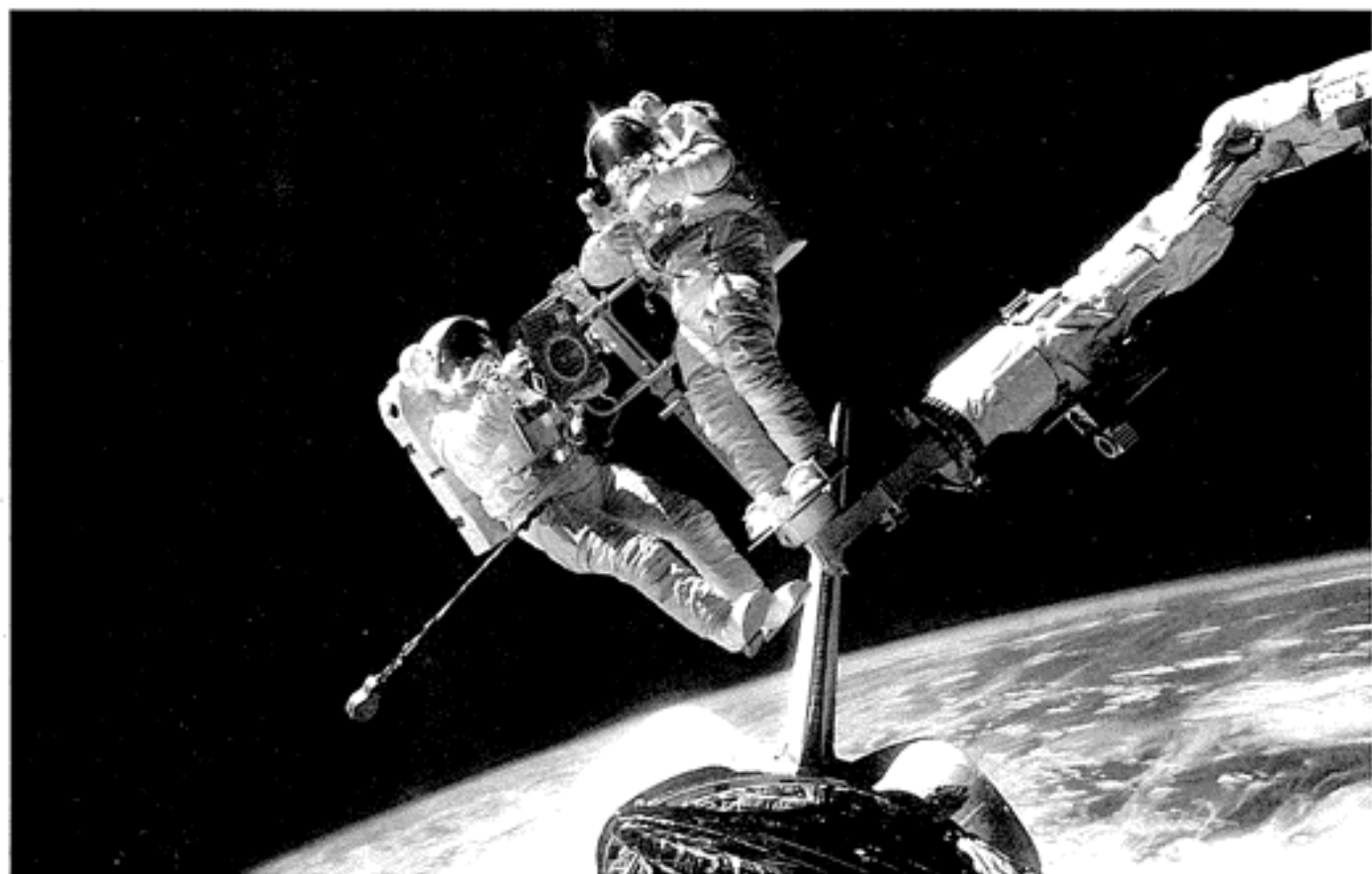




**LIGHTING+SOUND**  
*International*

MARCH 1989

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

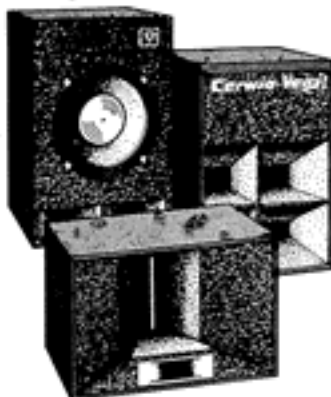


*The men from Avitec's sound design department seem to know no limits, but then who would if they were given the exclusive use and distribution of the world's finest professional sound systems.*

*The possibilities now open to them are endless, with Cerwin-Vega's legendary bass, complemented by their high definition mid/high cabinet range. This has just been augmented by the arrival of the new long throw high power CVX flying cabinets . . . there won't be a venue left that the AVITEC sound men can't satisfy!*

*Come and hear for yourself - demonstrations by appointment or full information on request.*

**JUST ARRIVED!**  
The new CVX 253 and  
CVX H183 three  
way long throw  
high power  
flying cabinets



**The skies really are the limit!**

**Cerwin-Vega!** PROFESSIONAL SYSTEMS

AVAILABLE EXCLUSIVELY IN THE U.K. FROM

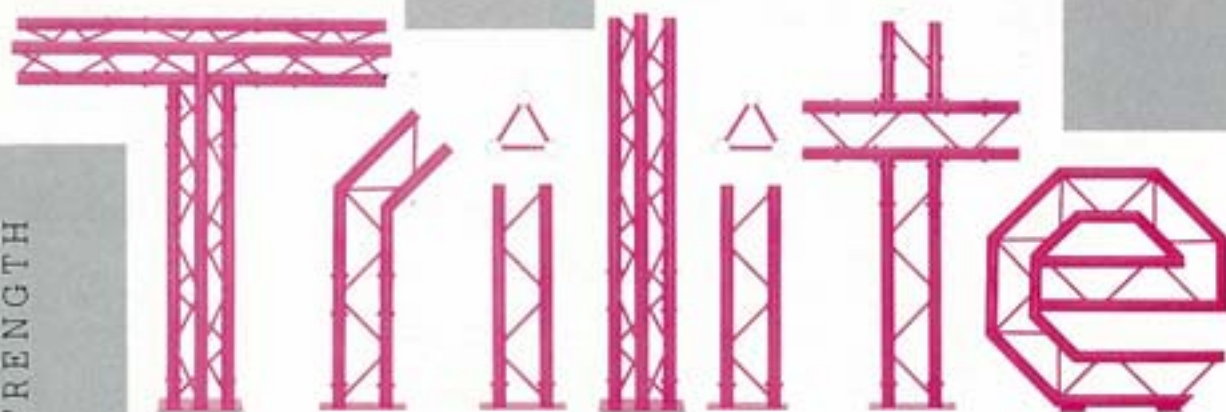
# AVITEC

THE ATMOSPHERE CREATORS

The AVITEC Group — Europe's largest club lighting & sound equipment distributors.

AVITEC Electronics (UK) Limited, 80/81 Walsworth Road, Hitchin, Herts SG4 9SX. Tel: Hitchin (0462) 58961. Fax: (0462) 31019. Tlx: 825682 AVITEC G.  
AVITEC & SONDOCK, Köln 30, W. Germany. AVITEC BV, Tilburg, Holland. AVITECH AG, Niedergösgen, Switzerland.

A DISPLAY OF STRENGTH



The Trilite Structural System is strong yet lightweight and easy to assemble. Available in any colour, Trilites' simple modular construction allows it to be built into an incredible variety of structures.

Full customer support service available.

For further details contact:

OPTIKINETICS LTD  
38 Cronwell Road  
Luton LU3 1DN, England  
Tel (0582) 411413, Tlx 825920  
Fax (0582) 400613

North America  
TRILITE STRUCTURAL SYSTEMS INC  
499 O'Brien Road, PO Box 778  
Renfrew, Ontario K7V 4H2, Canada  
Tel (800) 267 0727, Fax (613) 432 7672

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

**Silently.**

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

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

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

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



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

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



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

# "COME ON BABY LIGHT MY FIRE"



In fact anywhere that's got a power point. The highly portable Celco Baby offers the club and disco lighting designer 40 memories which are easily recalled and instantly outputted using any of the ten Cue Faders.

The effects board provides the facility to program 4, 40 step sequence patterns through any of the lighting channels and enables further creative possibilities through a sound activated sequence that will step to the bass line or change speed in relation to the volume.



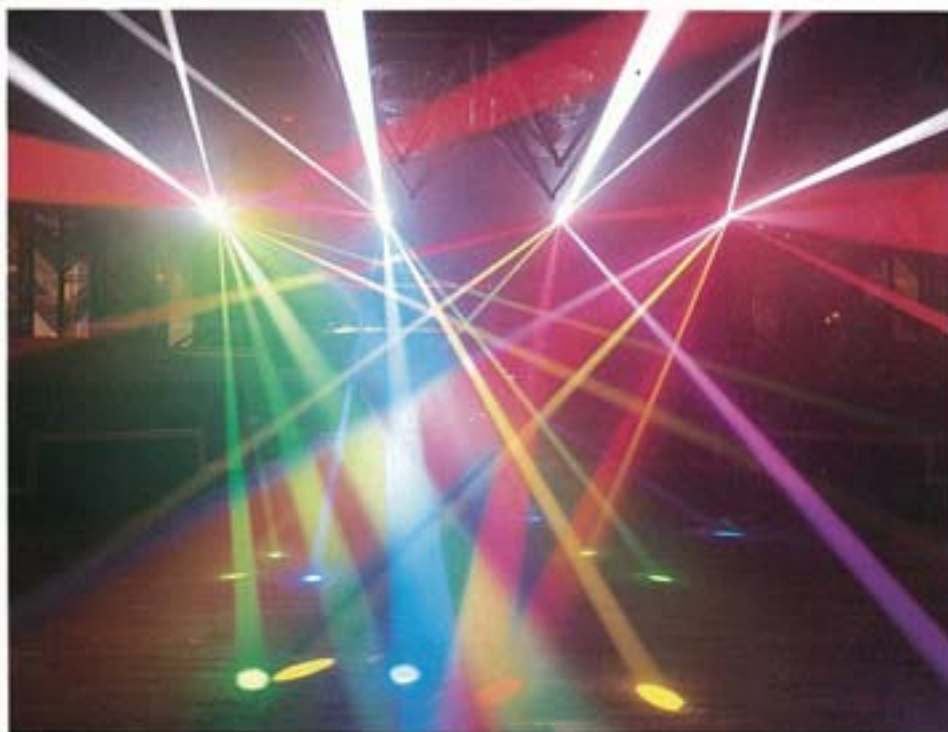
Celco products are manufactured and distributed by: Celco Ltd, 1/3 Bellingham Road, London SE6 2PN, England tel: 01-698 1027 tlx: 927624 (CELCO G) fax: 01-461 2017 and Celco Inc, 30B Banfi Plaza North, Farmingdale, New York 11735, USA tel: (516) 249 3662 fax: (516) 420 1863.

*Celco Baby.  Non-stop lighting. Non-stop dancing.*

# LIGHTING+SOUND *International*

## MARCH 1989

- |    |  |
|----|--|
| 7  | NEWS in Lighting+Sound International                 |
| 19 | A Great American Market                              |
| 25 | Sound 89 show report                                 |
| 28 | Close-Up on Color Ray                                |
| 31 | Bill Klages/The Grammys/Morpheus Pan-Command         |
| 40 | Over the Road to Sky: Strand Lighting for Television |
| 43 | Equipment News                                       |
| 45 | PLASA News and Legal Notes                           |
| 47 | PLASA Members  |
| 49 | Ice 'Cluster' at Stevenage Ice Rink                  |
| 52 | The Fibre Optic Story                                |
| 57 | The JBL Connection                                   |
| 63 | On Tour  |
| 66 | Directory  |
| 70 | Viewpoint  |



### Color Ray Cover Story

In our Close-Up this month (see pages 28-30) Tony Gottelier discusses Laser Media's new Color Ray system. The effects shown above and on our front cover were photographed during a product demonstration given by Lightfactor at the Broadway Boulevard in Ealing in February.

## LIGHTING+SOUND *International*

published monthly by the Professional Lighting and Sound Association

Editor: John Offord

Assistant: Ruth Rossington

Telephone: (0323) 642639 Fax (0323) 646905

Editorial Advisers: Tony Akers, David Bearman, Andrew Bridge, Peter Brooks, Jenny Cane, Tim Chapman, Mike Gerrish, Kevin Hopcroft, Tony Kingsley, John Lethbridge, Rob Peck, Iain Price-Smith, Neil Rice, Hazel Simpson.

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



© Copyright Professional Lighting & Sound Association

No part of this magazine may be reproduced without the permission of the Editor.

The magazine is available on annual subscription:  
UK: £25.00; Europe and rest of world surface rate £30.00; Airmail £45.00.

Did you know  
that Coemar special  
effects lighting  
equipment is now  
available for

## TRADE HIRE

throughout the U.K.  
& Ireland?

For further information  
please contact Mike Wood on  
**(0604) 499331**



W. B. Lighting Ltd.,  
4 Tenter Road,  
Moulton Park Industrial Estate,  
Northampton NN3 1PZ  
Tel: (0604) 499331  
Telex: 31230  
Fax: (0604) 499446

## Joined Forces

Mark Huffington and Robert Luff have announced that **Luff Light and Sound Ltd** has now become part of the **Have Facilities Group**. The amalgamation will take their combined turnover above £4 million in the first full year of trading. Robert Luff told L+S that all the present staff will be retaining their jobs and that he will continue as a director of the company.

The Have Group are moving to new premises on the Chiltonian Estate in Lewisham on March 20th enabling easy access to the M25, M2 and M20, with central London only 30 minutes drive away. To assist with the new structure, Alan Kilford, late of Bose, is joining as sales manager and will work in close liaison with the existing managers of the Have Group. With all the expertise of the two companies under one roof, it is possible with one telephone call to cover all requirements for conference and theatre services, be it lighting design, service, audio visual, video, projection, sound, lighting, prompting and staging - whether on a hire or sales basis.

## AC Hit £4.25 Million

AC Lighting have reported a massive increase in their yearly turnover for 1988. David Leggett, managing director, told L+S: "Business was up 40% on 1987 mainly due to the continuing drive into the European export market." AC distributes such famous names as Pani, Altman, Lycian, Strong, Jands, Thomas, Tomcat and many more.

David Leggett told L+S that 1989 is the year in which the company is looking to move into the African, Eastern Bloc and The Middle East and Far Eastern markets. Dealers in these areas wishing to represent AC Lighting should contact them at their UK headquarters, dialling 44-494 446000 from overseas.

## Big Frankfurt Success for Citronic

Citronic's launch of their new SPX7-27 31 band graphic equaliser with on-board parametric state variable notch filtering, was one of the most successful the company has ever had: "We received orders from almost all of our European distributors, where Citronic is enjoying unprecedented growth at the moment," sale and marketing director Mike Gerrish, told L+S. First volume production run of Citronic's PPX150 amplifier begins in March. This product was also seen for the first time in Europe at Frankfurt, it too was received favourably, and will be available in good quantities from the end of March. This product is TU high and delivers 75 x 75 Watts RMS into 4 ohms and 50 x 50 into 8 ohms. As part of the



## Major Launches due from Laser Systems

Geoff Jones, Tony Gibbs and their team at Laser Systems in Gwent are hard at work on a major development programme for 1989 and beyond, writes Tony Cottelier.

For launch at Rimini in April are Coloursweep, a mirror-driven intelligent spot, and a 5mw He-Ne laser-based effect giving four colours and simple lissajous (this word is reserved for T.G., Ed.) patterns called Superscanner, and a new controller to be named the Mentor.

The Coloursweep, which will be offered in both 400w HTI and 360w halogen versions, will give 320° of pan and 110° of tilt via its sealed mirror device which is driven by microsteppers. The company is claiming significant speed and positional achievements for this device, with accuracy of 0.06° at a maximum speed of 0.4 secs point-to-point across 90°. Seven dichroic colours are selectable plus three gobo patterns.

Coloursweep, Superscanner and other products for future development will all be accessible to a new range of controllers via Tony Gibbs' "Data Link" data transmission system as described in last month's L+S. The new Cyclops controller is described as a multi-product device in that it will handle up to 32 of any of the new effects units or 16 channels of laser scanning. The new Mentor meanwhile, handles 16 individual items of one product type only and, like its bigger brother, 128 preset memory states.

To be launched at PLASA and named Stingray, is a new laser simulator product which will compete directly with Laser Media's ColorRay as featured in this month's issue, (see page 28). Each head in this system will contain its own 400w HTI lamp, which Laser Systems say they have configured to generate an 87.5mm diameter beam at 9 metres. Additional pan and tilt is not an option, other than that provided within a 60° envelope provided by the inherent scanners themselves.

Eight programmable dichroic colours will be provided in Stingray, together with eight variable scanning and lissajous patterns. Laser Systems are projecting a price of around £2,000 per head plus controller which could be either Cyclops or Mentor.

Geoff Jones is pictured above with Rob Todd, mechanical engineer, with Coloursweep the talking point.

