it will be repeated again next year. "It will be bigger and better next year," promised Ekku Peltomäki.

Helsinki Festival

Another event that will be bigger next year, following its first presentation this year, is the laser/light show to launch the annual Helsinki Festival. "I was asked to produce something special for the opening," explained Ekku Peltomäki.

The result was a four minute light show to the music of 'Finlandia', and the Government Palace in the centre of Helsinki provided the stage. Four 8 watt argon lasers were involved, 33 CID daylight spots were used to light the building, 124 aircraft landing lights acted as footlights, and 260 Par 64's provided the colour wash. Sound was a JBL system with a Yamaha mixer and effects were recorded on an 8-track Tascam. Le Maitre pyrotechnics provided the smoke effects.

"Next year it will be bigger," said Ekku Peltomäki, "and we have already arranged to stop the traffic."

Hesperia Discotheque

As if to prove that there is no area of entertainment untouched by Ekku Peltomäki and his company, I was taken to see a new discotheque at the Hesperia Hotel in Helsinki - well, nearly new, because it still had the contractors in, and was seven days away from opening.

The equipment mix looked interesting, so I requested urgent pictures of the venue to go within this feature. The result you can see on this page - a highly individual discotheque that has the Peltomäki hallmarks of both power and subtlety.

There are four Thomas 3m x 2.8m black



Opening presentation for the 1988 Helsinki Festival.



The latest from Ekku Peltomäki - the night club discotheque in the Hesperia Hotel, Helsinki.

truss boxes, each with fibre optics and two Clay Paky Sapphire units. They were designed in conjunction with Mervyn Thomas of James Thomas Engineering, and each truss box has four 500kg chain hoists controlled by a Powerlight custom-built 16 channel controller.

Further lighting equipment includes 8 Col-

orWiz units and 5 Clay Paky Golden Scans. Elevators are also by Clay Paky. There is a total of 256m of neon and 320m of tubelight. The programmable light floor was custom built by Disco Consulting of Helsinki and covers an area of 64 sq. metres.

Lighting control is in British hands with a Celco 2 Major and five Zero 88 Rackmaster

260's.

The overall design of Hesperia was by Ekku Peltomäki, and the company also supplied and installed the Thomas rig and motor controls and the ColorWiz units. MS Auditorion supplied other lighting and the sound equipment, and Disco Consulting and Suomi Soundline supplied and installed the fibre optics and Clay Paky equipment.

Loudspeakers are all Electro-Voice with the addition of MS Auditorion B215 sub woofers. Power amps are QSC, and signal processing equipment includes EV, ART and Ashly. DJ booth equipment consist of a Citronic MPX 9-31 mixer, with an EV mic mixer and various Oxmoor, MS Auditorion, Technics and Denon equipment.

Ekku Peltomäki

Ekku Peltomäki's operation has now been running for 15 years, and whilst the company has a broad range of hardware for its productions, including Celco, Avolites, Thomas, CCT, ADB, Strand and Pani equipment, and is a major business in its own right, his personal love is lighting design.

In the formative years he spent much of his time outside Finland, largely on the West Coast of the USA, soaking up ideas and techniques.

"In the seventies the USA was well ahead," he explained, "but England, and also France, are now very much more important, and basically I follow only them. Music is my heart, my centre point, and in this respect



Country retreat: Ekku Peltomäki and his 2000-seat open air theatre.

England is the most important place. Things now come from London first, before Broadway. Las Vegas, for instance, is really just as it was 10 years ago. Nothing has happened there."

With connections that are now international and knowledge to match, Ekku Peltomäki is in high demand for major special events both in Finland and abroad. His list of 'credits' is, as you would imagine, enormous, and covers the whole spectrum

of entertainment, from opera through to product launches and rock shows, his personal love. He admits to enjoying the power of rock music and its attendant lighting.

He thinks and acts on the grand scale. At his country home 100km west of Helsinki he built a 2000-seat open air theatre, complete with stage, seating, lighting structures and dressing rooms. And events take place there, of course.

But that's another story . . .

Major Finnish Importing Companies

CARLO CASAGRANDE OY

Helsinki
Tel: 640711
Strand Lighting (theatre products)

DISCO CONSULTING OY

Helsinki
Tel: 714750
Databeat Digital Music Systems
London Acoustical Developments
Oxtron Digital Systems Ltd

DSJ COMPANY, DISCO SERVICE OY

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Tel: 487033
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Kremsa
Laser Systems
LED
Lee Filters
Lightwave Research
Optikinetics
Pulsar
SLV
Trilite
Zero 88

STUDIOTEC

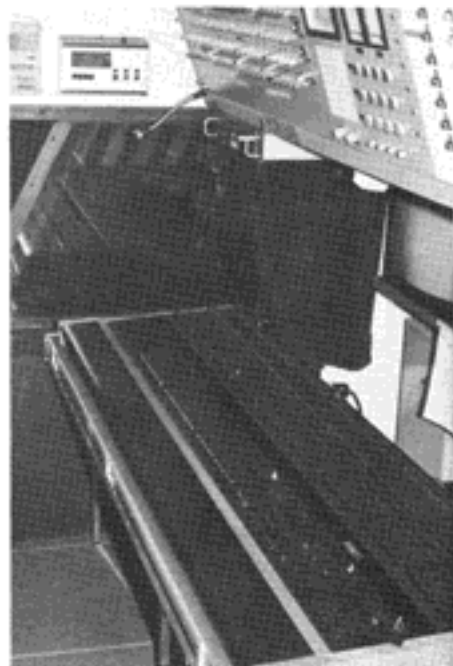
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Audio Development
Audio Engineering
Audiokinetic
Dolby Laboratories
DBX
Lexicon
Mayer Sound
Otari
Rane
Solid State Logic
Soundcraft
Symetrics
Tannoy

STUDIOVOX

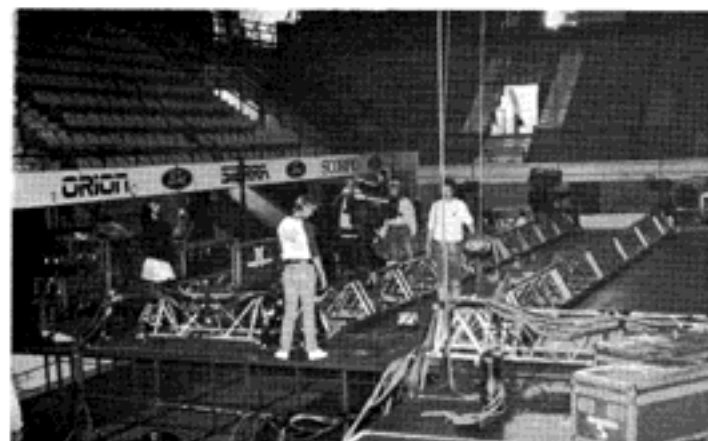
Helsinki
Tel: 5623411
JBL
Tascam

TFP-MARKKINOINTI OY

Tampere
Tel: (03) 113933
AVAB (manual controls)
CCT Theatre Lighting
Geniets
Hauseman
Podestbau Kleu
RDS
Roscofab



A Celco Series 2 90 in the lighting control room at Finlandia Hall, Helsinki.