PPX range, it is very high quality with all other specifications being similar to the PPX300, say Citronic.

"The Frankfurt Fair was the most successful exhibition the company has ever attended in its 17 year history," said Mike Gerrish. "Citronic has

been working very hard for three years now to consolidate its distribution throughout the EEC countries and these efforts are beginning to bear fruits with very healthy growth in sales and trouble-free relationships with the appointed distributors."

## ★ DIRECT LIGHTING ★

- ★ WE SPECIALISE IN SUPPLYING ALL YOUR LIGHTING REQUIREMENTS
- ★ P.A. SERVICE
- ★ TRUCKING SERVICE
- ★ TALK BACK FACILITY

WE OFFER A VERY PROMPT AND RELIABLE SERVICE FOR MUSICIANS OPERATED BY MUSICIANS

FIELDHOUSE LANE, THAMES INDUSTRIAL ESTATE  
MARLOW BUCKS Tel: (06284) 74974

## MUSIC AND FIREWORKS

### FROM THE BIG BANG!

Add impact and excitement to your next promotion, launch, campaign or event with the sound and splendour of The Big Bang.

- The War of the Worlds • 25 Years of Rock
- A Kind of Magic • Jean-Michel Jarre

Ring 058-285-2436 or write to

FANTASTIC FIREWORKS LTD  
PO Box 300, Redbourn, St. Albans, Herts AL3 7EE



# PATCH ME UP SCOTTY!

**THERE'S AN INTELLIGENT SOFTPATCH  
FROM 'DOWN UNDER' HERE**



If you are a lighting operator with set-up headaches then you need LSC's Softlink Patching System. No peripherals, such as VDU screen or keyboard are required since the Softlink is a self-contained unit. By far the quickest, most versatile, rugged and affordable DMX 512 Softpatch yet built!

*The extensive list of features include:*

- Up to 256 input (desk) channels utilising DMX 512.
- Up to 512 output (dimmer) channels utilising DMX 512.
- Analog input or output via LSC's range of multiplexer/demultiplexers.
- Multiple dimmers can be patched to one desk channel.
- Each crosspoint can be specified at a chosen % level.
- Desk and dimmer channels can be limited to a maximum %.
- 25 line x 80 character L.C.D. screen.
- Powerful menu driven system makes operation simple.
- Up to 10 patch setups can be saved in battery back-up memory.
- Patch details can be printed out for reference or saved in external memory units.
- A Fader is provided for testing of patches without a desk.
- Two package options, 19" rack mounting or flight case.
- Dimensions: 480 mm x 220 mm x 90 mm.

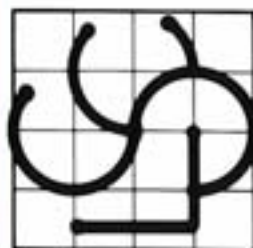
**AGENCY ENQUIRIES WELCOME**

**L.S.C. ELECTRONICS** Pty. Ltd.

4-6 JUNCTION ROAD, SURREY HILLS, VICTORIA, 3127, AUSTRALIA

TELEPHONE: (613) 836 9111

FACSIMILE: (613) 830 5187





## More Oskas

The success of Oska, Pulsar Light's touch sensitive TV controlled multiplexed lighting system, continues apace with news this month of five recent installations abroad. Among these is the first Oska installation in the United States at the Maryland Club in Milwaukee. This system was installed together with seven Clay Paky Golden Scans as a direct result of the highly acclaimed light show produced with these products at the Dallas LDI show in November last.

Ken Sewell, Pulsar's managing director, told L+S: "They bought the equipment straight off the stand, which is perhaps not so surprising when you realise just how impressive exhibition shows can be." Exactly the same thing happened at Dusseldorf, resulting in the installation at Rio Palast in Waldbröl. The American installation was carried out by US distributors, High End Systems, and Pulsar, Germany organised the other.

Further systems have been fitted at The Blue Teak in Rotterdam, and Malmia Etage in Sweden. In addition another Oska was shipped to Klassis Resort in Turkey. "All these successful installations, together with the many in the UK last year, have vindicated our faith in Oska and demonstrate that the system has a very bright future," Ken Sewell told L+S. In the meantime, Pulsar have produced a video of their famous light show, as seen at many of last year's exhibitions, and this is available now on application to the company. For further information contact: Ken Sewell on 23) 66798.

## Redgrave for Re-Wire

The Redgrave Theatre in Farnham is to undertake a total stage re-wire of lighting equipment. The new lighting system is to be installed by R.W.S. Electrical and will provide the theatre with 164 hard wired dimmer outlets. After completion, the system will operate on blocks of six circuits enabling the lighting department to utilise industry standard Lectraflex Multicore Connectors.

## New Shutters for Old

Ark Light Theatre Lantern Restoration were recently set the task of supplying a large quantity of new shutter assemblies for Strand pattern 23N mark 1 lanterns at the South Bank Centre. Some had the old square gate shutter sets, and many had none at all.

Ark Light's Joanne Taylor thought the old square gate rivetted design was 'pretty naïf' and clearly not the way to proceed. She came up with a laser cut precision design with stainless steel blades which can be easily stripped for cleaning.

As well as supplying shutter sets for mark 1 23's and mark 1 23N's, and hosts of other bits and pieces, the company also stock a wide range of new and reconditioned Strand parts, T/H conversion kits for most lanterns, new bamdoors and colour frames. Details from Ark Light on (0533) 478336.

## Bose/Hill Distribution Link on new LC Amps

A distribution agreement has been signed between major pro-audio equipment manufacturers, Bose UK and Hill Audio. As from April Bose will be distributing Hill Audio's new LC Series of power amplifiers through their UK network of dealers. The arrangement enables Bose UK to offer a comprehensive range of loudspeaker products, high performance amplifiers and other complementary equipment. The announcement of the deal coincides with the UK launch of Hill's LC Series of power amps.

## SEDA Date

The South Eastern Discotheque Association is again holding its annual exhibition at The Woodville Halls, Gravesend, Kent - this year on Sunday 4th June. SEDA is looking to yet another sell-out, and for information contact John Rayner on (0474) 322317.



## Lights for the Movies

LightGraphix, specialist lighting designers and manufacturers, have installed custom-built lighting at The Movie Centre in Slough - a ten-screen, 2120 seat complex. LightGraphix supplied their light-tube systems throughout the complex along with safety lights. For further information contact Roger Fielding on (0322) 22389.

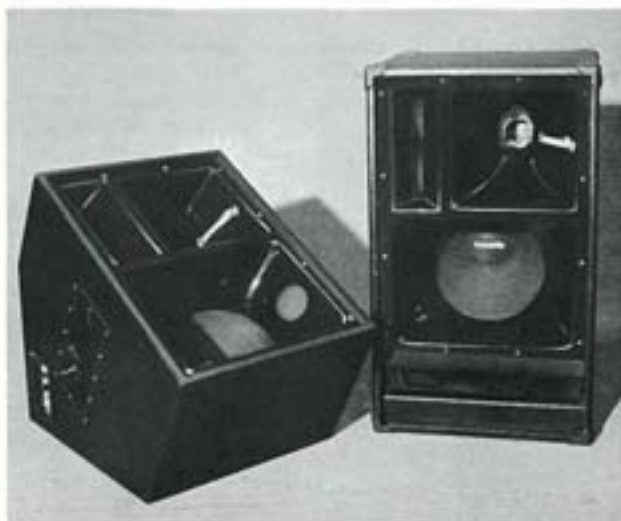
## Golden Scans for Hire

Mushroom Lighting of Northampton has purchased 16 Clay Paky Golden Scans for its ever-expanding hire stock. They are now on demonstration in the company's showroom.

# Traders in the art of sound

**Community**

**Value engineered performance  
loudspeaker systems and components**



Delivering high levels of output power projection ability and pattern control in compact, roadable enclosures. The RS systems are precision engineered, created for the most demanding professional applications and are distinguished by a singular appearance and an unparalleled performance.

Sole UK distributor:

**Tel: 01 749 2124**

THE SOUND DEPARTMENT LTD  
Askew Crescent Workshops  
Askew Crescent  
London W12 9DP

Fax: 01 749 8789

THE SOUND



DEPARTMENT

RM 325i and RS 327i

## Sydney's Lights Stay On

An interesting spin-off from Australia's Bicentennial celebrations last year was the innovative lighting which was developed for both city streets and parks and for special light and sound events during the year.

In Sydney, for example, visitors and residents alike have been so enthralled with the fairyland effects of lighting in the city's Macquarie Street and Hyde Park that the local authorities have decided to leave the lights in place for the next five years. The project was developed jointly by Lightmoves, who specialise in audio-visual presentations, and the State government's Public Works Department. The two groups worked closely to design and commission the arches, tree lights and small motifs which line many of the city's main streets.

For an overall cost of \$1.6 million, a relatively small portion of the city's budget for the Bicentennial year, the areas involved have been transformed. The once solemn Macquarie Street, previously deserted at night, is now a popular tourist attraction, and the normally quiet Hyde Park has become so popular since the fairy lights adorned the trees that it has become a major problem for police, with muggings up 50% on previous years!

In the process of developing the lighting for Hyde Park, Lightmoves and its Taiwanese supplier Techlite developed an entirely new method, enabling lamps to be plugged straight into the cord rather than into pre-moulded sockets. This allowed far greater flexibility in positioning the lights to achieve the desired effect. Techlite is currently marketing the innovation worldwide.

Illuminating the trees was a formidable task, involving more than 100km of wiring over 230 trees, some of them so high that a 210-foot cherry-picking machine had to be used to reach the top branches. In places where the cherry-picker was unable to gain access, Lightmoves told



Bicentennial lighting in Macquarie Street, Sydney.

L+S that professional tree climbers were hired to do the job. The company has been contracted to maintain the lights and periodically checks that they are free and not causing any damage to the trees. Maintenance costs are minimal because the new low voltage lighting gives up to 50,000 hours of globe life.

The street medallions, which featured Australian native flora and fauna, were designed by computer and illuminated using two different methods. One process used fluorescent 'Dips' which were plugged into 10mm mesh to make up

the desired pattern, then lit externally from an ultra violet light source a short distance away. The other process used Techlites, with coloured silicone caps covering the tiny 24 volt globes, plugged directly into fine electric cord.

In addition to the bicentennial lighting for Sydney, Lightmoves was also involved in World Expo 88 in Brisbane. "The company is unique in Australia because it offers such a wide scope of lighting and sound services, which is unmatched by any other single supplier in the country," said Rod Salmon, a director of Lightmoves.

$$C = \pi d \quad (\text{Archimedes: 250 B.C.})$$

$$F = M \cdot a \quad (\text{Newton: 1687 A.D.})$$

$$I = E/R \quad (\text{Ohm: 1827 A.D.})$$

$$E = mc^2 \quad (\text{Einstein: 1905 A.D.})$$

led to new possibilities in life

$$4 \times 2 = 1u \quad (\text{Citronic: 1988 A.D.})$$

can do the same for you.



### SPX5-41

the revolutionary new Dual Four-way State Variable Crossover  
from

**CITRONIC** PRO AUDIO

SUCCESS BREEDING SUCCESS

Citronic Limited  
Bowerhill, Melksham SN12 6UB  
Wiltshire, England  
Telephone (0225) 705600  
Telex 444131  
Fax (0225) 709639

# SOUND SUPPORT

*Light & Sound Design*

*SOUND adj. firm, solid,  
substantial, safe.*

*SOUND n. music, esp. rock,  
jazz or pop.*

## LIGHTING & STAGE TECHNOLOGY *redefined*

*From one of the world's leading  
concert lighting companies comes  
a fully integrated range of lighting  
instruments, trussing, colour  
change and motor control  
systems.*

*Designed, constructed and proven  
over many years by people who  
know what's needed to rig major  
tours.*

*L. & S. D. trussing and ground  
support is probably the toughest  
system in the business.*



Worldwide dealer distribution:-  
Presentation Consultants Ltd.,  
168 Chiltern Drive, Surbiton,  
Surrey KT5 8LS, England.  
Telephone 01-390 4841.  
Facsimile 01-390 4938.  
Telex 892337 CELCO G.

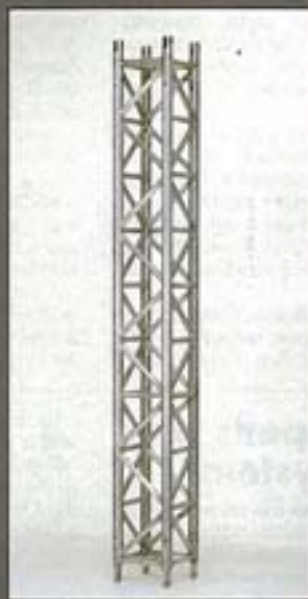
*Pre-rigged truss in trucking position (8'). Pre-rigged truss in hung position (4').*



*A-type general  
purpose truss.*



*E-type  
triangular  
truss.*



*F-type folding  
truss.*



*S-type square truss.*



## RAMSA Launch Interior Sound System

Pictured above in the Windsor Room at the Penta Hotel, Heathrow during Sound '89 are Ramsa's Ian Sharpe (left) and Chris Brown of M.B. Communications who took part in the launch of Ramsa's new Interior Sound System (see report in Sound '89 by Ben Duncan, pages 25-27).

## LDI Moves to Nashville

Faced with a newly aggressive union situation in Palm Springs, Lighting Dimensions International 89, the second annual international entertainment technology trade show for clubs, concerts, theatre, television and film has moved its next show to 'right-to-work' Nashville, Tennessee. The new dates are Friday, November 17 - Sunday November 19.

Over 78,000 square feet of exhibit and conference space is available at the Nashville Convention Center, and LDI are looking for another major success to top their first event at Dallas last November. The Center, with adjoining Stouffer's Nashville Hotel and the new Church Street Centre mall will constitute convention headquarters for LDI89.

Centrally located, the Convention Center allows easy access to Nashville's most colourful sights - the Tennessee Performing Arts Center, the

Ryman Auditorium, the General Jackson Riverboat and, of course, the world-famous Opryland and Grand Ole Opry. This fast-growing state capital is also home to a multi-billion-dollar recording, entertainment, film, and video industry. The Nashville Network is America's fourth largest producer of programming, exceeded only by three other commercial networks.

Among the highlights of LDI89 will be a series of workshops chaired by experts in the lighting, sound and special effects fields. Proposed seminars include: 'Dichroics: what are they and how can they be used'; 'Sound: wireless communications'; and 'Lasers: the pros and cons of simulated lasers'.

A dynamic floor plan of 'noisy' and 'quiet' zones is planned for LDI89, and of the 360 booth spaces available, 120 bookings have already been received by the organisers.

## Limelight Reopens with New Sound System

The Limelight, one of London's top entertainment venues will reopen on March 15th, having undergone a complete refurbishment. The interior has been redesigned and two contrasting dance floors have been created. The original church dome has been restored to become the central feature of the large dome dance floor and bar, while a more intimate club atmosphere is now available in the basement, 'Club Bar'.

The Sound Department won the contract to install a completely new system in the Club Bar, whilst at the same time reconfiguring and adding to the existing system in the dome. The brief for the Club Bar was to provide a high quality sound system, capable of producing an exciting sound at both high and ambient levels, whilst maintaining true fidelity. The system chosen was built around Community's CS Series flagships, the CS 70 and CS 60, the first being a full range, three way enclosure suspended high over the dance floor.

The original award-winning installation at Limelight was designed specifically to meet the

needs of recorded music, the new sound system has broadened the brief to cater for live requirements also. The Sound Department reconfigured the existing system and augmented it with Community's midrange compression loudspeaker, the M4, ideal for live vocal reinforcement and the first permanent installation of Community's products in the UK. The redesigned system now provides floor coverage and side fill for both live and recorded programmes. Rauch amplifiers, part of the original package, have been increased to cope with the more comprehensive facilities.

## Coemar for Hire

W.B. Lighting have announced the start of a 'Trade Hire' service for the Coemar range of special effects lighting equipment. Mike Wood, technical director, told L+SI that they will continue their successful policy of only supplying established trade customers: "We want to work with the existing lighting hire companies and fill this gap in the market for some of the more unusual lighting effects," he said. One of the first customers to use the service was Bruce Kirk of White Light, who used 8 'Robots' and 12 'Spartans' on a large rig for a major product launch in February.

## First Audio for Turbosound

First Audio Ltd, formed by ex-Turbosound marketing manager Tim Chapman, has recently been appointed exclusive UK distributors for Turbosound products. The company are also the UK agents for the Crest Audio range of amplification products. Tim Chapman told L+SI that the company intend to develop their portfolio of premier quality distributed products in the near future, but for the time being will concentrate on increasing trade availability of both Turbosound and Crest products.

First Audio will be appointing a number of local dealers specialising in the new TXD Series to augment the current network of Turbosound regional centres.

## Custom for Julianas

No less than 16 KEF CR200F Custom Series Loudspeakers have been installed at the Thistle Hotel, Tower Bridge, London. The speakers have all been flush-mounted into the ceilings of the bar and restaurant, which is used as a disco in the evenings. The CR200F is a full range two-way speaker incorporating the KEF 200mm (8") bass driver, closely mounted to the KEF 25mm (1") fluid cooled soft-dome tweeter. The tweeter has a self re-setting protection circuit.

Julianas Sound Services carried out the installation, and their technical director Tony Hamza told L+SI: "We needed high quality speakers that weren't conspicuous. The KEF Custom Series are absolutely ideal and we are delighted with their performance."

# STAGE LIGHTING

**STRAND  
SETTING THE  
INDUSTRY  
STANDARD  
WORLDWIDE**



**Minim F**  
500/300W Fresnel  
Spotlight

**Cantata I8/32**  
1200W Profile  
Spotlight

**Coda 500/3**  
500W Cyclorama  
Backlight

**Cadenza PC**  
2000W Prism Convex  
Spotlight

## DLA Show Success

The five-day 25th International Lightshow organised by the Decorative Lighting Association attracted visitors from a record 4,003 companies, almost a 10% increase on last year's previous best of 3,664. "We are still analysing the figures for the show but early indications are that the bulk of the increase of visiting firms are new contract buyers - specifiers, designers and architects," Lightshow Organiser John Tengwall told L+S. Commenting on the fact that returns from the Exhibitors also revealed excellent levels of business, 62% reporting good results, 32.5% fair and only 5.5% poor, he continued: "It confirms our claim that Lightshow is a unique event in Britain with the record 170-plus exhibitors offering lines which are relevant to both High Street retailers and commercial contract buyers."

## First from Society

Chartered designer Norman Gray looks set to establish a precedent for the PLASA Light & Sound Show '89. He is the first member of the Chartered Society of Designers to apply for stand space at the show, and he spoke to L+S about his motivations for doing so: "It makes sense for interior design to combine with lighting design. It's a natural evolution and will broaden the spectrum of the show even further. The whole of clubland attends and it will be beneficial in that many new contacts will be made and hopefully profile enhancement will give me a headstart for 1992."

Norman Gray is also applying for PLASA membership and if he joins he will become the first interior designer member of PLASA as such.

## Teatro in Malta

The Maltese Government has recently placed the contract for the consultancy, design and supply of technical facilities for the Mediterranean Congress Centre with ITC Light, Sound and Vision of Blata L-Bajda. The contract includes a total package of stage lighting for both the 1500 seat and the 450 seat theatres, as well as five other conference halls. Teatro of Italy is supplying the stage lighting and Arri (CB) an Imagine memory control system with a full complement of Arri dimmers. The centre will be opened in the summer and will be the latest in a list of successful projects for ITC Light, Sound and Vision.

## Audio Professionale

The Milan-based publishing company, Ediboga, who produce the magazine Disco & Dancing, have published 'The Professional Audio Annual'. The guide contains articles written by some of Italy's most experienced writers in the field and details all the professional audio equipment available on the Italian market. It's a publication which is carefully aimed, say Ediboga, at specific audio problems, across a wide spectrum of audio usage.

Within the manual, various technical characteristics have been unified in order to effect a direct comparison of different equipment. There is also a division into sectors and modules which



The 224-page 'Audio Professionale'.

show make, model, Italian importer/distributor, technical characteristics and application notes. For further information contact Ediboga srl on Milan (2) 225291/228429.

## Klark Teknik/Milab Marketing Deal

Klark Teknik Research have signed a 'strategic alliance' agreement with the manufacturers of Milab microphones in Sweden to undertake international marketing for their products. The addition of microphones is in line with the company's policy to widen its marketed portfolio. Milab is specifically known for its 'large diaphragm' dual membrane condenser microphones and manufactures a full range for performance applications. Sales and service for the Milab products will be organised through Klark Teknik and its appointed dealers for UK-based and international visiting users.

## ABTT Trade Show 89

The eleventh ABTT Trade Show for the theatre, entertainment and presentation industries will be presented by Theatrical Trading at the Riverside Studios, Hammersmith, London W6, from 18th to 20th May. The opening hours will be Thursday 18 May 10.00 - 18.00; Friday 19 May 10.00 - 19.00; Saturday 20 May 10.00 - 15.00. Further details and free admission tickets are available from: Theatrical Trading Ltd, 4 Great Pulteney Street, London, W1R 3DF. Telephone: 01-434 3901.

## Higher Profile

Hi-Profile Concepts of Helsby in Cheshire are increasing their activity in design and installation projects. They are at present installing a high

power Ramsa sound and video system in a new project in the centre of Leeds. The Observatory is being developed by Themes International plc, and Hi-Profile Concepts have supplied equipment for many of their projects. The company has also designed, and will be supplying and installing an elaborate outdoor PA system at Windsor Safari Park which will include over 100 speakers split into 5 zones.



Jan Stiles (left) of Canegreen with Bryan Grant of Britannia Row Productions.

## First UK Console Sale

The first UK sale of Ramsa's new SA-840 Series sound reinforcement console was cemented at the Sound '89 Show in February. PA hire company, Canegreen took delivery of their new desk in January from Britannia Row Productions, exclusive UK distributors for Ramsa consoles and promptly despatched it on Rick Astley's European tour.

## Playlight's Latest

Latest news from the new Playlight Film and Television Lighting operation is that the company supplied the lighting for the recent BAFTA Technical Awards for 1988 at Granada TV's Stage 1 studio in Manchester. Director Mike McMullan told L+S that they were delighted with the response to the new company since its launch earlier this year. In fact, all Playlight's various operations are "packed out with work".

For details of  
Advertising  
ring John Offord  
on 0323 642639



Galaxy 3  
The world's most  
sophisticated lighting  
control desk.

- Widest range of systems - Galaxy 3, Impact, Lightboard M, Gemini 2, Tempus, M24, Action 48, Act 6 to name but a few.
- Free lighting planning service.
- Extensive spares & service agency network.

**Strand  
Lighting**  
75 Years of Brilliance

Strand Lighting Limited, Grant Way,  
Syon Lane, Isleworth, Middlesex TW7 5QD  
Telephone: 01-560 3171  
Telex: 27976 Fax: 01-568 2103

# & MEMORY LIGHTING CONTROLS

Write to us for your copy of the Strandbook detailing our full range of products.

# THE SP2000

DESIGN TO YOUR NEEDS

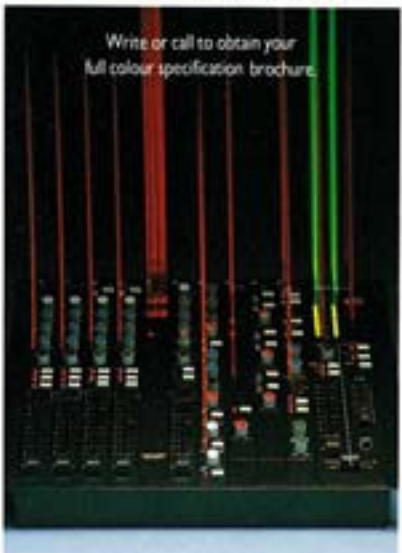


## SP2000 DESIGN TO YOUR NEEDS

The SP2000 is a high-tech innovative mixer. It combines a multitude of technical facilities with an audio clarity that is second to none.

The SP2000's system architecture is highly acclaimed. The operator has a choice of 3 chassis sizes, to hold 6, 10 or 20 module strips. There are no less than 8 module variations to choose from, including microprocessor BPM units, Zone controllers and modules specifically designed for live audio performances. Each module incorporates more features than existing products and a superb assignable crossfade is included on all the basic frames.

The SP2000 is equipped with many imaginative options and gives you total creative expression, control and flexibility. Consequently, whether you are a Radio Station, Nightclub or aspiring DJ, the SP2000 provides the ultimate solution to your system requirements.



Write or call to obtain your full colour specification brochure.

**HARRISON**  
INFORMATION TECHNOLOGY LTD

Unit 3, Button End, Harston, Cambridge CB2 5NX  
Tel: 0223 871711 (4 lines) Telex: 81687 HITCAM G  
Fax: 0223 872094



## Anyone for Optimusic?

The spider-like apparatus pictured above is the prototype of the Optimusic machine, which creates sounds when the special magnetic pads on the arms of dancers break the beams of light. The brain-child of musician Hagai Sigalov, who developed it with a friend, Andrew Park, the lighting system is connected to a computer, which in turn is joined to a synthesiser or other musical instrument.

The machine uses 16 lamps, each producing 16 chords, and it is possible to play up to 16 notes on each beam. It is currently geared to playing rock/funk music but in theory you could play anything.

Sigalov told L+SI he believes there is a market for such a machine as an elaborate 'toy' in clubs and discos or even as therapy for people with disabilities to learn perception and movement. It has taken 18 months to develop, has been seen on Tomorrow's World, and he is now looking for someone to market it.

Anyone interested should ring 01-455 5276.

## Rileys form Fabtronic

Dave and Sue Riley formerly of SIS, have formed a new company, Fabtronic Lighting with the help of Mel Henderson. The company has bought all the manufacturing rights from S.J.S., which is winding down its business. Fabtronic Lighting will be manufacturing the complete range of S.J.S., Revolver and Felstar range of products from their new unit on the Moulton Park Industrial Estate in Northampton. Products will be available from

stock from the middle of this month and new items are currently being developed. We understand the company is planning to mount a full display of its products at the PLASA Light and Sound Show in September.

## LMC take C-Audio UK

Following a deal signed at the Frankfurt Music Fair, the London Microphone Centre have been appointed as exclusive UK distributor for all C-Audio products. The move is especially significant as C-Audio are about to launch a new range of amplifiers, the RA Series.

In a separate deal, LMC have been officially appointed by Soundcraft Electronics as a dealer for the Series 6000 recording console. LMC are also supplying the dedicated MIDI computer system for the Series 6000 and to meet Soundcraft's standards a special demo room has been installed with fully trained staff to advise on all applications of the desk. The company is now seeking extra staff with studio experience to develop its activities in this field.

## More from The Sound Department

The Sound Department Ltd now has sole importation on Community, I.R.P., Intersonic's Servodrive and the MCA Combo from MS Audiotron. Director Steve Smith, told L+SI: "The exciting element of representing these companies is that there are a number of unique products, most notably Community's M4 4" throat mid-range compression loudspeaker together with the CB594 bass pattern control horn."

The Sound Department has several small installations currently in progress using Community products plus a major tour of 'Evita' which utilises exclusively Community RS327's and RS325's.

## Digital Audio Times

HJB Communications Ltd, formerly HJB Hire & Sales, have produced a newsletter, the 'Digital Audio Times', which covers the company's new products in detail, outlines latest plans and offers an insight into the company and its personnel.

Speaking about both the name change and the magazine, Ian Jones of HJB told L+SI: "We believe this name reflects our overall direction and are confident that it will not alter the widely-held view of HJB as Europe's leading supplier to the professional audio industry. As Digital Audio Times clearly suggests, 1989 looks set to be HJB's busiest year ever. Even so, we will be taking the time to establish a major presence at important industry exhibitions throughout the year."

# MINI MIST

## T U R B O

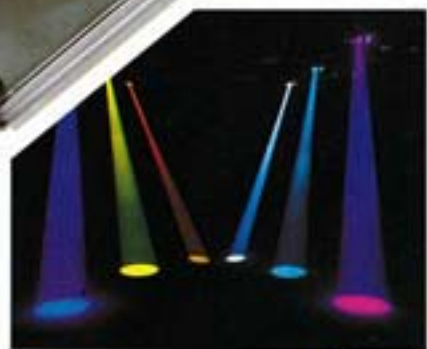
FLUID SMOKE MACHINE



- ▶ Now five times more powerful than before
- ▶ Small, compact hand held machine
- ▶ Can be used away from mains supply after initial heat up
- ▶ Fluid in handy, disposable canisters
- ▶ Remote control version also available
- ▶ For further details of full product range contact:

*LeMaitre* lighting and effects

316 Purley Way, Croydon CR0 4XJ Tel: 01-686 9258. Telex: 883220 Maitre G Fax: 01-680 3743



# GOLDEN SCAN. The absolute winner!

- Extremely reliable! No servo motors! Stepper motors only!!!
- Superbly sophisticated
- Completely computer controlled
- Beautifully designed
- Fantastic, ultra-rapid stroboscopic effects
- Colour change: six dichroic filters
- Three gobo patterns
- Remote-controlled iris
- Standard or wide-angle lens
- Lamp: HMI 575 - very high brightness - 49.000 flux/lm. (Version HMI 1.200 - 110.000 flux/lm).

**This is a Clay Paky challenge! Should you find a better product... Buy it!!!**



**PULSAR** Pulsar Light of Cambridge  
Henley Road, Cambridge, CB1 3EA - Tel. 0223/66798 - Tx. 81697

**CLAY PAKY** s.r.l.  
PROJECTORS AND LIGHT EFFECTS FOR DISCOTHEQUES  
Via Pascoli, 1 - PEDRENGO (Bergamo) Italy - Telefono 035/663965  
Tx. 301589 - 301032 BG EXP 1 MBOX. CLAY - Fax. Italy - 0335 - 665976

## For professional sound advice

Wigwam is a highly experienced company offering services and facilities which would normally only be found in London using the best equipment in the world.

### Sound Sales

We carry some of the largest stocks of equipment north of Watford. Northern agents for H.H. Electronics Power Amplifiers, Brook Siren Systems Control Equipment and Klark Teknics Effects.

### Accessories

Design and manufacture Multiway Cabling Systems or alternatively we can supply you with the components direct from stock.

### Permanent Installations

Custom designed systems for theatres, concert halls, discotheques etc.

### Sound Hire - Specialist Studio Effects

Everything from a digital reverb to a two channel mixer - 1987 Hire Catalogue available.

### Touring Services

Complete service provided for U.K. and International venues for audiences of 20-50,000.

### Associated Services

Lighting, Transport and speedy customs arrangements.



Meyer  
Sound Dealers



St Annes House, Ryecroft Avenue,  
Heywood, Lancashire, OL10 1QB

Tel: Mike Spratt, Chris Hill  
or Simon Campbell

on:  
0706-624547/68766  
FAX: 0706 65565

## PEOPLE

Independent staging company, Staging Post have appointed **Nick Lund** as their first marketing director. Previously with production company Upstream Event, his responsibilities will include all new business activity. Directors Otto Vokoun and Peter Robertson told L+S: "This represents an important step in the company's ongoing development, not only in terms of business generation but also in strengthening the overall client service we can offer."

Soundcraft have recently announced the appointment of **Chris Bishop** as technical sales engineer, replacing Miles Roberts who left to join Soundcraft UK dealer, Michael Stevens & Partners. Chris Bishop, previously Soundcraft's service manager, brings with him almost twelve years of experience within the pro-audio business, including time with both Lansdowne and Marquee recording studios. Since joining Soundcraft in 1983, he has been responsible for setting up and managing the company's worldwide service operation, and will be predominantly involved with providing technical product support to the 20-strong UK dealer network.

Roma Skinner relinquished her directorship of Autograph Sales on the 1st February to become a freelance sales and marketing consultant. Roma Skinner has 18 years of experience in export marketing, first as a director of Expotus and then

Autograph. Her first client is to be Autograph and, to go with her change in career, Roma is also changing her name and will in future be known as **Roma Vincent**.

**Dave Gardiner** is leaving A.C. Lighting to take up a new position as entertainment hire manager UK with Aggreko Generators Limited. This is a new emphasis by Aggreko to provide an even better service to the entertainment industry following their recent successful involvement in supplying the power for the Jean Michel Jarre extravaganza, 'Destination Docklands'. Dave Gardiner brings to Aggreko a wealth of practical experience in all aspects of the industry.

Soundcraft have also announced the appointment of **Iain Steel** as sales director, taking full responsibility for sales worldwide. He has spent the last five years within the computer industry and more recently as systems sales manager for Dowty PLC. Soundcraft's three territorial sales managers, and sales administration department will now be reporting directly to Iain Steel. With the recent announcement of the Seck product range coming under the wing of Soundcraft, he will play a key role in managing its integration into the existing Soundcraft product line.

Award winning disco record plugger **Theo Loyla** leaves his position of club promotions manager for national record promotion company Bullet Ltd., to take up a new job with Kent retailing chain Gatefield Sounds, where he will be based as manager. Mick Winch, managing director and founder of Gatefield told L+S: "We look forward to Theo joining the team and we hope that his knowledge and connections with the disco world will increase our trade in the Herne Bay area."

Gatefield's, which originally started from one shop in Faversham in 1972, plan to expand further in the South East, but no firm details are at present available. Theo Loyla took his Superjocks promotion service to Bullet in 1987 after previously working as a freelance and with Polydor and Disco Mix Club's Tony Prince. Theo Loyla hopes to continue his involvement as chairman of the DJ section of The Broadcasting & Entertainment Trades Alliance.

**Robert Wolff** has been named President of Artec Consultants Inc. the theatre design and acoustics consulting firm headquartered in New York. Robert Wolff, an acoustician and theatre consultant, joined the firm in 1970, has been its vice-president since 1980 and has served as Artec's project manager on many contracts. He is a founding member of the American Society of Theatre Consultants (ASTC) and a member of the United States Institute of Theatre Technology (USITT).