Meteorites Productions crew prepare for a concert tour performance of 'Kiss' in the Helsinki Ice Hall in September.



A Modular Design Concept for Theatre Luminaires

L+S invited Joe Thornley, development and design manager of Lee Colortran, to describe the birth of the new Windsor range of theatre luminaires.

Lights, lanterns, fixtures, units, instruments, luminaires and fittings are used to describe the tools of our trade, depending upon which part of our industry you practice lighting for entertainment.

Theatre must lay claim to being the first in the field of lighting for entertainment. On the 10th October, 1881 the Savoy Theatre in London opened its doors for a performance of 'Patience' by Gilbert Sullivan and for the first time electric light transformed the whole art of stage lighting. A new breed of manufacturer emerged out of the necessity to make the lanterns, and with it came a new breed of stage lighting man - the lighting designer.

The claim for second place goes to the film industry. In the 1920's, and again out of necessity, the film moguls were forced to invite manufacturers to design lighting fittings as they had now become known. They were also known as instruments or fixtures - the names given to them by the American branch of the industry in Hollywood. This venture into lighting manufacture was a 'whole new ball game'. Units of enormous power were required to satisfy the very slow speed of the early film stock when used in a studio, and equally high levels were required when shooting in daylight to try to balance the sun in areas of shadow.

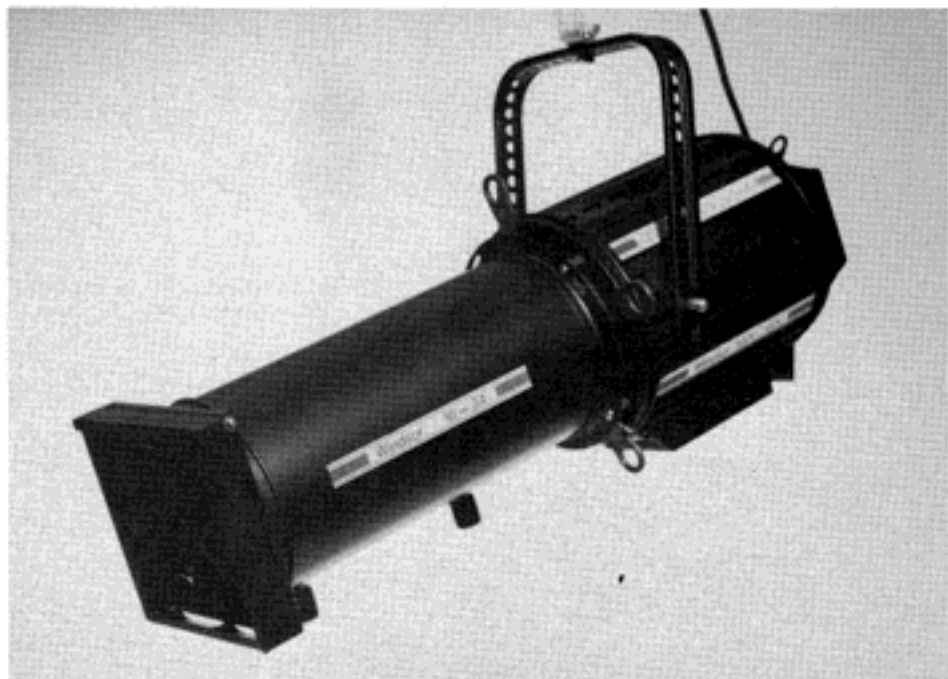
There was nothing in the theatre armoury that could be used, so a whole new range of arc lights and incandescent instruments were developed, and with them a completely new breed of lighting man for the film industry.

Television entered in Act 3 when all the hard work had been done, and started up with a hotch-potch of luminaires (as they were now called by the elite of this new form of entertainment) borrowed from both theatre and film. As new cameras were developed and their sensitivity improved, the television studio settled down at lighting levels well below film requirements and equally well above the established levels used in theatre. So manufacturers were called upon once again to design purpose-built luminaires for television, and as you have guessed, a third breed of lighting man was born, specialising in television, and known as the lighting director.

Anyone outside our industry could be forgiven for thinking that a lighting man could work between the three different disciplines of film, theatre and television, turning his hand to the best paid and most interesting jobs. This, of course, is near to heresy, with only a few brave men with the courage to ply their art in the other's domain.

So it is with the manufacturers of lighting equipment, each one starting out when a particular user required new fixtures in one of the three disciplines and tending to stay in that field, never daring to cross-pollinate with the other two.

Having given this background of our industry I must point out that I have never had the courage to try to light in any one of the



The Windsor 16°-34° profile.

three areas! But I have spent the past 30 years in development and design with the three major manufacturers of lighting equipment for film, television and theatre. And I am able to say that I have observed all three lighting techniques and feel that I appreciate the difficult problems encountered in all three.

It was therefore an exciting prospect when Lee Colortran asked me if I would be interested in designing a complete range of theatre lighting. Lee, who have been well established for many years in the manufacture of lighting equipment for film and television, had now decided to complete the circle and manufacture luminaires for theatre.

On 'Day 1' I had a large sheet of paper with 'ideas' written across the top - but otherwise completely blank. It was difficult to establish an approach that other manufacturers had not previously developed, and it was pointless to go on to the market with a 'me to' range just to be told 'so what'.

Having listened to the lighting men of the theatre for many years I had a good idea of what they wanted, and the price that they would expect to pay in an established market. We therefore had to come up with a design that would offer more features and more flexibility and at a price they were accustomed to paying.