## SCOTT SOUND SYSTEMS

SPECIAL DEALS FOR DEALERS



Scott Sound Systems

Distributed by:  
Smithfield Electronics  
1 West Street, Hooles, Chester CH2 3PU  
Tel: (0244) 349062

Lighting+Sound  
Fax is (0323) 646905



## SALE POINTS U.K.

IMPORTER

### Pulsar Light of Cambridge

Henley Road, Cambridge, CB1 3EA  
Tel. 0223/66798 - Tx 81697

SALE POINTS

### CEREBRUM LIGHTING

168 Chillern Drive,  
SURBITON, SURREY KT5 8LS  
Tel: 01-390 0051

### AVITEC ELECTRONICS (UK) LTD

80/81 Walsworth Road,  
HITCHIN, HERTS, SE4 9SX  
Tel. 0462-58961

### LUTON SOUND & LIGHTING

88 Wellington Street  
LUTON, LU1 5AA - Tel. 0582-411733

### BATMINK GLASTONBURY WAREHOUSE

Silver Street  
GLASTONBURY, SOMERSET, BA16 8BT  
Tel. 0458-33186

### DIAL SOUND & LIGHTING

Wharfedale Road  
EUROWAY TRADING ESTATE  
BRADFORD, BD4 6SG  
Tel. 0274-651600

### STARDREAM LTD

Party House  
MOWBRAY DRIVE, BLACKPOOL, FY3 7JR  
Tel. 0253-302602

### SOUND ELECTRONICS

201/215 Jesmond Road  
NEWCASTLE UPON TYNE, NE2 1LA  
Tel. 0912-814248

### NIGHT FLIGHT SOUND & LIGHTING

Torwood  
BOWLING, GLASGOW, G60 5AB  
Tel. 0389-79261

### DISCO LAB

86, Dungannon Road  
COALISLAND, CO. TYRONE, N.I.  
Tel. 08687-40237

### LIGHTING DIMENSIONS

Unit 15A, Parkmore Ind. Est.  
LONGMILE ROAD, DUBLIN 12, EIRE  
Tel. 0001-520677

### WM REYNOLDS LTD

Raphoe CO DONEGAL, EIRE  
Tel. 010-353-74-45179

### CLAY PAKY<sub>INT</sub>

Via G. Pascoli, 1 - 24066 PEDRENGO (Bergamo) Italy  
Tel. 035/663985 - Fax: (0)35/665976  
Tlx. 301589 - 301032 BG EXP I MBOX: CLAY



# ***Crystal Scan:***

## ***the absolute No. 2***



Computer BBC



Modulator IV



Control desk



Computer Control



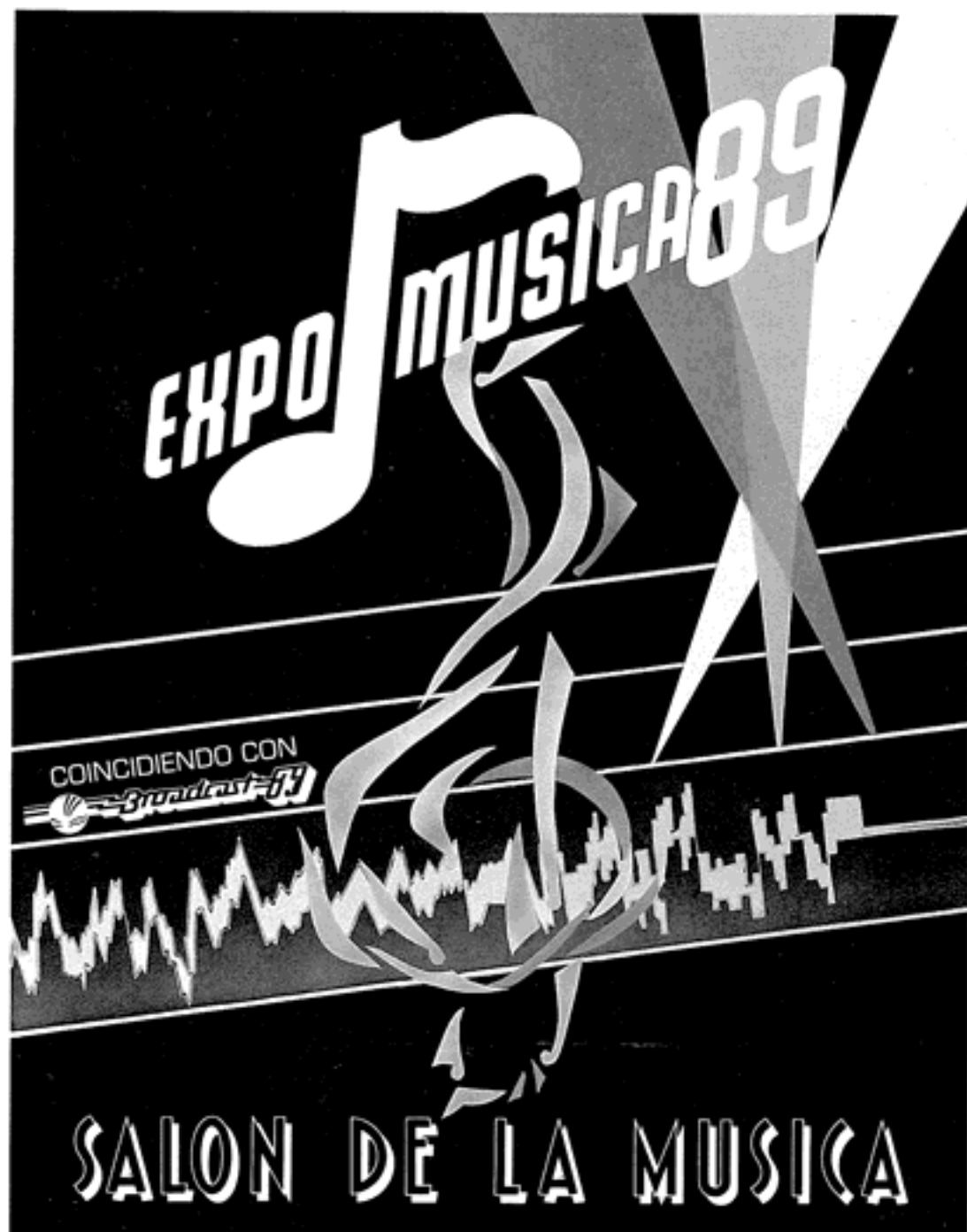
Extremely reliable! No servo motors! Stepper motors only!!!  Superbly sophisticated  Completely computer controlled  Beautifully designed  Fantastic, ultra-rapid stroboscopic effects  Colours change: six dichroic filters  Standard or wide-angle lens  Manual optional attachments include beam reducers, iris diaphragm and gobo holder  Controls systems By means of controllers with analogue signal 0-10 V or via computer with digital signal RS 232/423  Lamp: (version 36 V - 400 W - Flux/lm 14500 / SN 500-440 W - Flux/lm 26000 / HMI 575-575 W - Flux/lm 49000 / HMI 1200-1200 W - Flux/lm 110.000).

***Seen the Golden Scan?***  
***Crystal Scan reaches the venues happy to settle for a close second.***



**PULSAR** Pulsar Light of Cambridge  
 Henley Road, Cambridge, CB1 3EA - Tel. 0223/66798 - Tx. 81657

**CLAY PAKY** srl  
 PROJECTORS AND LIGHT EFFECTS FOR DISCOTHEQUES  
 Via Pascoli, 1 - PEDRENGO (Bergamo) Italy - Telefono 035/663965  
 Tx. 301589 - 307032 BG EXP1 MBOX. CLAY - Fax Italy - 02/35 - 665976



KIMO

EXPOMUSICA '89  
 Music Show  
 Dates: 17-20 May 1989  
 Schedule: 11:00 a.m. to 8:00 p.m.  
 Location: Fair Grounds, Casa de Campo  
 Madrid Spain  
 Participating Sectors: Professional Sound,  
 Musical Instruments,  
 and Spectacular Lighting.

Coinciding Trade Fair: BROADCAST -  
 Professional Equipment  
 for Radio and TV.

Information: IFEMA Madrid Trade Fair  
 Institution. Avda. de Portugal, s/n.  
 28011 MADRID. SPAIN P.O. Box  
 11.011 - 28080 MADRID. SPAIN.  
 Tels: 91/470 10 14 - 463 90 80  
 Tx.: 44025 - 41674 IFEMA E  
 Fax: 91/464 33 26

Organized by



INSTITUCION FERIAL DE MADRID

**IBERIA**  
 TRANSPORTISTA OFICIAL  
 OFFICIAL CARRIER

# A Great American Market

L+SI goes to Hollywood and looks at The Great American Market in operation. John Offord talked to Joe and Andrea Tawil, owners of GAM, who make a habit of bringing out innovative new products for the lighting industry.

The Great American Market is a great American family business. Owned by Joe and Andrea Tawil, the company is run under tight control, and thrives on discovering and even creating a niche for its products in the market place ahead of the competition. Having decided on a particular product to push, GAM goes out and markets it like mad. And having secured an order, will make sure it can be delivered from stock.

Joe Tawil isn't the type to deal in small numbers. Following his decision to launch the Access lighting control onto the world market, an immediate order for 1000 units was given to the manufacturer. Twos and threes aren't the name of Joe Tawil's game.

The company was formed in 1975, and in its 15 year history has been responsible for pushing the industry forward on the back of some innovative product introductions and ideas. Along the way it has built up a broad catalogue of equipment, materials and aids that are used in the entertainment industry world-wide.

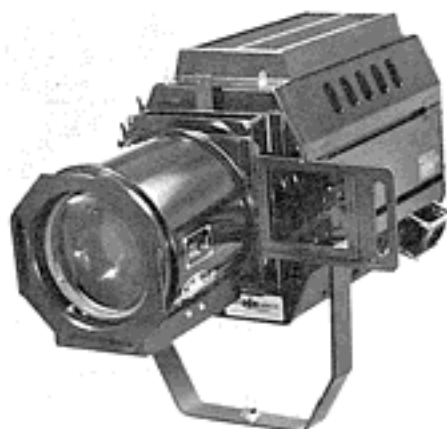
It all started with Patterns and the Scene Machine (more of which later), and a decision on Joe Tawil's part to go on his own after many years managing different corporate company machines.

He told me about the background to his

and Andrea's decision to set up their own business: "I was thoroughly disgusted with the companies I'd worked for, having continually tried to explain things to people who did not understand the industry, the application of products, what I was trying to do, where the opportunities lie, and where I thought the company could provide valuable service and products that would make money and make the company successful and grow. My vision was constantly impaired either by very petty minds, or by people who were just simply there when large corporations bought the company. They just didn't understand the industry we serviced. So I decided that if I was going to stay in the lighting business I would have to do my own thing."

What about the 'flavour' of those early days? How did Joe Tawil go about finding products? I set him talking about the fledgling company.

"We originally set out a criteria that we didn't want to compete with the companies I'd worked for before, and who were friends in the industry. So we had to find things that were totally unique. I didn't want to step on anyone's toes, and I wanted to do things that fell in the 'cracks'. In a large corporation, speciality items that I thought were in-

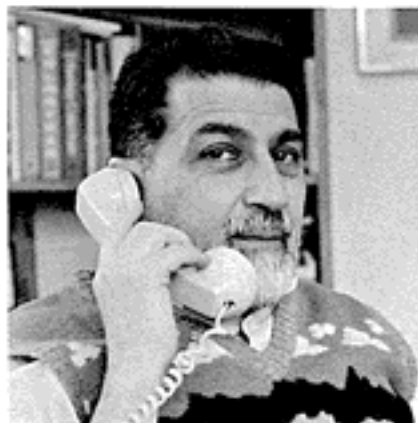


The Scene Machine modular projection system has been a major Great American Market product since 1975. Four models are available: 1000W, 2000W (above), Mini (600W) and 2.5kW HMI. In many cases, moving effect attachments, lenses and effects are interchangeable.

teresting like patterns could not be developed. When you have to sell a half-million dollar dimming system, who had the time to diddle with a nine dollar pattern or a four dollar sheet of gel? These things inevitably get lost. So I had in my mind that I wanted to develop the market potential and application of some of these smaller products.

"The flavour was kind of amusing in the early days. It all started from a 'phone in our bedroom and very little capital. Just four thousand dollars and an idea."

The first bit of magic from The Great



New Yorker Joe Tawil always had a special interest in lighting and studied lighting design as part of his technical production course at the Carnegie Institute of Technology. After his spell in the Army his first job was with Kliegl Bros as a sales engineer. He then joined the sales team of Century Lighting before becoming director of TV sales - "my first introduction into television lighting".

In 1965 he joined Colortran Industries which was sold the next year to Berkey, becoming Berkey Colortran. In 1969 he was appointed president of the company and moved to California, and in 1972 he moved to England for a year to run Berkey Colortran's Thetford operation. In 1975 he left to start the Great American Market.

His career highlights include "having the vision to introduce the first-ever polyester colour material (in 1969) against everyone's advice at the time". He had started the project in 1967 and put the product onto the market in May 1969 while he was president of Berkey. Whilst at Berkey he also introduced the Mini-

Pro: "It pioneered the highly-tooled, highly efficient, small quartz fixture". Also at the same period came the first lens-less followspot - the ColorSpot. "It was dropped later, but I still think it's an area of technology worth developing."

Next highlights were the Patterns and Scene Machine for The Great American Market. He put patterns into the market off the shelf: "previously they were not an 'available' product". Joe credits Jules Fisher for pushing him into it, but accepts the responsibility for making it work successfully. He considers the introduction of the Scene Machine brought an emphasis back to projection, in that it was small, compact and efficient, and could be used for a far wider range of applications.

In 1980 GAM launched the first rolling colour changer. Designed by Kenny Whitwright, Joe Tawil saw the potential of the Colormax (later to become the ColorWiz). "It was launched the same year as the Vari-Lite and both made a big impact," he said. "Now there are 20 people making them."

Next came Blackwrap, extensively used in the film and photographic industries in addition to theatre. This simple black-coated aluminium sheet has a hundred-and-one uses in the entertainment business.

Joe Tawil's latest is the Access lighting control system which he sees as a mass seller. "I see it as a low cost memory system that will obsolete the manual two scene preset completely. I decided to make it available at a very economical cost so that a community theatre and a school theatre could afford it. It's very highly efficient and compact, without all the bells and whistles."

Sales of Access since its introduction have proved Joe Tawil's point. "We are thinking in thousands, have seen a need and an opportunity and have set out to provide the technology to a market that would embrace it."



Great American steel projection Patterns for use in any ellipsoidal spotlight are used world-wide.



Joe and Andrea Tawil pictured during a GamColor 'teach-in'.



The ColorWiz/LightWiz combination for colour change, pan and tilt of lanterns.

American Market was the famous Scene Machine. Joe Tawil had a demonstration of the prototype in Los Angeles and immediately committed to 10 systems, which startled RDS, the Japanese manufacturers. "I had no money to pay for them," explained Joe, "but all were sold well before they arrived. In the first six months I couldn't get the systems fast enough."

"What we had was a revolution in the thinking of projection equipment. Up to that time a 5000 watt scenic projector put out so little light that I personally felt a lighting show didn't want anything to do with it. Along came the Scene Machine with a 1000 watt lamp and an ellipsoidal reflector, with heat filters and all the other interesting things RDS did, and the output was incredibly close to a 5k scenic projector. It blew away the 2k's and because of its size it could be hung on a pipe or used in a touring show. From an investment point of view it was also of interest

to rental shops."

Right on the heels of the Scene Machine came the Patterns. Having pioneered them with Colortran, who sold off the idea following a re-shuffle, Joe felt the idea would fall by the wayside if no one was going to promote it. "Andrea went ahead and designed a collection, and we went to market with it. In both cases, with the Scene Machine and the Patterns, it was fun for both of us in that it was a continuing educational process."

"We had to create a great deal of the market. We had to tell thousands and thousands of school teachers and technicians and community theatres, and we had some hysterical 'phone calls in the process. However, it was a satisfying feeling sharing the information with those who are not fortunate enough to be in New York and Broadway or in Los Angeles with the film industry."

Joe Tawil has always enjoyed the business, and even more so now he's got his own suc-

cessful company. "My philosophy has always been, let's make money and have fun," he told me. "I also say let's make money first because if you don't make money first, then you're not going to have any fun!"

"The nature of what we do in having to survive dictates that we have to make money. You also can't develop products and you can't service the client if you're not profitable. And one of the disasters I see in our industry today is that the major competitors are killing each other. When they're not shooting each others' heads off, they're busy shooting themselves in the foot."

"The result is that the user can't get service of a product. When he calls and needs information there is nobody there because they can't afford people to give information out. People who buy products from marginal companies that soon disappear are going to be very sorry, because they will be sitting with products they can't get parts for."



Joe Tawil with the American Society of Lighting Designers' 'Award of Outstanding Achievement in Engineering Development' for Gam Color.



Familiar industry face: Bob Gordon, GAM's sales manager.



Andrea Tawil visits RDS in Japan. In picture (left to right) are Mr. Ikeda (projector designer), Mr. Ishii (plant manager) and Mr. K. Ryu, president of RDS.