The first move was to cross out 'ideas' and write across the top of the sheet 'Wish List'. In this way I hoped that we could actually express all the wishes between starting to build a light and the lighting man using it. We had to find a common thread whereby we could all benefit, and add to this the features that have been most commonly asked for by the user. Then we could start to design.

I had covered phase 1 of listening to the

requirements of the lighting man over the previous years, so I could pass to phase 2 straight away, working my way back along the chain from the user to the salesman.

The most common request from the sales force was to have the complete range in stock at all times in large quantities so that the salesman could make a complete package without waiting for products to be made. That was a tall order because of the cost implications of an enormous warehouse and the high investment of the stock on the shelf.

The next port of call for phase 3 was the factory, and to find out the main problems in manufacture. Without exception the cry was 'lead time'. For those of you that are fortunate enough not to be involved in the manufacture of luminaires, lead time is the period required between ordering materials, machining them, and making sub-assemblies before the final product can be assembled. Quote: 'The sales are always asking for the impossible immediately or they will lose the order' and 'Why don't they forecast their requirements in advance so that we can make it and put it in the warehouse'.

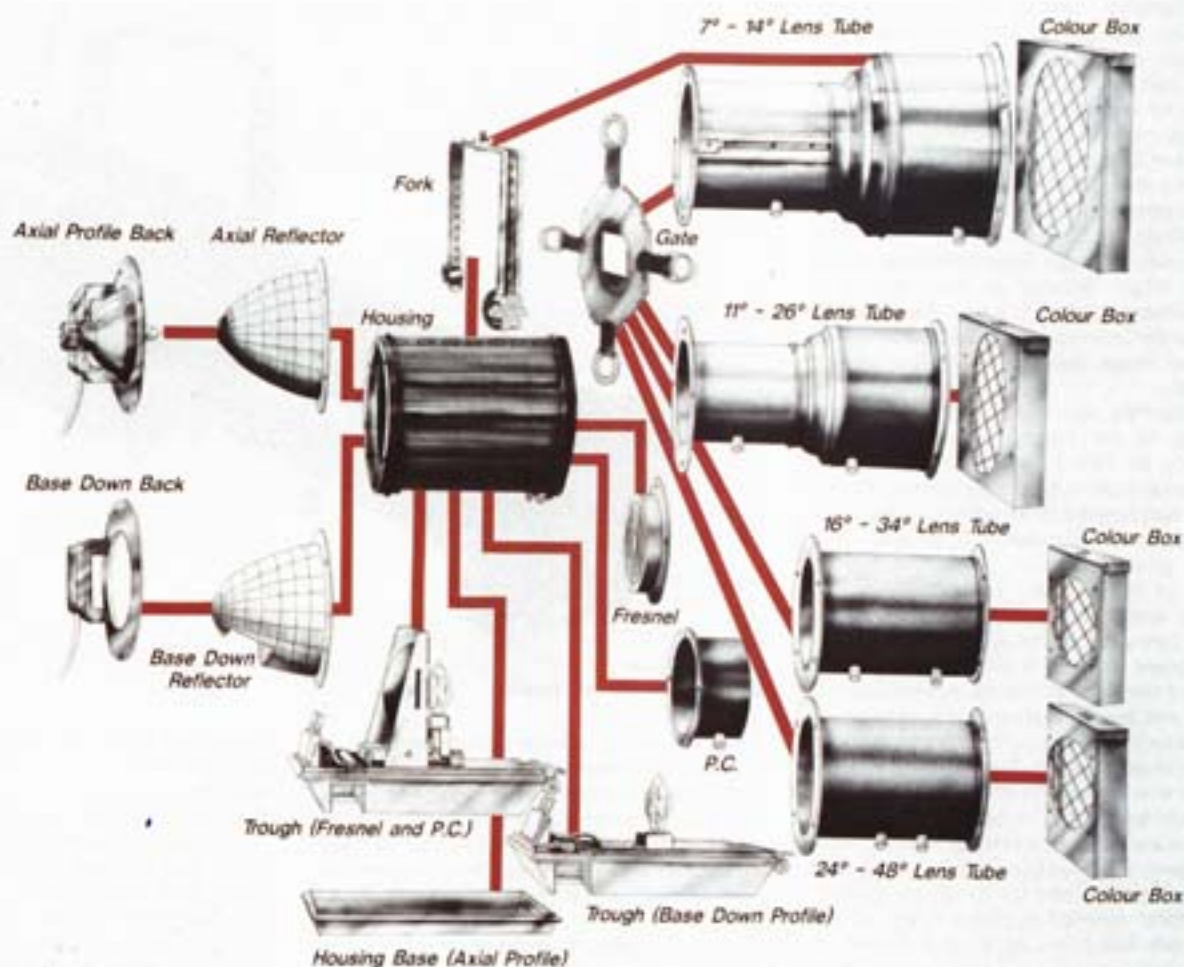
Answer: 'Because the cost would be passed on to the customer, and this would make the product too expensive for the market'.

The common thread we were looking for was starting to emerge.

Utopia, apparently, would be:

For a salesman to be in the customer's theatre discussing his potential order for delivery in two days time, complete and without exception at the normal price that he has been accustomed to paying, the salesman picks up the telephone to the factory, reads out the complete list,

New modular design concept for theatre luminaires



Double skin housing gives rigid but lightweight unit with excellent ventilation.

Rotating gate and P.C.

Front and rear focusing on the Fresnel

Mains connector in the handle - no plugs and sockets to break.

Luminaires electrically disconnect automatically when opened.

Windsor meets all European safety standards.

requests delivery in two days, and receives the reply 'what is the delivery address?'

If we could make a set of building bricks that could be put together in a few minutes using common parts it would seem to be the answer.

We would need: a common housing on to which we could put the front of our choice, a fresnel or P.C., or the choice of four variable beam profile lens tubes; a back that would accept an axially mounted lamp or a stan-

dard back when required; an attachment to the base that would provide the lampholder and reflector when used as a fresnel or P.C.; and an arrangement to fit the required lamp for a profile with the ability to change the lampholder position to accept a 1000 or 1200W lamp at 120-220-240v.