Seminars are a regular feature of the Tawil's life-style. Here Andrea Tawil talks to students at Beijing Academy of Dramatic Arts. Wen Hai Ma is in the chair.

Trained in the theatre, and admitting to having been a theatre snob when he started, Joe Tawil has seen the obvious need to service an ever-widening industry, although he emphasised to me the importance of a training in the broad sense of theatrical production and lighting skills. His willingness to 'cross over' meant more products could be considered for GAM's ever-growing list, and it was good business sense, too.

"In the summer of 1980 I met Kenny Whitwright who showed me a rolling colour changer with 12 colours that he was trying to sell, without success. I immediately saw it as an enhancement for the lighting designer. Although colour changers had been around for years, the rolling colour changer was an innovative idea. Having said that, the French used to make dyed silk scrolls and crank them by hand. All we've done is add a motor to it. Sometimes it's slow progress in our industry! However, I believed in it, and put my money where my mouth was."

ColorMax, as it was known, had its early troubles, but out of it came the highly successful ColorWiz system which gave GAM a



HQ of The Great American Market on North Cole Avenue, Hollywood.

The 'artistic' member of the Tawil team, **Andrea Tawil** was born in Wilmington, Delaware, and went straight to the Drama Department of Carnegie Institute of Technology after high school. She had already involved herself in theatre in both school productions and summer stock in a number of theatres, both professional and amateur. At Carnegie she studied stage design for four years, and met Joe Tawil there, along with many other personalities well known in the industry today. "We made a number of friends who are still friends today. Jules Fisher, for instance, was in Joe's class," she told me.

"I then had a grant to do graduate work on the Commedia in Italy, but I threw it back and married Joe instead! I decided not to become an intellectual! I then had four children and raised them, as being an only child I wanted a bunch of kids."

When The Great American Market started the family had just moved to Los Angeles, and her youngest daughter Rachel (now in the business) had just started school. "We had a pool in the yard," explained Andrea, "and I entered my own G&T set. However, Joe told me the sun was melting my brain, so I began work in the business."

Her first task was to sort out the literature and graphics for GAM, something she still does most efficiently to this day. The came the Scene Machine, and it changed her life. "I didn't have much faith in it until I turned it on," she said. "It looked like it had been made in 1930 something. It came with some spare paint, and I began by painting some sunsets on glass and also designed steel patterns."

That was the beginning of a major involvement between Andrea Tawil, GAM and the lighting design business. Bill McManus of McManus Enterprises started to use a Scene Machine right away and took it on the road for rock and roll. "It took people by storm," said Andrea, "and then he wanted to make 'real pictures'. 'Can you draw small,' he asked me. I then worked on a Manhattan skyline and things snowballed from there. People came knocking on my door. I didn't have to come into the industry at entry level, and my first clients in rock and roll were John Denver and Billy Joel."

Theatre was the next step, and Broadway. Lighting designer Ken Billington was working on 'On The Twentieth Century' and the staging required a moving scenery background to complement the action in the carriage on stage. It required moving effects of trees and telegraph poles - all created through the Scene Machine. "It ended up with Ken Billington becoming one of the theatres' resident experts on projection," explained Andrea.

At many stages of the development and introduction of products at GAM, Andrea Tawil has been busy behind the scenes co-ordinating design and quality control. The now established range of Patterns owes its design and quality features to her persistence on maintaining the most exacting standards.

"I started hanging out in the etching shops to learn the processes. We had had trouble finding a shop that would take us seriously, and we were very concerned about quality. I became very knowledgeable about the subject." In a similar manner, she learned a lot about graphics from 'hanging about' at the print shop.

Probably her most satisfying achievement in the business has been the successful launch of Gam Color. "I had wanted to do colour for ten years, but Joe said 'no'. I thought colour was fun, and knew a lot about it in a classical, disciplined way, and I thought it was a natural avenue for our business. I eventually got the go-ahead."

When Gam Color was launched in October 1987 it even shocked Joe and Andrea's staff at the office. The whole project had been wrapped in total secrecy, right through to the extent of 'fictitious' space in the warehouse for a

'fog machine' and so on. It was the Tawil's new baby, and they wanted to make sure its birth had the maximum impact and protection.

It had meant many long nights of work at home for Andrea, and frequent 'quiet' trips to the East Coast where research and production was established. And once again Andrea was closely involved with production.

"I stood by the dyeing machines and learned what they do. I felt that I should know about the problems, just as I had with the patterns. The chemistry had to be learned, and I was reading new graphs. Despite the help from computers to aid readings, the human eye sees things differently, and I pay a great deal of attention to eye-balling. New equipment is helpful, but real people watch shows."

Andrea Tawil has a great respect for her clients and customers and loves the collaborative nature of the industry. "It's good to contribute something to it, and I admit I've got a soft spot for the rock and roll industry. It was very good to me when I started."

"One of my aspirations is to try painting on canvas, but my daughter Rachel told me I wouldn't be able to paint anything over 4" x 5"! On the other hand I don't think I could paint a scenic backdrop any more either!"



Andrea at work on a country scene backdrop for a Debbie Reynolds' tour in the late 70's.



Three hand painted glass slides were used for this Christopher Cross tour.



Andrea Tawil and Allen Branton discuss a 2k Scene Machine design for the Rolling Stones 1981 tour.



Christopher Cross again, with hand-painted projection of playing cards using one glass slide.



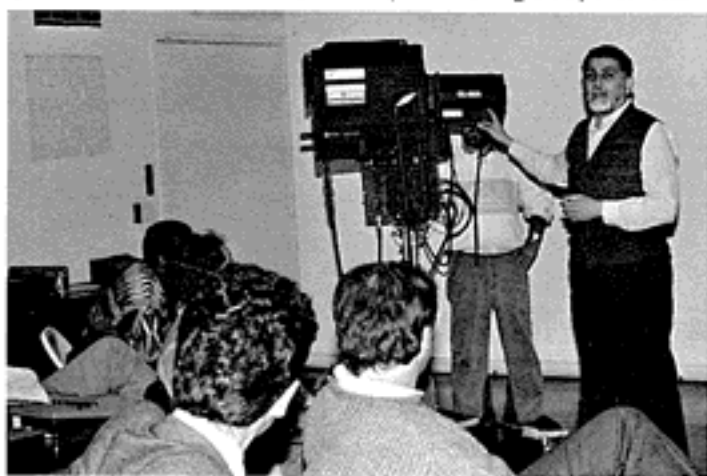
Packing rush - members of the GAM team concentrate on despatch. Careful stock control ensures the vast majority of orders are dealt with immediately.



Andrea and Rachel Tawil with the office centre-piece - a 1932 carbon arc followspot manufactured by the Chicago Cinema Equipment Co. and formerly in the Fox Theatre in Phoenix, Arizona (in full working order) until 1972.



Part of the general office at The Great American Market.



Joe Tawil explains the new HMI-2500 Scene machine to a group of GAM dealers.

# ACCESS



- VDU with multiple display screens
- Multiple, independantly sequencable, playbacks
- Sub-masters with 'bump' buttons
- Dimmer patching and multiple dimmer drive options
- Unlimited multiple speed chaser capability
- Soft function keys - personal computer style
- Unique cue card library storage

ACCESS offers all the main features of the largest lighting consoles for the price of an equivalent manual board - and in an easily transportable or permanent format.

**NOW AVAILABLE IN UK FROM**

**furse**  
theatre products

TRAFFIC STREET NOTTINGHAM NG2 1NE Tel: 0602 862722 Fax: 0602 862546

head start in the colour change race. To add pan and tilt to the colour change option, LightWiz was introduced, and the combination is now one of the industry standards for remote control of luminaires.

The Great American Market's biggest investment to date has been the launch of GamColor. Consisting of a full range of deep-dyed polyester colour filters and Cinefilter correction colours for use in television, film and still photography, its has cost Joe and Andrea Tawil an investment of \$500,000 to bring GamColor to the world market.

"It was certainly no small commitment for a company of our size," said Joe, "but we obviously see a lot of potential. I see an expanding market for colour, and I see an expanding market for a superior product - so we jumped in on the opportunity."

Straight after GamColor came the launch of the Access lighting control system, putting

GAM in yet another area of the business. It grew out of a meeting between Joe Tawil and Gordon Pearlman of Entertainment Technology Inc. during a trip to China in 1987. Joe explained what he had in mind, and Gordon Pearlman's response was immediate: "I can do that right now," he said.

The timing was fast. The whole project took just a year from the date of the first meeting. "What I admire about Gordon Pearlman is that he clearly understands the market and the industry we service," explained Joe Tawil. "He has a point of view about it, and I like his philosophy. From the mere suggestion of the idea of Access, from the first proposal and sketch and costings took just a year. We were within one week of our schedule, and that was remarkable.

"The other thing was that the product did more than we first bargained for. Gordon kept enhancing it and giving it more features

than we'd originally planned."

With a massive home market to rely on, many American companies have been on the lazy side when it comes to export, and with most manufacturers it accounts for the smaller proportion of turnover - the exact reverse of their European counterparts.

Great American Market exports are now approaching 30% of turnover and increasing fast. "We didn't have a lot of muscle in the early days," said Joe Tawil, "but in the last few years we've stepped things up considerably.

"Given the de-valuation of the dollar, American products should be very attractive to anybody today. Certainly there is a lot of very fine equipment being made in the US. There are some wonderful American companies that just don't seem know about the possibilities, but if they get their act together they could be tough competitors. My predic-



A close-up of the LightWiz remote control yoke.



Sales representative Luis Walsh gets ready to send off another Access control system.



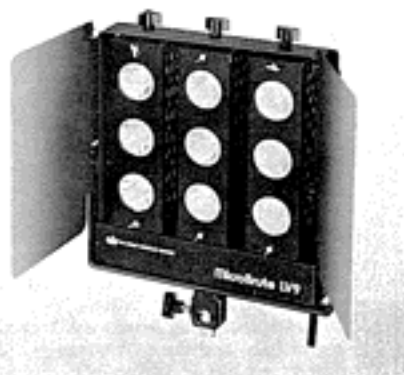
Blackwrap: a simple products with 101 uses.



GAM's popular SPE-3 fire flicker generator has random programming for achievement of highly realistic effects.



Designer Kenny Whitright with ColorWiz.



MicroBrute is a high efficiency 9-light unit.



ColorWiz and GamColor.



Rachel Tawil checks a batch of Patterns.

## Computerised Control for the Mass Market



The Great American Market's new Access computer lighting control board is a compact 48-channel system that will support up to 256 dimmers, depending on output format. Its cue memory capacity is 232 full-sized cues, 464 with removable library storage. Features include six fully overlapping submasters with flash buttons, manual split dipless crossfader, two independent time faders with separate cue assignments, dynamic CRT 'cue sheet', and a choice of eight menu-selectable output formats.

Joe Tawil claims that Access is a breakthrough in technology and cost. "It is rugged, durable and small, yet has all the flexibility designers ask

for. Also it is compatible with all dimming systems," he told L+S.

Access was designed by Gordon Pearlman of Entertainment Technology Inc. and it meant a new approach to the manufacture of lighting control boards. "Access taught us a tremendous amount about how to make the production simple so that it was easy to manufacture, and also we had to make sure they came off the end of the line working every single time," he said.

"We set out to design a system that was very easy to use, very reliable and had absolutely no parts in it. In the electronics business the trick is to get the parts count down because that's how



Joe Tawil with Gordon Pearlman (right) and Access at Photokina in October last year.

you save cost. The funny thing was that in order to save money we decided to add soft function keys to do almost everything. As it turned out it made the machine much easier to operate because there were only six buttons you could ever push. Basically we've eliminated a lot of the things that people said had to be on a little console, and we drew some very tight lines when we designed the product."

The design philosophy seems to be working. The Great American Market sold over 250 Access boards in the three months following its launch, and they're now being seen in Europe. They are available in the UK from Furse Theatre Products.

tion is that companies now in the market place will seem to have sprung up overnight, and will take the lead with interesting new products. The big companies won't scare the little guy out if he is determined to provide quality and service in the market place.

"As far as The Great American Market is concerned I'm an eternal optimist! We took a 40 per cent jump in sales last year, and we're projecting a 30 per cent jump this year. We see a continual growth in products

that we have introduced into the market place.

"In the coming year most of our effort will be in the upgrade of existing products. Access will have an upgrade from 48 to 96 channels, and the GamColor range will number 110 colours this month. Looking ahead, there are other new products which I can't discuss yet, but we'll certainly be doing new things and continuing to contribute in a creative way to the industry.

"We're finding new opportunities where people haven't found them before. With Access, for instance, no one thought you could do something at such an economical price with such quality and fidelity, and that's part of the picture. Also, we continue to maintain the service aspect, and I think we do that better than anybody else.

"We take great pride in the fact that when you need it, we've got it. We understand the nature of showbusiness. It's a **now** business."

## The LSX - For Sale or Hire

The LSX Low Smoke Converter converts the smoke output of either the Le Maitre Powermist or Smoke Processor machines into a low-laying cloud.

The effect created is very similar to that of using dry ice, but removes the hassle of boiling water and cardice.

Cloud density, depth, and the area covered are all controllable by using the variable settings on the LSX in conjunction with the variable flow feature of the related smoke machine.

The LSX should be floor-standing, but with the converter and accompanying machine raised, a waterfall effect can be created.

Size: 84cm(W) x 69cm(D) x 69cm(H) Weight: 80kg  
Supply Fuse Rating: 13A

### For Sale . . .

RRP £1,499 (exc. VAT). Available from all major Le Maitre distributors. For details of your nearest distributor phone 01-686 9258.

### For Hire . . .

For hire rates and full details, phone Le Maitre Hire & Professional Services on 01-688 0440.

Le Maitre Lighting and Effects Ltd  
316 Purley Way, Croydon CR0 4XJ  
Telephone: 01-686 9258 Fax: 01-680 3743  
Telex: 883220 Maitre G

*Le Maitre*  
lighting and effects



## Ben Duncan samples **SOUND 89** at the Heathrow Penta

This year's 'Professional Sound Show' was staged at the Heathrow Penta hotel from 20th-22nd of February. Organised directly by the **Sound & Communications Industry Federation**, it attracted 50 exhibitors and 1315 registrations were recorded at the desk. The show included four seminar sessions covering digital technology, induction loop standards, the responsibilities of contractors and a solar-powered PA at the Royal Hong Kong Jockey Club.

Exhibitors included **Audilec**, who've recently become the sole UK distributor for **RCF** drive-units and loudspeaker enclosures. The new RCF range of installation enclosures comes with a range of finishings and fittings. Flying tackle is also available. **Audilec** have also been appointed a distributor of **Carver** amplifiers by **HW International**.

**Bose** had a multi-disc CD player on their stand, providing up to six hours of continuous music from a range of standard CD selections, compiled to suit a variety of musical tastes. **Canadian Instruments & Electronics** were showing **Telex** radio microphones. Also on display was the **Soundsphere**, a unique, omni-directional loudspeaker made in Canada, that's been around 'on the quiet' for over 10 years. For readers who haven't seen one before, it's a white plastic sphere around 1m/3' in diameter, punctuated by a number of drive units, with a diffuser bowl attached to the base.



Celestion on display at Sound 89.

Celestion displayed the **SR Compact** and **SR=**, which are new additions to their **SR** series of processor-based PA speakers. The **SR Compact** is a miniature enclosure suited to 'in-fill' in clubs and discos, and for distributed sound in restaurants and shops. It's fitted with a single 5" driver, specially developed to handle a nominal 100 watts of full range audio. The **SC3** is a scaled-up version, with a specially developed 8" full-range driver. Power handling is 150 watts with the **SRC3** controller (which provides correct EQ), or 250 watts when used in conjunction with

the **SRC1** unit, which provides not just EQ, but also intelligent protection circuitry. Celestion's component catalogue has also been revamped to make their selection of drive-units more clear cut.

**First Audio** have recently been appointed exclusive UK distributors for **Turbosound** speakers and for **Crest** power amplifiers. They've just supplied Turbosound's new **TXD** enclosures to **Electromusic** for installation in the meeting/chanting room of the Nichiren Shoshu, a Buddhist order based in Berkshire. **Chichester Festival Theatre** is another recent **TXD** installation. **Hill Audio** have recently appointed **Derek West** as UK sales manager. Hill were previewing the **LC Series**, a new range of power amplifiers based on their long-standing **DX** range. Scheduled for release in April, the **LC** models include a pluggable, modular output stage for ease of repair and **XLR** and **jack** inputs together with a barrier strip carrying both inputs and outputs, as preferred by some contractors. Protection facilities have been extended to cover most eventualities. The **LC** series also has a remote muting capability and a number of plug-in options, namely input balancing transformers, limiter cards and a **VCA** for remote and/or ganged gain control.