The benefits were immediately obvious. We could manufacture large and economical batch runs of the separate modules and hold them in the factory waiting for the sales force to call off their

requirements at a moment's notice. We could then select the combination of modules required, perform a simple assembly task and the request would be satisfied without the capital investment of finished equipment stock or a warehouse. The customer would get what he wanted when he wanted it, with the added advantage of being able to purchase any one or all of the modules. He also had the choice to affect instant repairs or change the mode of the luminaire to any other in the range - or

he could order any one of ten modules completely assembled.

If the customer were a rental house, the advantages would be enormous. Sod's law will often dictate that if the next job calls for 22 of a particular unit, you will find 20 in the rental stock. It would now be a simple task to convert two of another type and complete the job.

In addition to this, all parts of the Windsor range have been made to accept 120, 200 or 240v lamps so that the luminaires can be used anywhere in the world at any voltage, and with the confidence that all known safety standards have been adopted in the design; in particular the new IEC 598/2/17 which has been accepted by 23 participating countries.

The new range was launched at the Light and Sound Show 88 in London on the 11th September, 1988.

The Windsor Range

Comprising a fresnel, PC, and four zoom profiles, the Windsor range is modular in design. The six units can be permuted with combinations of low and high voltage and axial profiles as required, giving 16 different luminaires that can be assembled from 15 components.

Companies stocking the Windsor range can provide exactly the luminaire required from a relatively small stock of modules, and users can change a luminaire to a different model simply by purchasing the extra module when required.

The range has a number of features, including:

- Double skin rigid housing, giving a strong and lightweight housing with excellent ventilation characteristics.
- Front and rear focusing on the fresnel and PC
- Mains connector in the handle (no plugs and sockets to break)
- Rotating gate
- Interchangeable lens tube
- Quick and simple change from 1000W to 1200W
- All units automatically disconnect electrically when opened.

Because of the modular design and construction of Windsor models, repairs can be quickly and easily made in situ by simple removing the module involved.



Jim Pollard, managing director.



Joe Thornley with Windsor range modules at the PLASA Light and Sound Show in September.



Luminaire production at Kearsley.

Lee Colortran UK Locations

Lee Colortran International has three principal manufacturing bases in the UK: at Thet-

ford in Norfolk and Kearsley near Manchester for luminaires and lighting control equipment; and at Andover in Hampshire for the manufacture of Lee Filters. The company also has sales offices, with shops, at Eccles,



Haydn Edwards, sales director.



Steve Hall, head of marketing.

Manchester, and at London and Nottingham.

The Eccles site is headquarters of the company's sales and marketing activities in the UK, under sales director Haydn Edwards, and head of marketing Steve Hall. A showroom and shop on the site display the wide range of Colortran products and customers may purchase consumables such as Lee Filter material and replacement lamps over the counter. As Eccles is also the UK warehouse and export despatch centre for the company's products, large stocks are always on hand.

Lee Colortran Lighting Control Products

Over the past two years Lee Colortran has developed an entirely new range of dimming and control equipment for the theatre market. The Master series of dimmers and control desks offer budget-priced dimming and control for the theatre and education markets.

The PowerMaster dimmers and accessories made their debut at the ABTT exhibition earlier this year and provide the user with an economical and unique method of building a dimming system. Consisting of dimmer modules, dimmer control panels, dimmer packs and racks, PowerMaster is designed to be used in conjunction with Lee Colortran's MonoMaster, BiMaster or TriMaster control desks to suit individual customer needs. PowerMaster modules can either be mounted into packs or racks, depending upon the size of the dimming system created and the environment in which it will be used.

MonoMaster, BiMaster and TriMaster are compact and economical control desks which control 1, 2 or 3 scenes respectively. The top-of-the-range TriMaster also features Scene A, B and I Masters, Flash button with Flash Master, Grand Master and blackout switch, master mode switch for exclusive control of Scene I, 0-300 second split fade time controls, and high resolution LED Fade progress bar graphs. A fade mode switch gives dipless crossfades with the I Scene and dimmer status indicators on TriMaster show tripped, fault and overtemperature.

For larger, professional theatre applications, Lee Colortran has a very advanced range of memory control systems, including the Prestige series. The Prestige 1000 control desk includes amber CRT monitor and controls up to 200 dimmers on up to 100 channels. Up to 200 cues and groups may be recorded and a host of other features are included. Prestige 2000 is provided with a colour monitor and controls up to 800 dimmers on up to 400 channels and up to 400 cues and groups may be recorded. Automatic back-up battery power supply protects information in the event of power failure. Prestige 3000, which has twin colour monitors, controls up to 800 dimmers on up to 400 channels and up to 400 cues and groups may be recorded. Options for Prestige 2000 and 3000 include a hand-held



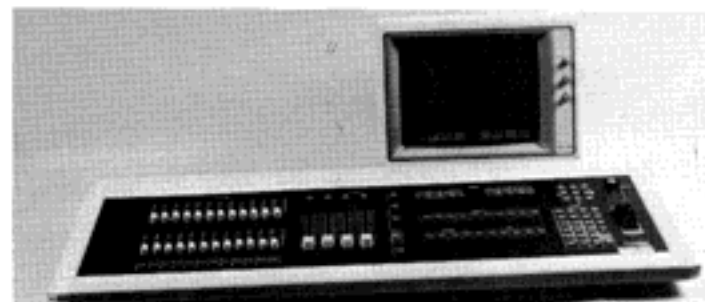
Lee's Eccles warehouse.

remote control and the remarkable Magic Sheet designer's remote.

Magic Sheet is an electronic tablet and stylus which enables designers to access all the features of the main Prestige console at a remote location, giving the opportunity to plan, plot and review lighting designs from up-front. The designer can literally sit where the audience will sit and create and check lighting effects from that perspective, instead of rushing between lighting control booth and auditorium to see how things look.

Lee Colortran has also developed its own range of plug-in dimmers designed to work alongside memory control desks for larger

theatre and professional TV applications. EDS - Economic Dimming System and IDS - Intelligent Dimming System are both modular in concept and can be accommodated in racks if system size dictates. Each IDS module carries a digital control circuit which regulates the output for supply voltage variations. Square or linear dimming laws are selectable together with dim/non-dim, local or remote control for each channel. Over temperature shutdown can be automatic or manual and front panel displays on the module indicate key status and warning information which, in some cases, may be remoted.



Prestige 1000.



Prestige 2000.