**HW International** had the latest addition to the **Carver** amplifier range on show. The **PM100** is 1U high and produces around 110 wpc into eight ohms. It can also be used in series and parallel mono modes, for over 200 watts into eight and two ohms respectively. Other new products included **Discovery** mixers from Italy, for 'MF' and club use. Decked out in pastel shades, the **MC** and **PM** ranges span 8 to 24 channels and include powered models with up to 350 watts of stereo amplification on board. Prices are keen, with 16 channels costing just under £1000 to the end-user. The same 16-channel unit costs £1545 with the integral amplification. **HW** have just launched their own range



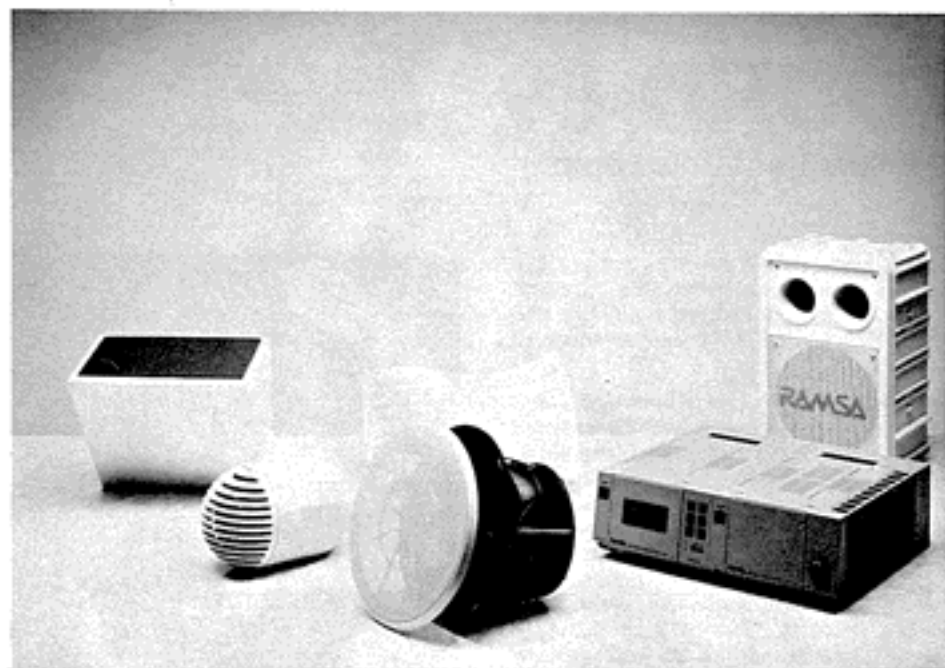
The **JBL 2450J** compression driver using a neodymium magnet.

of radio mics, manufactured to their specification in the UK by **Trantec**. The system includes an aerial distribution unit allowing four **S2 autodiversity** receivers to be fed from a pair of antennae. It contains an **RF** pre-amplifier to increase range and also powers four receivers.

Loudspeaker design boffins at **JBL** were demonstrating how they engineered some of **JBL's** most recent technological strides in an educational video shown on **Harman UK's** stand. Having recently acquired **Midas**, **Klark Teknik** have re-engineered the new **XL2** console to make it more 'producible' and so overcome the backlog of orders that has built up since it was launched. **Klark Teknik** had some new processors on display. **DN500** is a dual compressor/limiter/expander-cum-peak-clipper. **DN510** is a dual gate which promises lots of creative scope. There's a **MIDI** interface, remote **DC** trigger inputs and a 'mask' function which removes offbeats, drum fills or echo; or creates accents. There's also a ducking function that



**Klark Teknik's DN500** compressor/limiter/expander (top) and the **DN514** 4-channel gate.



RAMSA's new 'Interior Sound System' component parts.

can be keyed externally from a dominant track. **DN514** is a 4-channel gate with fewer features than **DN510**, but then it's designed for rapid set-up. Nevertheless, it packs in a unique 'sync' function and two semi-automatic attack modes.

In the Windsor Room, **Ramsa** were busy launching an innovative package of background music equipment designed to produce the kind of sonic qualities that are preferred for 'mood music' in shops, boutiques and commercial premises. The new system begins with the **WA-M50**, a stylish plastic enclosure which contains four 50 watt power amplifiers, pre-amplification and signal processing. Controls are hidden behind a fold-down panel.

The installer can choose 'Air sound' or 'Foreground music'. Both are achieved by digital processing. According to Ramsa's brochure, 'Air sound' is produced by mixing the stereo with digitally delayed components to create a diffuse image. With 'Foreground music', it appears (the translation from the Japanese gets a bit muddled at this point!) that a time/level/frequency-conscious dynamic expander is said to increase apparent loudness. For straightforward use, both processes can be switched out. Also included on the **WA-M560** are four line inputs, two video inputs, a mic input, bass 'n' treble EQ and a sub-woofer output.

**WB-C10** is a matching cassette player with auto-reverse. A timer indicates the total operating time so the operator knows when it's time to call in the service engineer to clean the mechanism or change the heads. The system includes three types of loudspeaker. **WS-K30** is white and shaped like a wedge of cheese. It is intended for use when **WA-M50** is used in 'Air sound' mode. Mounted high on the wall, its shape causes the sound field to be reflected off the wall and ceiling, so the source of spacy 'Air sound' becomes doubly diffuse and incognito.

The **WS-K10** are made to suit the 'Foreground music' option. They're also moulded from plastic but are styled like the spot lamps used in boutiques. Ramsa's brochure claims 'soft, easy listening with virtually no imposing sound to interrupt conversation', which seems to contradict their description of the 'Foreground music' processor's action. **WS-K20** is a ceiling speaker which provides everyday 'direct' sound. It

contains a 120mm/4½" driver, nominally rated at 160 watts. Uniquely, its direction can be angled up to 20° from the orthogonal. Finally, **WS-K40** uses a ported 7½" driver (rated at 200 watts!) to provide a measure of extended bass capability, but no real lows, because the quoted response is -20dB down at 50Hz. Why use such a tiny driver? Well, because the enclosure and drive-unit are so small, bass output is omnidirectional. Again, the emphasis is on disguising the apparent source of the music.



The Community CS Series loudspeakers from The Sound Department.

The **Sound Department** were exhibiting for the first time, having expanded their operations from theatre sound rentals into PA installation over the past year. They were displaying selected Community loudspeaker components and cabinets. Hailing from the US east coast, **Community Light & Sound** are one of the world's most innovative PA speaker manufacturers. It was not, however, until The Sound Department began to represent them, that they became known in the UK. The display included highly cost-effective 2 and 3-way horn loaded cabinets and some fairly conventional 'Pattern Control' (a.k.a. CD) horns. Also on display was Community's **M4**, a unique, ultra

high power, low distortion midrange compression driver. Community also produce the only horn flare in the world for achieving long throw pattern control with 15" and 18" bass drivers.

**ServOdrive** is another US maker whose products are readily available to UK sound contractors now The Sound Department has taken on distribution. In ServOdrive's bass bins, the drivers have cones, but no coils or magnets. . . Instead, an ultra-fast servo motor provides inherently linear cone movement, with a maximum of 1dB of power compression at high levels (compared to 3 to 10dB for conventional drive-units). As a result, bass reproduction is less distorted and less amplifier power should be needed for a given high SPL of sub-bass. The ServOdrive mechanism is available in a variety of 'industry standard' cabinet configurations, both IB and horn-loaded kinds. Yet another innovative unit from the USA is **Industrial Research Product's** modular processing package, **System 41**. Its extensive list of plug-in cards includes their acclaimed **transversal EQ**. Unlike everyday EQ filters in graphic equalisers, this technology promises to provide EQ with zero phase-error. The Sound Department also had **Rauch Precision's** range of compact, 'bombproof' power amplifiers racked up, having recently become a distributor.

**TOA** are poised to break into the heavy-duty, long-throw end of sound reinforcement installations with 'UD' (uniform directivity) horns. Apart from side-stepping the patents held by EV and JBL on **constant directivity** horn technology, is UD a step forward? Judging by B&K plots supplied by **TOA UK** for their LE640, a 60° x 40° model, pattern control is remarkably constant within +/-4° in both h and v across 3½ octaves, from below 1kHz to 8kHz and beyond. And judging by Audilec's newsletter, TOA's range of disco speakers (launched at the Professional Light & Sound Show '88) which employ short-throw CD horns are now available.

TOA were also displaying some 'fashion' speakers to rival Ramsa's chic. Prize for the most cosmic loudspeaker shape goes to TOA's **F10**, an isosceles pyramid with a triangular base and a triad of flashing LEDs. Three F10's can be brought together to form a beacon-shaped 'greater pyramid' which tricks the eye and produces near omnidirectional sound. When suspended upside down off a wall bracket, the 'array of three' looks deadly Parisien - the stuff for hotel lobbies and elongated club bars.

**Tunewell Transformers** are better known on the lighting side as suppliers of hi-tech neon systems. They also specialise in producing multi-kilowatt linear Mosfet amplifiers for scientific and industrial purposes. Designer Phil Rimmer has been busy developing an audio line. Their **A1000** amplifier drives 100 volt lines directly or delivers 1200 watts into low impedances. The constituent modules are also available for OEM.

At the opposite end of the scale, **A100** is a compact, 'half-rack width' 100w into 8 ohm amplifier containing facilities that should prove useful to commercial PA installers. Included are mic ducking, a fast-attack limiter and a 'remotable' VCA volume control. All controls are hidden behind a security cover made of heavy folded steel. The A100 provides a 100v line operation in conjunction with **S100**, a solidly constructed speaker enclosure using **Volt Loudspeakers'** unique high impedance drive units.

New from **Turbosound**, the **TXD-518** is an 18" bass enclosure configured to augment

**FARRAH**  
the professionals



## APOGEE NOW IN U.K.

Farrah has been appointed as distributor for APOGEE loudspeakers in a wide range of professional applications. The APOGEE range includes the APOGEE 100, APOGEE 150, APOGEE 200, APOGEE 300, APOGEE 400, APOGEE 500, APOGEE 600, APOGEE 700, APOGEE 800, APOGEE 900, APOGEE 1000, APOGEE 1100, APOGEE 1200, APOGEE 1300, APOGEE 1400, APOGEE 1500, APOGEE 1600, APOGEE 1700, APOGEE 1800, APOGEE 1900, APOGEE 2000, APOGEE 2100, APOGEE 2200, APOGEE 2300, APOGEE 2400, APOGEE 2500, APOGEE 2600, APOGEE 2700, APOGEE 2800, APOGEE 2900, APOGEE 3000, APOGEE 3100, APOGEE 3200, APOGEE 3300, APOGEE 3400, APOGEE 3500, APOGEE 3600, APOGEE 3700, APOGEE 3800, APOGEE 3900, APOGEE 4000, APOGEE 4100, APOGEE 4200, APOGEE 4300, APOGEE 4400, APOGEE 4500, APOGEE 4600, APOGEE 4700, APOGEE 4800, APOGEE 4900, APOGEE 5000, APOGEE 5100, APOGEE 5200, APOGEE 5300, APOGEE 5400, APOGEE 5500, APOGEE 5600, APOGEE 5700, APOGEE 5800, APOGEE 5900, APOGEE 6000, APOGEE 6100, APOGEE 6200, APOGEE 6300, APOGEE 6400, APOGEE 6500, APOGEE 6600, APOGEE 6700, APOGEE 6800, APOGEE 6900, APOGEE 7000, APOGEE 7100, APOGEE 7200, APOGEE 7300, APOGEE 7400, APOGEE 7500, APOGEE 7600, APOGEE 7700, APOGEE 7800, APOGEE 7900, APOGEE 8000, APOGEE 8100, APOGEE 8200, APOGEE 8300, APOGEE 8400, APOGEE 8500, APOGEE 8600, APOGEE 8700, APOGEE 8800, APOGEE 8900, APOGEE 9000, APOGEE 9100, APOGEE 9200, APOGEE 9300, APOGEE 9400, APOGEE 9500, APOGEE 9600, APOGEE 9700, APOGEE 9800, APOGEE 9900, APOGEE 10000.



**APOGEE**  
SOUND INC.



### News from Farrahs

Illustrated above is a copy of 'the LIVE file' from Farrahs. Formerly Paul Farrah Sound, the new 'Farrahs' badge covers the company's operations in both London and Los Angeles. They are UK distributors for the Apogee range of loudspeakers in addition to providing an off-the-shelf service of numerous top brand sound products.

the other models in the TXD range of IB speakers. Producing 102dB at 1w @ 1m without electronic processing, it can be driven in both active and passive mode. **TMW-210** is an ultra-compact, low profile wedge monitor handling 500w of pro-



The loudspeaker line-up from Volt Loudspeakers.

gramme and ideal for broadcast and film foldback applications.

Containing two 10" drivers and a conical hf horn, it's packed into an enclosure that's only 10 1/2" / 275mm high. Weighing just 33lbs/15kg, it also looks promising when ease of portability is required. Richard Frankson, Turbosound's marketing director, reports: "The show has brought us lots of enquiries and orders for TXD enclosures." The last word goes to Ken Walker, the S&CIF's mentor: "Attendance was up. But just as important, exhibitors were happy with the

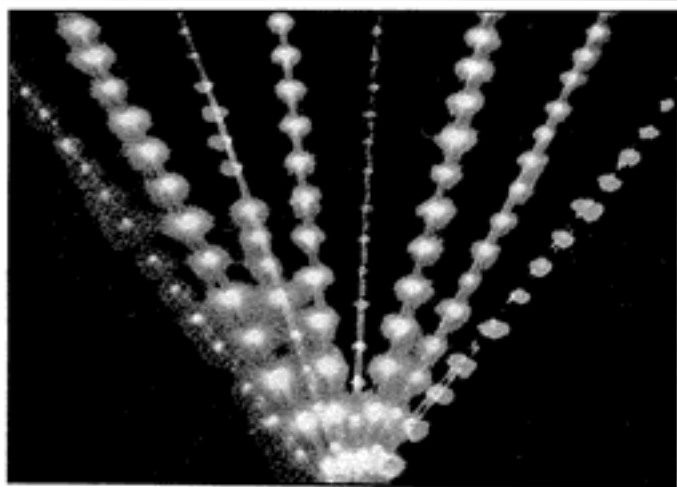
calibre of visitor. It's been an enjoyable experience, we've already had a 50% return on bookings for next year."

#### Addresses not featured in PLASA's Industry Yearbook:

First Audio Ltd,  
95 Ditchling Road, Brighton, Sussex BN1 4SB.  
Tel: (0273) 693610

Tunewell Transformers Ltd,  
115a Myddleton Road, Wood Green,  
London N22 4NG.  
Tel: 01-888 6044

# LIGHT OUT OF THE TUBE . . .



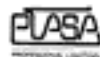
**RED, BLUE, GREEN, YELLOW, PINK, PURPLE, ORANGE,  
CLEAR or MULTI-COLOUR**

- Heavy Duty or Standard Duty
- 3 or 4 Channel
- 2m to 10m Lengths
- 240V or 110V
- We are the largest Manufacturers and Suppliers of Rope Lighting, Tube Lighting (polycarbonate) and Controllers.

## Buy Best — Buy British

- We are the Price Beaters
- We are the Right People
- We are the Ropelight People

**R. K. LIGHTING LTD.**  
4 Steep Hill, Streatham, London SW16 1UL.  
Tel: 01-769 5714 or 01-677 7463



# CLOSE-UP

## Color Ray

Lighting Designer Tony Gotteller takes a close look at a new innovation from the States which some are claiming will be THE product of 1989 as, it is suggested, the ColorPro was in 1988.

The question of whether his laser business was threatened by the recent epidemic of high powered intelligent driven lighting never occurred to Harvey Plotnick of US-based Laser Media. For he was already facing a serious crisis following the arrival of a Federal law banning the use of any laser scanning, directly or indirectly, onto the public. "In most dance venues, such a restriction makes a laser show virtually worthless. In any event, even before the regulation was given teeth, the American public were so over-sensitive to the dangers, you could clear a place just spraying beams off a mirror ball," recalled Harvey, "and this led to the development, by others, of such low power laser devices as Line Scanners and Laser Chorus. I was never into that."