BUILDING THE WORLD'S BIGGEST PA



One for the record books: the world's biggest PA for 'Monsters of Rock' at Castle Donington.

The motor racing track at Castle Donington in Derbyshire has been the scene of annual Heavy Metal 'one dayers' for nine years. At this year's **Monsters of Rock** festival, eight bands played, headlined by Iron Maiden (see *On Tour*, L+S1 September). They were using the biggest single-source PA system ever constructed. Rated in excess of 500kW, it has won an entry in next year's **Guinness Book of Records**. Ben Duncan checked out the equipment and unravels how it all came together.

Expanding Iron Maiden's 'Hi-Fi system'

Owing to tough economics, the 'first division' bands of the 70's who invested in their own PA systems have been forced to sell up. Iron Maiden are the exception to the trend. In 1983, after touring successfully with Turbosound's own PA rental company for two years, they decided to buy outright the rig they were then using, including 24 TMS-3 cabinets upfront, each rated at 1200 watts programme.

At the time, the idea of such a new band (they first toured in 1980) investing in such a large PA was an anathema to record company accountants. But Iron Maiden's management had nerve: massive world tours were planned. Their decision paid off, in that over the past six years, the band have averaged an unprecedented seven out of every 12 months on the road while their original PA has more than doubled in size **twice** over.

When the band learned they were headlin-

ing at Donington, they set the ball rolling by supplying their entire PA comprising 100 Turbosound TMS-3's and 24 TSW-124 subwoofers. At the same time, Doug Hall, their outfront engineer knew they'd need more equipment: "I like a comfortable headroom, about ¼ of the system's total output."

Organisation

Naturally enough, Doug wanted to maintain the sonic qualities of the existing speakers in the enlarged system for Donington. Dick Bell (Iron Maiden's production manager) contacted Mike Lowe at Britannia Row, who set about arranging a further 400kW of Turbosound enclosures with the help of Samuelson's Concert Productions (incidentally bought by Brit Row the week after the concert). Extra cabinets and amplifier racks had to be hired in from Regiscène in France, and Ampco in Holland. Meanwhile, a section of the planned array was evaluated two months beforehand, in Brit Row's

warehouse.

The week preceding August 20th was allowed for setting-up. On Monday the main speaker array was rigged, followed by a single delay tower, the f.o.h. equipment and three sets of stage monitoring on Tuesday. The latter allowed the support bands to A-B between two system for rapid changeover, leaving the third preset for Iron Maiden. On Wednesday, the system was run-up, hums were excoriated, the polarity of over 1700 components was checked and aligned, and the PA cabinets were adjusted for best coverage. Thursday and Friday were spent soundchecking Iron Maiden and the support bands in turn, meaning the backline could be left in position backstage, in order of appearance.

The Main PA

Looking at the table, 460 amplifier channels were in use on the two PA wings alone. Owing to their diverse sourcing, and the differences in rental companies' interconnect standards, the amplifiers needed careful matching. Turbosound's John Newsham and Julian Tether (the Samuelson's chief technician, now working for Britannia Row) spent an evening religiously checking and correcting the sensitivity and normalising the polarity of every amplifier. A further five



Doug Hall, Iron Maiden's sound engineer.

hours were spent reducing residual hum and noise by adjustments to the system grounding. Then there were 1500 drivers to phase-check!

All 460 amplifier inputs were sourced from a single BSS MCS series crossover at Doug's insistence. This approach promised sonic coherence, but the nett load impedance would be very low (about 100 ohms), and any failure would silence the main PA outright. By using BSS's newly developed line-driver 'booster' package (see L+SI, September '88) in each stage wing, stress on the crossover outputs was avoided altogether.

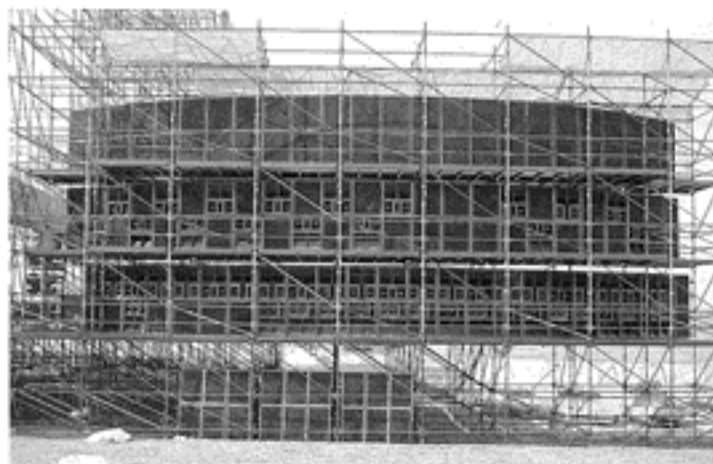
Engineering the 500k array

The main front system comprised 304 Turbo-sound TMS-3 enclosures. Each 72' stage wing had three tiers. Each tier had 48 Turbosound TMS-3 enclosures in two rows, totalling 144 per wing. The remaining 16 were placed underneath the front of the stage, with a separate vocals-only mix to balance the plainly audible backline and monitors. In the wings, the TMS-3's were stacked vertically, first to gain the longest throw from the HF horn, and second, to close-couple the 10" mid drivers. On the ground under the wings were 60 TSW-124 subwoofers, all mutually coupled.

The TMS-3 is configured as a medium-throw 'box'. Nevertheless, the projective capabilities of this giant array were amply proved during initial sound-checking, by the PA's clarity two miles distant. In past years, the projection of some of the PA systems in use has been thwarted by the arena, which forms a shallow bowl. For this system, projection was at the mercy of the weather alone. How?

When Samuelsons (then TFA) engineered Wham's farewell concert with 200kW of TMS-3's in 1986, HF projection was frankly disappointing. The cause was tracked down to rising thermal currents produced by the heat, which had lifted the highs away. Later, Turbosound's designers had shown that angling the cabinets so they pointed into the audience could overcome the effect. At Donington, flying the PA with the available scaffolding would have left a big gap between cabinets, prejudicing the bass horns' coupling. Instead, cabinets were tilted using timber wedges as 'acoustic compensators'. Smaller wedges at the front fine-tuned the coupling between adjacent mids.

Looking up, each tier was built 18" forwards of the next, while the enclosures in each wing were arrayed in an arc, receding 10 feet at each 'wing tip', to produce the pair of phase-coherent, virtual point sources that characterises Turbosound PA's outdoors.