Able to concentrate for bread and butter on their world famous laser graphics package, which guaranteed plenty of work in the concert and leisure park markets, Laser Media cast around for a product which

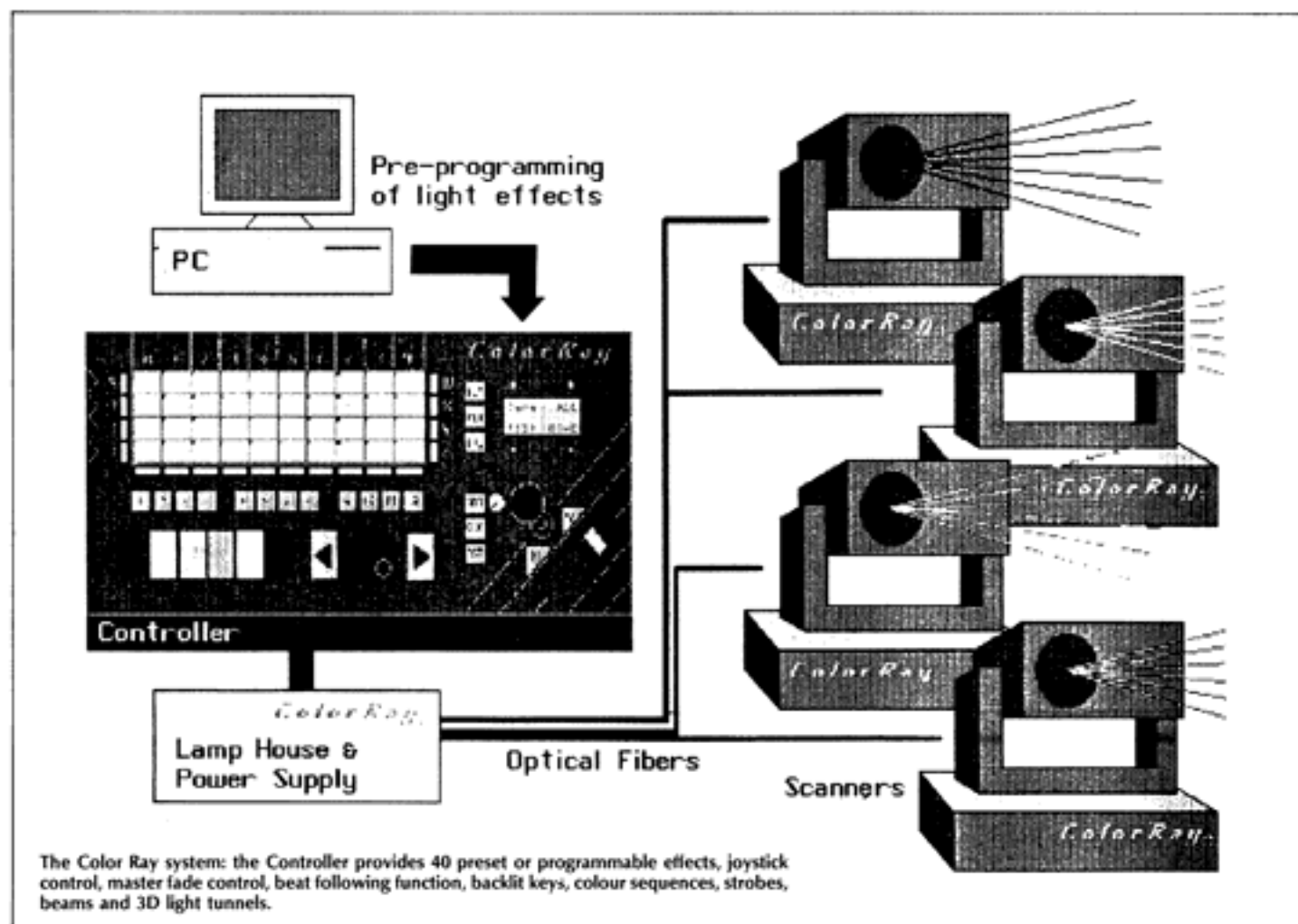
would enable them to utilise their existing technology, while offering some of the excitement generated by high-powered effect lasers and without contravening the regulations - quite a tall order if it had not been for the existence of discharge lamps. In fact, it had never occurred to them previously that such a lamp would be bright enough, and Plotnick is quick to give the credit to Vari-Lites for opening their eyes to the possibilities. "It wasn't the effects which impressed me so much, although I could see that they would be tough competition for any laser company, it was the light output that they achieved from that rinky-dink lamp that really knocked my socks off," Harvey remembers.

The company set to work immediately to see what could be achieved and were pleased to discover that, in combination with General Scannings' X/Y scanners as used by most laser companies, they were able to produce some remarkable results. Having

played around with various discharge lamps, they eventually settled on the idea of using one large xenon source and distributing the light via fibre optic links to four distribution units which house the individual scanning sets. So including a controller, they ended up with a system consisting of three main component parts, and, for a new system, a vocabulary to define the items as separate from existing laser jargon. The lamp unit, consisting of a 500w xenon with forced air cooling and power supply, power and data distribution to the heads and four fibre optic links, is known as the Baselight.

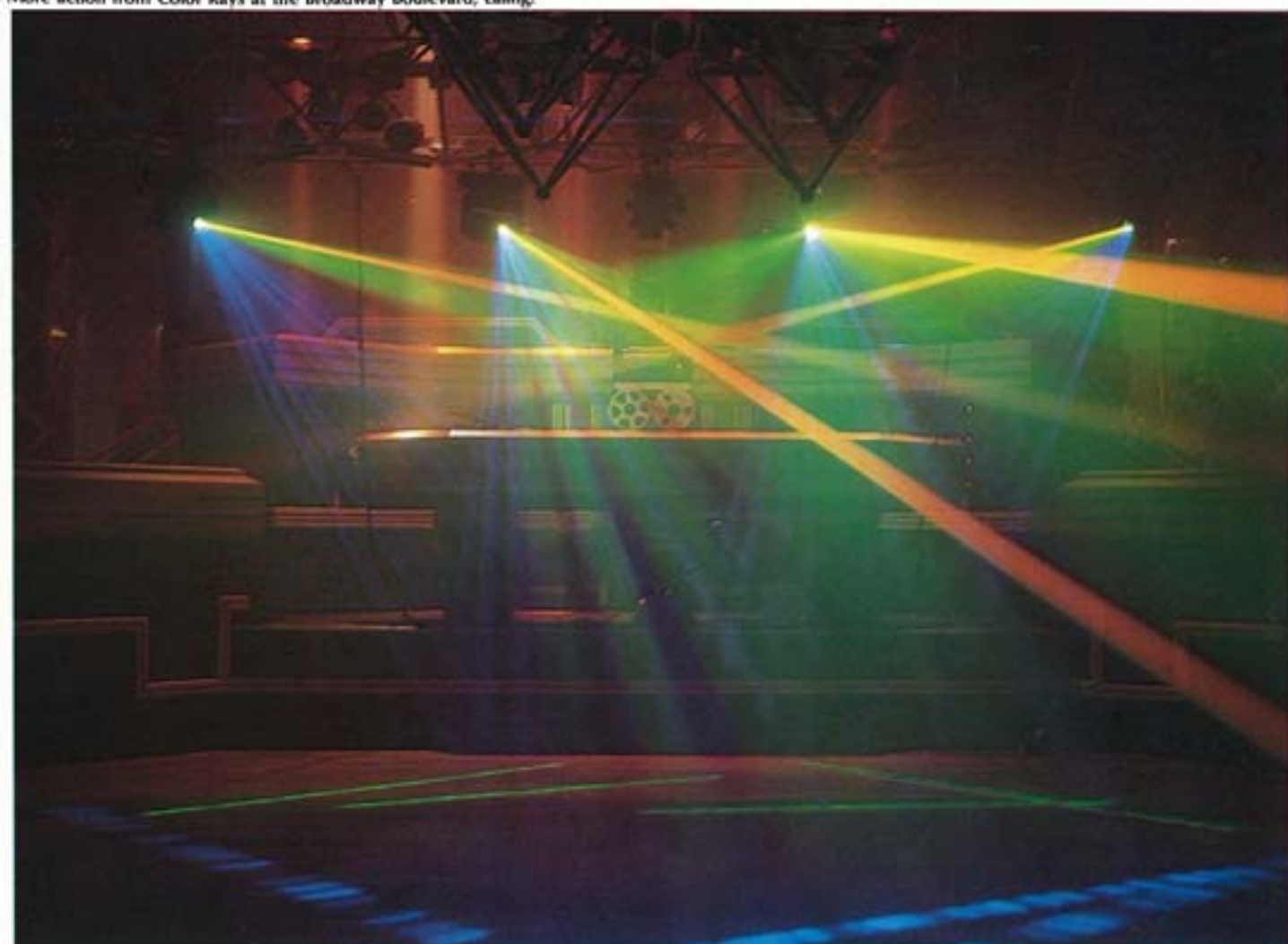
Beamer is the name given to the scanning heads themselves, and these are capable of accepting both data and light up to 30 metres away from the Baselight unit. This 6kg package receives the fibre optic and transmits the delivered light via a collimating lens and ultra-high speed dichroic colour changer (four colours plus white) to the scanners which provide a 60 degree scan angle in the production of effects.

This produces what the company themselves describe as 'cogent light'. A 100mm diameter beam at six metres and at that distance 'sharp, dazzling, high-resolution beams that move with laser-like speed and change colour in an instant'. In this way it is possible to generate various simple lissajous effects such as cones, fans and tunnels which





More action from Color Rays at the Broadway Boulevard, Ealing.



are greatly enhanced by the added colour dimension. Indeed, while some would describe Color Ray as a laser simulator, I would say that this does the product an injustice as the combined effects give it an aspect all of its own.

A motorised yoke, providing 340° of pan and 300° of tilt, is relied on to provide strategic placement and second generation movement of the scanned effects. Using steeper motors to achieve this, a belt drive has been adopted to improve accuracy. An additional bonus is a high speed shutter which enables stroboscopic and flicker effects.

The controller, which in the new nomenclature is styled 'The Director', is a microprocessor-based unit providing 40 programmable states of combined positions, colours and beam patterns across the Beamer. To facilitate easy access to create these memory functions, each Beamer can be addressed individually as to each mode of animation, the mixture of which, across all the instruments, creates a single state or programme.

So you can see that 40 of these are quite powerful. Since I know myself from bitter experience that programming intelligent lightsources in this way is extremely laborious, although rewarding if you have the patience, I was relieved to know that the Director arrives with its 10 x 4 matrix memory keyboard fully loaded with standard effects. It is also possible to store a performance, consisting of several states and assign it to a single key which could be useful in rehearsed situations.

Another nice feature of the Director, which sends its serial data via up to three Baselights to a maximum of 12 Beamer, is a wheel

which enables manually controlled sequences through one line of the matrix consisting of 10 memory presets. A joystick is also provided to which any of the function modes can be assigned, to enable modifications to be made to any of the effects in real-time performance. A 'burst' button and adjustable strobe rate are provided for shutter control together with a beat sequencer to give audio drive.

Laser Media will make their software available to enable Color Ray to be programmed via any AT compatible PC to enable original programming for special applications such as AV presentations. This RS 232-based facility will also enable external recall of the presets by an independent central control system to allow co-ordinated cueing as part of the total show.

Now, of course, we come to the crunch, and my only major doubt about Color Ray - the cost. For a minimum system consisting of four heads, one light source, controller and installation package, you will be looking at £21,000; while for a complete system with 12 output units, you can expect a bill for close on £60,000. This represents roughly £4,750 per instrument and means that within most budgets it may not be possible to accommodate a worthwhile representative presence from each of the three main categories of intelligent lights available today, in order to achieve the broadest spectrum of effects. For example, a combination of Color Ray with Clay Paky Golden Scans or Coemar Robots and Color Pro would provide a fantastic mix, but would leave precious little room for anything else. But then, would you really need any more?

In any event, a system which can provide such a definitive and exciting range of effects

as this one deserves consideration for any major lighting package. With its pedigree, and the kudos of live performances with Pink Floyd, George Michael and Neil Diamond in the bag, I feel sure that, one way or another, Color Ray will find its way into the lighting designers' regular vocabulary.

Color Ray is distributed in the UK exclusively through Lightfactor (01-575 5566).

## FIBRE OPTIC *Lighting*

We are specialist manufacturers & suppliers of all fibre optic lighting materials - Glass & Polymer fibre harnesses - light sources - colour changers - edge light interfaces - theatre curtain washers - spot, ball & bullet lenses - optic conduit - Par Startube & Star Rod - ceiling fittings.

Our Chiswick showroom has examples of our products, also mirrors, starcloths and displays from subtle backgrounds to fibre optic fireworks. Leaflets available. (visitors by appointment)

Trade & Export call **PAUL RAYMOND**  
Par Opti Projects Ltd,  
Unit 9 The Bell Ind. Est.  
Cunnington St.  
Chiswick Park  
London W4 5EP  
Tel: 01-995 5179



Tlx 933718 PAROP G  
Fax 01 994 1102

# DIGIFFECTS®



The world's **FIRST** and **ONLY** real **DIGITAL SOUND EFFECTS LIBRARY** in crystal clear 3D-Sound as all effects are digitally recorded, mixed and mastered.

*In ten different categories on easy-to-use compact discs . . . City, Domestic, Rural, Transport, Industry, Office, Leisure, Sports, Human, Special, plus a Cross-section Disc containing sounds from all ten categories.*

Now available from

**TSL** sound and lighting equipment from leading manufacturers

**Theatre Sound & Lighting (Services) Ltd**  
67 Drury Lane, London WC2B 5SP  
Phone: 01-836 7877/8 Fax: 01-836 7879

# Bill Klages/The Grammys Morpheus Pan-Command

John Offord goes behind the scenes at The Shrine in Los Angeles during set-up for the televised production of the 31st Annual Grammy Awards.

When the opportunity of making a Sunday afternoon back-stage visit to The Shrine auditorium in Los Angeles presented itself, and I was in the vicinity in any case, who would dream of saying 'no'? It gave me the opportunity of meeting leading television lighting director Bill Klages again, who the previous evening had been extolling the virtues of the Morpheus Pan-Command lighting system, and most interestingly their new Flip Box Truss.

So I turned up, right on cue, just as the spotlight laden truss units were nearing completion. It was mid-afternoon, and one bar was up and running, another as good as finished, and a third well on the way. A major system, it incorporated 30 PC Spots and 170 PC Beams. (They'd started unloading the lorry at 8 a.m. the same morning, and, but for enforced breaks, could have had the job finished well before I arrived at 3 p.m.)

## The Pan-Command Lighting System

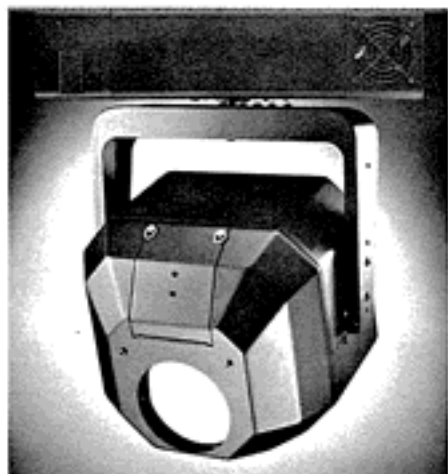
The new Pan-Command system from Morpheus Lights was designed to unite their previous and successful products and technologies into one cohesive and efficiently packaged system. The company has made a big impact on the lighting industry with the high quality performance of its moving lights, and some of their earlier products include the Panaspot, Panabeam, Color Ranger, Cuespot and the Commander console. Morpheus has also been well known for the efficient packaging of their modular lighting systems, which have lent themselves to design flexibility, condensed truck packing and quick load-in and load-out at venues.

"Pan-Command is a complete lighting system consisting of all moving lights which sets up quickly, controls easily, handles tour weather conditions, is simple to maintain, packs up small and is cost effective to use," marketing director Jim Gordon told me. "The system offers tremendous design flexibility, because it allows the designer to refocus and recolor each light for each scene. Each song can have its own lighting design. Also, because the system is comprised of all moving lights, looks can be created that could never before have been accomplished."

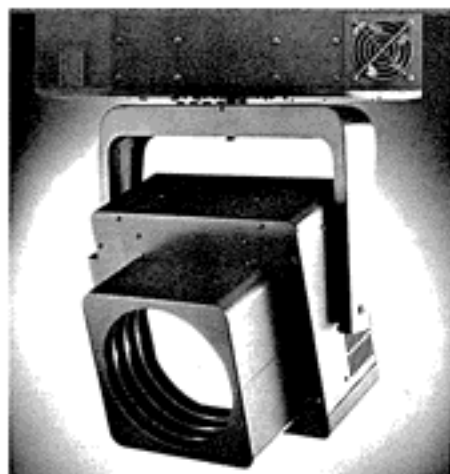
Two new lighting fixtures have been specially developed to give Pan-Command its level of high performance and efficiency. These new 'state-of-the-art' fixtures are the PC Beam and the PC Spot. When integrated with the remaining system components, including the Flip Box truss, SB6, SB2 or SB1 light bars and the PC-Desk lighting console, a cohesive modular system can be configured into a flexible and versatile package. And this is what Bill Klages was utilising at The Shrine for the Grammy Awards.

I asked Bill Klages how he saw the advantages of the system.

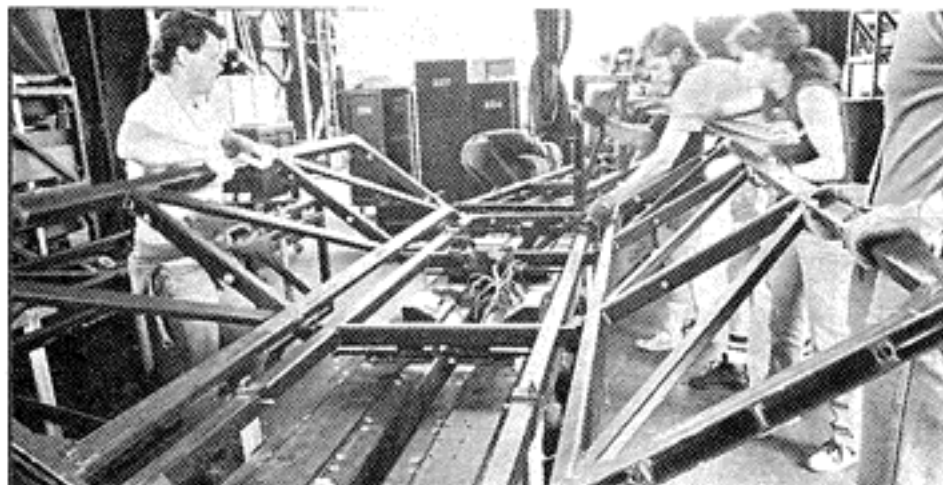
"From my personal viewpoint, the advantages of utilising the Morpheus Pan Command System are numerous. First, the sharp-edged unit (the PC-Spot) is brighter than any other moving light available today by one



The PC Spot.