The right hand stack.

Considering the total amplifier power and the efficiency of the TMS-3 enclosures (averaging 107dB @ 1w @ 1m), it's easy to jump to the conclusion that anyone approaching the front system did so at risk of bad earache. However, as you approached, you were looking up fewer and fewer drivers. All told, the SPL was relatively constant over the 60 metres back to the mix tower.

Stereophony preserved

A small delayed PA rated at 50kW was located immediately behind the mix tower. Owing to the more than adequate bass and sub-bass projection from the main outfront system, the delay tower's low end was barely 'ticking over', and it needed no subwoofers. John Newsham said: "It's not there to start the sound all over again. It's there to give a gentle lift to the mids and highs." A

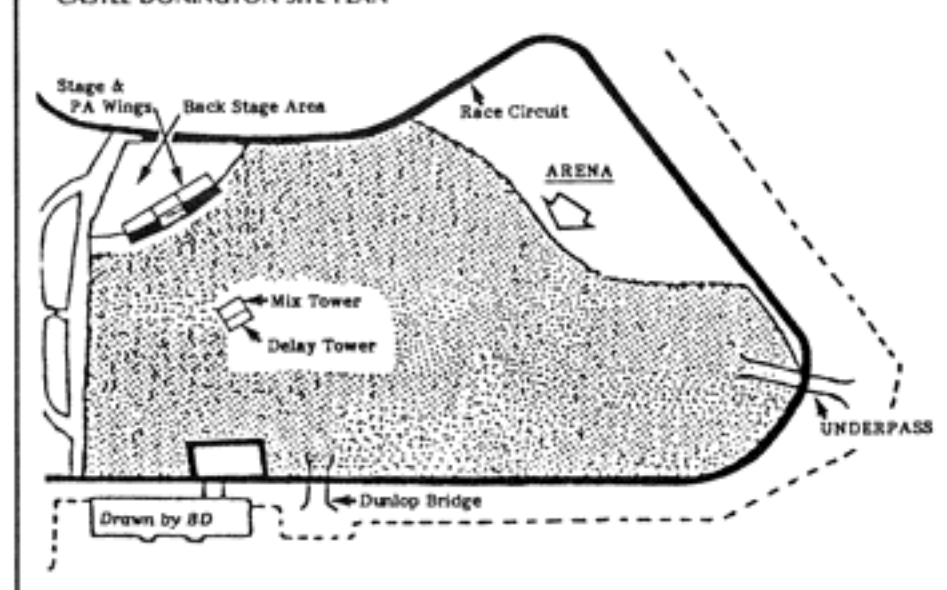
look at the site plan shows why: the land rolls away from stage left into bowl-shaped dip, then up into the main bowl, and goes on rising gently to a ridge well beyond. Donington's infamous 'dog leg' means a major part of the audience are well off-axis to stage.

On the tower were 30 MSI hi- and 16 lo-packs, together with eight JBL horns for long throw hf. Altogether, they were set to relay the stage-right mix, to 'fill-out' the stereo image 500 yards from stage left. This is a technique first applied by Malcolm Hill. The delay-tower components were driven off their own crossover, through a Klark-Teknik DN-700 delay line. Stereo balance, horn aiming and delay times were first estimated, the delay at 1mS/foot. Testing and fine tuning was accomplished fairly speedily with sound-crew radioing back the results from a golf-cart.

OUTFRONT AMPLIFIER CHECKLIST

Qty	Model	Sourced from
72	QSC 3800	Iron Maiden
102	C-Audio SR-707*	Samuelsons
6	Turbosound TMA-23**	Samuelsons
18	EAA 1000	Regiscène (France)
6	Carver PM 1.5	Regiscène
14	HH V800	Ampco (Holland)
* these are modified SR-606s		
** each Triamp has 3 stereo channels		
Grand total: 460 amplifier channels in use		

CASTLE DONINGTON SITE PLAN



On the day

The weather was hazy and later cloudy, and gently warm. By 6pm, attendance had reached 107,000. The inevitable rain came after nightfall, during Maiden's set: a pain, except that wet air seems to improve the transmission of sound.

After six years on the road and literally thousands of gigs to his credit, Doug Hall, who's been Iron Maiden's outfront engineer since their first UK tour in May 1980 reported: "I like the coherence of the TMS-3's. Most of all, the detail of the vocal information is carried by one driver, so it's really transparent sounding. I don't want a PA to sound like 'big speakers'. For me, it should be an extension of the stage, like it's coming straight from the band. The PA should disappear. With this system, you get that, and the level, without the distortion that hurts your ears."

Of the support bands' engineers, only Mark Dowdell from **Motley Crue** and the engineer from **Megadeth** had worked with Iron Maiden's PA before, but none were disappointed; over 550kW of programme power was available outfront. The support bands' sound peaked at between 6 and 8dB below full output, (which spells 1/4 power, or about 125kW), leaving a comfortable headroom. The short-term rms SPL monitored at the mixing tower was then 118dB. It was 108dB at the Dunlop bridge, 185 metres from the stage. During Iron Maiden's set, short term rms SPLs were similar, but there were more dynamics: instantaneous peaks at the mix tower reached 124dB (compared with 119dB during Kiss's set), indicating the PA was being driven briefly within 1/2dB of full power. The way in which the sound quality varied throughout the day, as a series of different engineers took the helm, showed that any unpleasantness in the sound was part of the mix.

Overall, it must be the first time HM bands have played in the open-air to 100K+ people with enough power headroom to play loud and develop a peak-to-mean ratio (ie. 'dynamics') of over 10dB, without crashing the limiters. When Iron Maiden announced (in Turbosound's **Kerrang!** ad) that they were bringing along their Hi-Fi system, they meant it!

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BOOKS

Graham Walne reviews

The Stage Lighting Handbook

The Audio System Designer Technical Reference

Some time ago, in the middle of lighting a Handel Opera, the director turned to me and said: "It must have been so much easier in the old days; all you needed to say was blow out 47!"

It wasn't a very long journey from that comment to the question of how people **did** pass lighting instructions in days gone by. The first stage lighting handbook was written by Serlio - not a name you will easily find on the shelves in Charing Cross Road, and no wonder, since his book was published in 1545. Many others followed through to Sabbatini's 'Manual for Constructing Theatrical Scenes and Machines' in 1638. After that there was rather a gap - Inigo Jones, Garrick, Belasco et al not being regular contributors to L&S.

We then jump to 1932 when McCandless wrote what many consider to be the all-time bible of the art and at a time when the 1000 watt spotlight was less than fifteen years old. Today, although Pilbrow's is a masterpiece, Francis Reid inherits the mantle of those early writers, and with the third edition of his 'Stage Lighting Handbook' he joins McCandless, Ridge, Corry and Bentham. However, I think I am correct in saying that none of the aforementioned have been translated into other languages, but you can now also read Francis Reid in Swedish and Spanish.

Undoubtedly the book's success owes much to his renaissance approach to theatre, and few theatre authors have had his breadth of experience as lighting designer, theatre manager (Bury St Edmunds) and more recently as educator (he was principal of the Theatre Department at the Central School of Speech and Drama in Southampton Row). Above all Francis Reid prefers people to things, and the Lighting Handbook is therefore ideal first reading for those who are terrified by the ironmongery.

The third edition is presented in marked contrast to the other two. Firstly it is in soft-back, possibly the first theatre textbook to be produced this way. Secondly, it is 30 pages longer than the second edition, and at £9.95 it remains the most affordable lighting handbook around today.

Many of the chapters held over the second edition have been reorganised and moved into a more logical order. Elsewhere the book has taken note of new technology and additions, this time including rockboards, trussing and an improved section on diffusers. The juxtaposition of text and illustration is good, and there are some excellent new graphics which explore what happens to actors and shadows when lights are placed at different angles. An interesting new section deals with an agenda for a post mortem, and sensibly Mr Reid concludes with another new section on new technology - CAD's and dichroics are all very well, but I like his use of highly technical words like 'splodge'! I have few grumbles, but I will take these up with Francis Reid in a more suitable debating chamber. Meanwhile if the ironmongery terrifies you and you don't know where to start, go in search of The Stage Lighting Handbook.

In total contrast to the world of splodge is a book from Klark Teknik entitled 'The Audio System Designer' which is intended as a technical reference for acousticians. Very few of this select group actually know where the proscenium arch is, but the small band that do, led by Derek Sugden, include the redoubtable Peter Mapp, who has researched and compiled the work. It takes the form of an A5 ring binder (thus sound designers will now carry two Filofaxes) which contains pages and pages of statistics, graphs and equations. There are six sections, general acoustics, sound insulation and absorption, room acoustics, psycho acoustics and speech intelligibility, sound system engineering, and physical data - 100 pages in all.

Reviewing books of any kind is more time consuming than deadlines commonly allow (except in

this publication) and technical works obviously take the longest time of all. Should one check the data? All 100 pages of it? In this case I was fortunate that, when the book fell on to my desk, I was working on a number of projects which required acoustic calculations, so I used this one instead of my others. At first the lack of page numbers did much damage to my blood pressure but then I realised that I could always file the most used areas at the front, and additional pages are planned so loose leaf is ideal. Furthermore, it was a pleasure to have all the data in one place instead of spread across several publications. Also, Peter Mapp has tailored some of the data to the needs of those designing sound systems so that one is spared endless wading through more general data elsewhere.

The cost? OK, but sit down first. It's £35 (including postage and package). I was staggered when I saw that figure and I think that it is a shame that the price will prevent many people from having access to the proper data. Or will it? After all, the equations and references here are not secret and I'm sure that all those printed are correct and for that someone has to be paid, but £35! Does this figure mean that future pages are free? (Years ago the purchase of a Savile Row suit meant that alterations for life were free). I don't know the answer to any of these questions. I do know that Klark Teknik have made considerable contribution to the industry and that Mr Mapp has made a sincere attempt to provide system designers with an excellent tool. Start saving up. Otherwise you might get 'splodge' out of your loudspeakers.

The Stage Lighting Handbook

third edition

written by Francis Reid
published by A & C Black
£9.95

The Audio System Designer Technical Reference

researched and compiled by Peter Mapp
in association with Gaston Goosens Marketing
Director Klark Teknik
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ON TOUR

Keith Dale

Prince 'Lovesexy' Tour

Wembley Arena/
Birmingham NEC

Catriona Forcer talks to
lighting designer

Roy Bennett

Last year I was fortunate enough to see the Prince 'Sign of the Times' show in Milan courtesy of Light & Sound Design of Birmingham, and lighting designer Roy Bennett produced one of the most spectacular shows I've ever seen. I looked forward to seeing if he could surpass himself on the current Prince 'Lovesexy' tour. Needless to say he did, even though he had the difficult task of lighting 'in the round'. Before Roy told me about the tour which is set to continue until January taking in the USA, Australia and Japan, he explained why the Sign of the Times tour never reached the UK.



Birmingham NEC - set design for 'Prince' by London-based UpFront FGS.



Prince in concert at the NEC Birmingham. Staging/sets by UpFront, lighting by Light & Sound Design, lighting design Roy Bennett.

Photos: Altered Image



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Don't Miss it!

"It was very complex, but basically the approach to doing an outdoor show was not right at that time in the tour, and so we tried to get into Earl's Court. We were told that it was OK so we cancelled Wembley, but then we were told it was not OK and we couldn't get back into Wembley! It was a whole mess of unfortunate circumstances. We all regretted it, particularly Prince, who has put more emphasis on the English shows this year. Looking back I think we should have gone for indoor shows to begin with, because with outdoor shows you lose the whole personal interaction between audience and performer - no matter what effects you use."

What was your next project after the 'Sign of the Times' tour finished?

The last show was in Antwerp and we filmed it for the movie of the tour. Then we went to Princes' Paisley Park in Minneapolis to do some pick up shots for the same film. We were then supposed to go back on the road in October but that never happened - in fact we never did the USA. That rather jumbled up my schedule, but in the November I designed for Earth, Wind and Fire. I also started on the preliminary work for this tour in November and December.

In the beginning of January I went to Brazil to do the Hollywood Rock, or Rock in Rio as it's sometimes called, and that was a lot of fun. I designed the lighting rig for the show which had to fit all the headline acts and meet the needs of their designers. These were acts like The Pretenders, Simply Red, Simple Minds, Super-Tramp, Duran Duran and UB40. I was also the liaison between the production and other bands and the TV people in Rio. I had to babysit the Brazilian bands because they had never used things like Vari-Lites before, but I was very impressed with some of their acts."

Were you happy with the 'Sign of the Times' film?

"I was relatively happy with the way the film came out. I think it managed to capture a live show better than I've ever seen before. We tried to make it more interesting by adding bits to it and Prince tried to make some kind of obscure story line that ran through it which gave us some kind of flow."

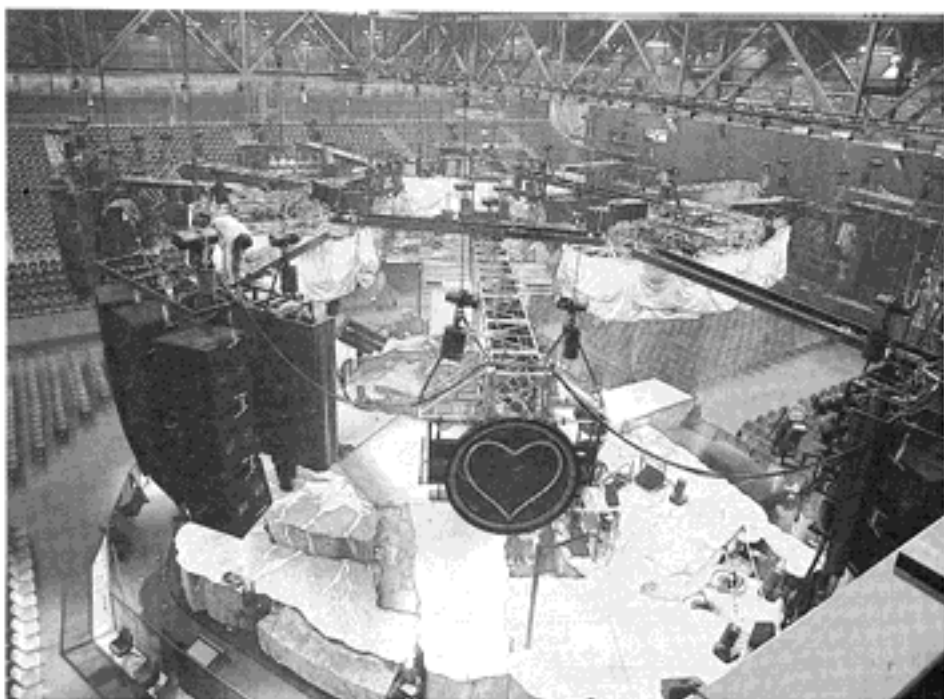
What did you do after Rio?

"Right after that I started on the production of Prince because there was so much to it, not just in the lighting rig but mainly the stage. It is a very complex set-up with all the hydraulics and rampways, which are actually lampboxes. Trying to figure out how to get brightness in them without burning up the perspex was difficult! We wanted to do a show which would be completely different from anything that anyone has ever done before in the round. We have tried to overcome the problem that always occurs in the round when you have the lighting rig and the stage but nothing in between.

"How do you get around that missing third dimension? We have used what we call the 'toasters' - pop up prop pieces which make up the different scenes on the stage. There are three different 'looks' to the set. The first part of the show is representative of a deteriorating city using a suspension bridge. The second part is like a garden scene with trellises and flowers, and the third look is our 'heaven' scene when the roll drop drapes come down to give a very soft effect. Designing this show has been a real challenge to me because I've never done anything like it before! It's been hard, but I have enjoyed it and I have certainly learnt a lot."

What other difficulties are there when designing in the round?

"You always have to keep in mind that you are not playing to just one end of the hall but to a 360° audience - so you have to give everybody something to look at which is just as interesting as the performer. Using Vari-Lites in the round has been a challenge - you have to think more about how the lamps move because they are so visible to the audience. They have a certain pattern that they take to go from one point to another and you have to make sure that the movement is not awkward. Basically you have to choreograph their movements for a 360° look."



An over-view of the set-up for Prince's in-the-round performances, NEC Birmingham.

Did you have much rehearsal time?

"We had a week of technical rehearsals in Los Angeles which involved setting up the stage. We approached several show designers to do the stage, we even went to one in England but he said that he needed four months just to think about it let alone get involved. In that week we also set up the lighting system which is basically custom made. We had pieces of it flying in from all over the States and the UK during that week and then we went to Minneapolis for three weeks rehearsals. I had a problem with the original lamps I was using and had to let them go. This was five days before the end of rehearsals in Minneapolis and the first show in Paris! I then got in some Vari-Lites and Mac Mosier, my Vari-Lite operator, and I sat up for three days straight completely reprogramming the show. I certainly don't want to go through that again."

When was the first show of the tour?

"The first show was in Paris on July 8th. We left America on July 4th so that we had 1½ days to set up and a day of rehearsals. We had problems shipping the gear over here as we only expected to fill one 747 plane whereas we ended up filling one and a half. This was because originally the PA was going by ship but we kept it back for rehearsals. Unfortunately not all of the gear reached

Paris in time. We then went to the Palatrussardi in Milan which is small and hard to load into, so we couldn't use all the gear there.

"Now we are in Wembley where, because of weight restrictions, we haven't got the full rig up - but it will all be there in Birmingham. I know that we can set it all up without any problem but it does take quite a while because the stage is so complex. The lighting system itself is all modular and goes up really easily.

"I've tried to avoid the typical in-the-round 'wagon-wheel' look by using the three could pods which float independently over the stage and which have inflatable could facings on them. The outer ring of pods hide behind the floating PAs so there really isn't any circular trussing around the stage.

"At first, even though I knew what I was doing, I wasn't really happy with the way the show looked. It was probably because I'm not used to dealing with an in-the-round situation and I guess I wanted more out of it than I could actually get. But after a while I began to ease up on myself - I'm my own worst critic at times!

I am sure that anyone who has seen the show would agree that Roy Bennett is a very modest man and much too hard with his self criticism - because the lighting for Princes' 'Lovesexy' tour will be difficult to better."

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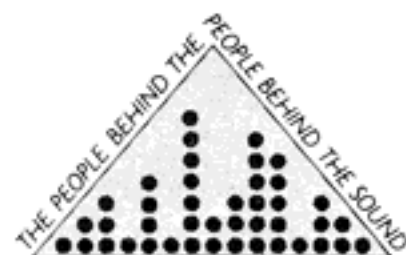
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