The PC Beam.



The PC Spots and Beams live in the truss, the sides of which lift up and lock to form a catwalk.



Packing up the Flip Box Truss.



The entire system stacks up and rolls.



Lighting designer Bill Klages (left) with art director Bob Keene pictured on stage at The Shrine.



Lighting control centre for the 31st Grammy Awards, backstage at The Shrine.



Set-up at The Shrine: one of the huge multi-section Morpheus Flip Box Truss systems ready for flying, the protective 'cage' having been lifted up to form the catwalk above.

stop. This, by itself, would be enough if it were not for its other features: multi patterns, rotating patterns, infinite selection of colours, variable zoom focus, and reliability. In addition, the PC Beam, with its variable focus, round pattern, efficiency, and colour scroller, is an ideal multipurpose soft-edged lighting instrument.

"The ease of programming and the speed with which the operator can focus and adjust the units and the inherent repeatability of the entire system saves hours and hours of focusing time. Also, we are able to achieve a variety of set-ups that would require great numbers of conventional pieces of equipment to accomplish, and the advantage of having the ability to rapidly alter any unit's configuration is obvious. It is now very uncommon that any changes to the lighting require a disruption of camera rehearsal," explained Bill Klages.

And the new Flip Box truss has added further advantages. "The speed with which the system installs is another major advantage. The truss sections require only power and a control cable to be operational, and installation time is minimal," said Bill Klages.

#### The PC Beam

The PC Beam is similar in many ways to Morpheus' standard Panabeam. It is a soft edge moving beam with a built-in 11 frame high speed scrolling colour changer. The changes to the fixture, however, make the PC Beam very unique. It has a variable beam diameter capable of producing beam spreads similar to ACL's all the way through to wide flood, and the light output remains equal to corresponding Par 64 fixtures. The dimming for the incandescent light source is now located in the fixture, and the range of motion of the fixture has also been increased to allow greater flexibility in focus and positioning.

#### The PC Spot

The latest design upgrade to Morpheus' popular Panaspot is their new PC Spot. Improvements to the fixture include a zoom optical system producing a variable beam spread from 2 to 25 degrees. The range of motion has also been increased to allow greater flexibility in focus and pan/tilt coverage, and new dichroic colour system allows designers to either bump or dissolve



Another truss section nears completion.



# Perfect Splits. Both ways.



## ColorWiz.

Split colors will enhance your pattern projections and special looks, and they'll be on the money every night when you use ColorWiz. Add movement to effects by changing color as you change intensity. Add depth with splits and collages. Mount ColorWiz for either vertical or horizontal orientation.

ColorWiz is the color changer of choice worldwide, proved reliable show after show. ColorWiz — the one you can mount two ways and control with your controller, the one you can depend on, the one you can afford.

THE  
GREAT  AMERICAN  
MARKET

826 N. COLE AVE. HOLLYWOOD CA 90038

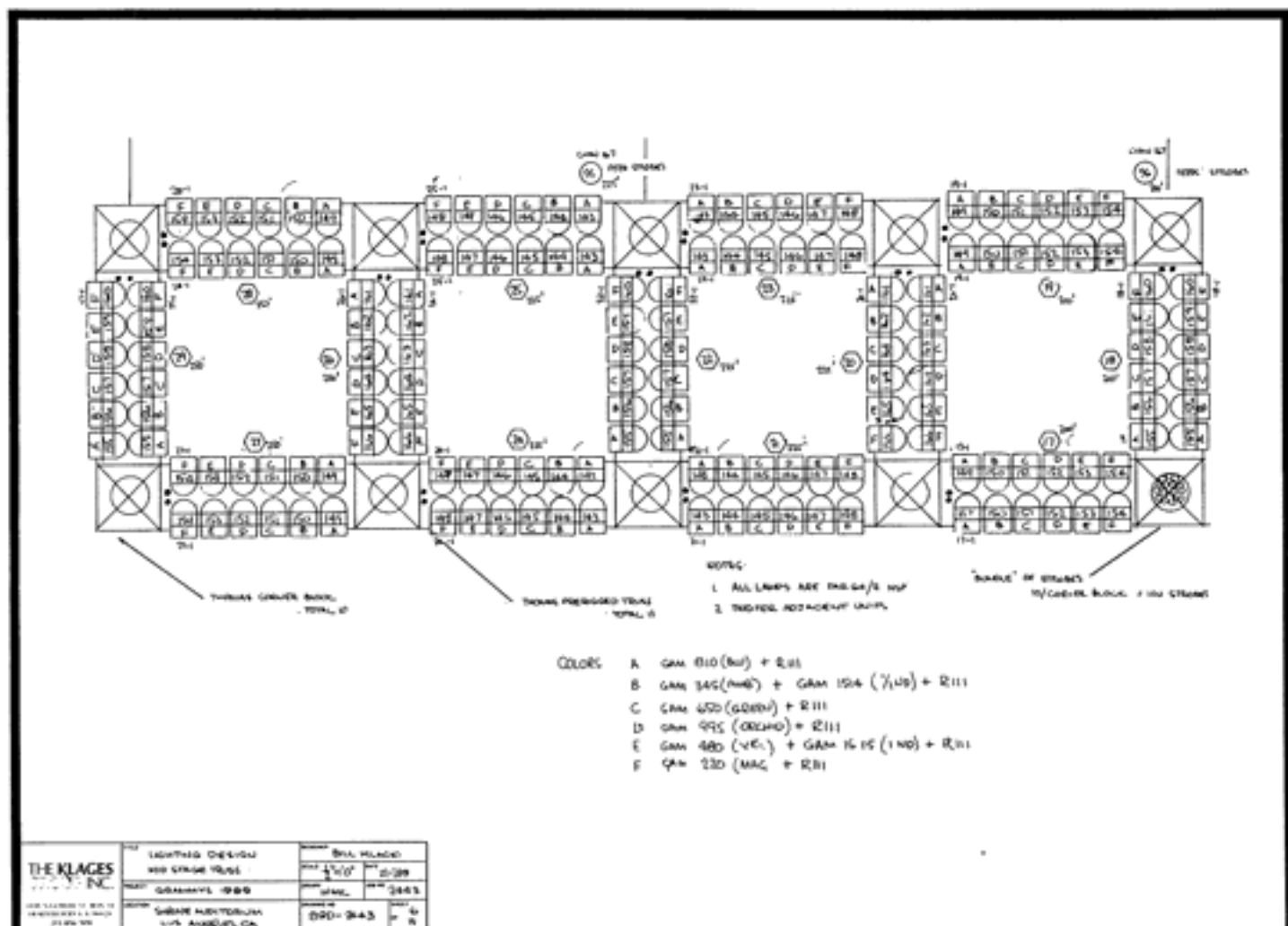
Call The Great  
American  
Market  
for details.  
Contact your  
fine profes-  
sional dealer  
regarding  
sales, rental,  
or a demo.

PHONE 213/461-0200  
TWX 910 494 1233  
FAX 213/461-4308

**AVAILABLE FROM THESE FINE PROFESSIONAL DEALERS:**

**AUSTRALIA:** Concert Lighting Systems, Tel. 03-529-5019, FAX 03-529-2629. **CANADA:** William F. White, Montreal, Tel. 514/866-3323, FAX 514/866-8856, Toronto, Tel. 416/252-7171, FAX 416/252-5095, Vancouver, Tel. 604/873-3921, FAX 604/874-2599. **HOLLAND:** Corne-Light, Tel. 02 090 9898, FAX 02 095 1881. Flashlight, Tel. 030-62 58 14, FAX 030-62 59 34. **HONG KONG:** Engineering Impact, Tel. 3-7110222, FAX 3-7642543. **NEW ZEALAND:** Spotlight Systems, Tel. 64 9-789354, FAX 64 9-780542. **SWITZERLAND:** Zilz Concerts AG, Tel. 071-22 75 45, FAX 071-22 75 44. **U.K.:** AC Lighting, Tel. 0494 39076, FAX 0494 461024. **FRANCE:** Dimaphot, Tel. 1.47.23.98.87, FAX 1.47.23.40.44. **WEST GERMANY:** Zilz Concerts GmbH, Tel. 221-58 30 31, FAX 221-58 43 99.





The 31st Annual Grammy Awards, The Shrine, Los Angeles, February 22, 1989, lighting designer Bill Klages. Plan of stage lighting (left, page 34), the mid-stage truss (above) and key to symbols (below).

from colour to colour. An internal 11 frame scrolling colour changer is provided for addition of colour correction, diffusion filters and special colours of the designer's choice. The PC Spot also comes equipped with nine gobo patterns, four of which are capable of rotating with programmable speed and direction control, and the lamp source is an Osram 400 HTI providing consistency in intensity.

### The SB Series - The Intelligent Light Bar

The control distribution for the system is accomplished through the light bar to which the fixtures are mounted. A light bar containing six fixtures is called an SB6 (light bar with six lights). Either six PC Beams, six PC Spots or any combination of the two, can be housed in the SB6. Also offered are the SB2 and SB1. The SB2 contains two fixtures and allows for hanging two lamps in any portion of the truss. This enables a designer to look at each truss section in 'thirds' for any special configuration needed. The SB1 houses one fixture for single lamp configurations on the floor, on pipe or with brackets.

The SB Series Light Bar handles the distribution of the digital control signal and servo power for the fixtures. It is capable of communicating and storing information from the control console called PC-Desk (see below) and using that information to cue the fixtures. If required, fixtures mounted to the SB6, SB2 or SB1, can easily be detached for maintenance.

### The Flip Box Truss

The newly developed truss for the Pan-Command System is the Flip Box truss. When

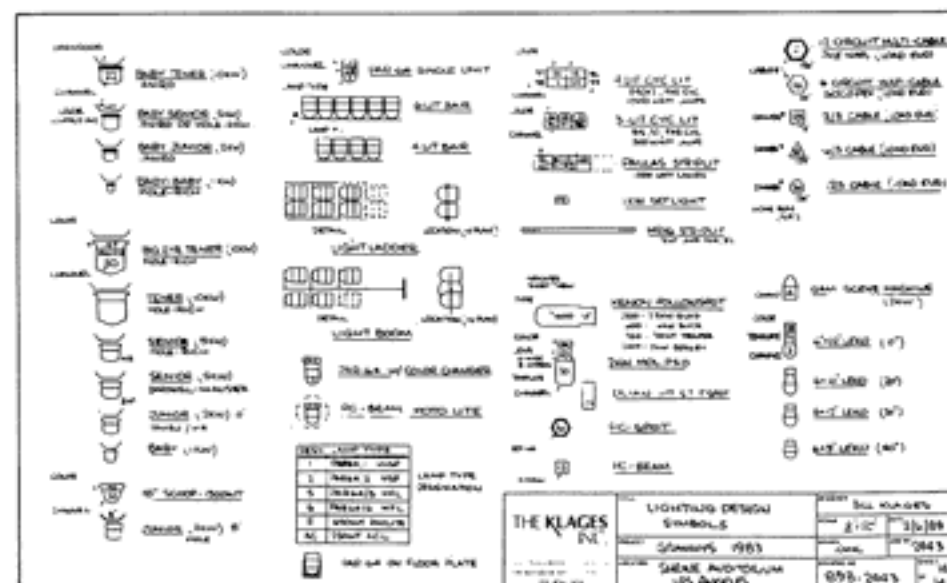
the truss is travelling, it forms a metal cage, protecting up to two SB6's with six PC Spots, PC Beams or any combination of the two, for a maximum of twelve fixtures per truss. When the truss rolls into a venue, the sections (three high) are unstacked, rolled into position and bolted together. At that time, the front and back of each of the 10' truss sections is folded up out of the way and locked into position, exposing the fixtures for unrestricted focusing and creating a catwalk on top of the truss.

The Flip Box truss can be used in many different configurations just as with any conventional truss. Furthermore, special

bracketing and endpieces allow for the trusses to be configured in an infinite amount of ways and at any angle or rake that is desired. The trusses come standard with a flat black finish, but can be spray painted any colour needed to support the visual aesthetics of the act or designer.

### The PC-Desk

Control for the Pan-Command System is accomplished via the PC-Desk. This computerised console allows for easy control of great numbers or groups of moving lights. "Whether cues are programmed as refocuses of the entire system or intricate





## THE SHADOWS



## THE ELECTRIC LIGHT ORCHESTRA

The GE Pinspot is everything a disco lamp should be.

Tough yet easy to handle. Impervious to smoke and dirt because it's a sealed beam unit. And manufactured to the exceptionally tight tolerances on which we insist.

And because we put in more input, you can depend on more output. For this is one lamp that always delivers what it claims.

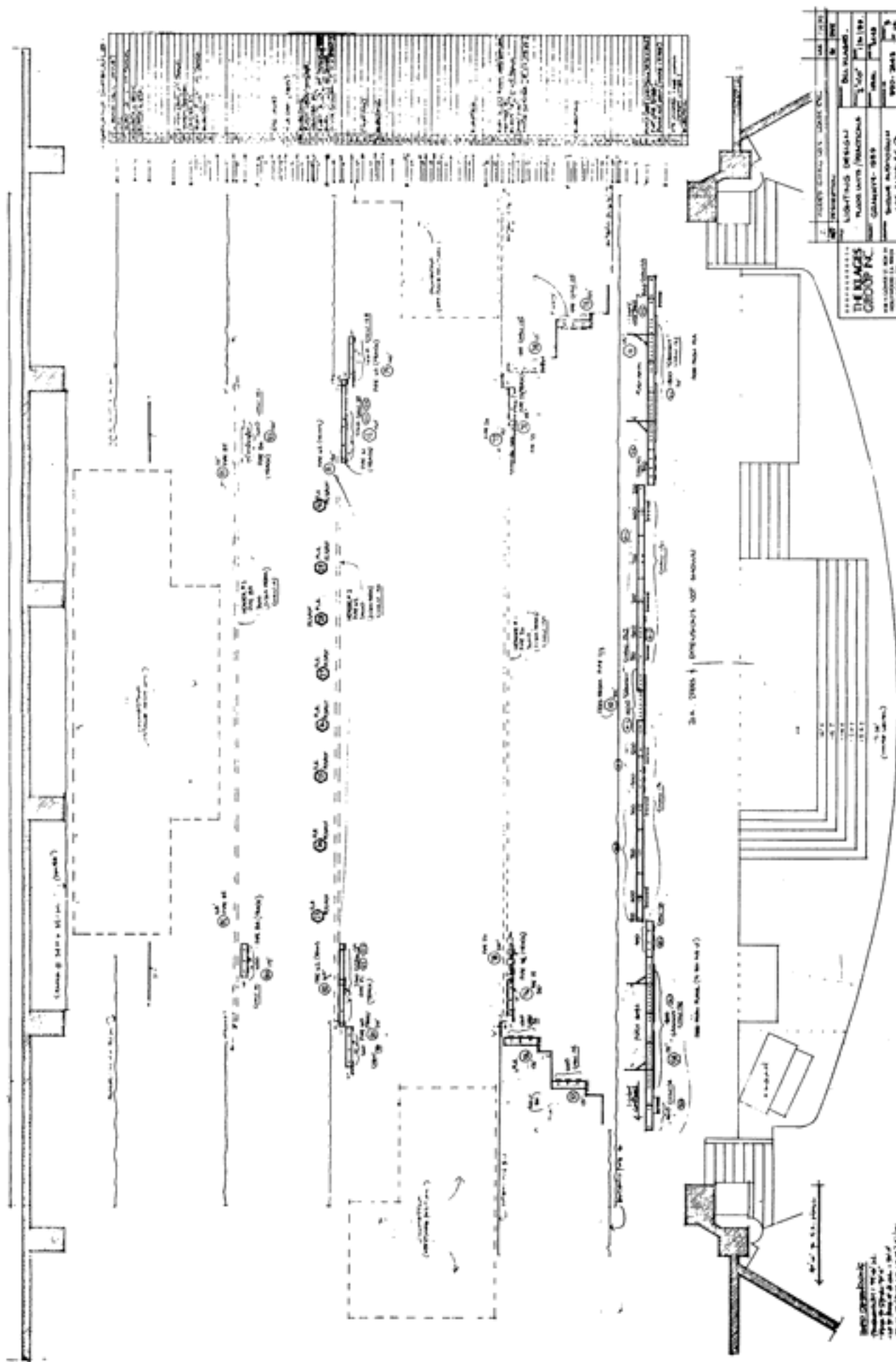
With all that is going for it, is it any surprise that the Pinspot is topspot in discos all over the world.

**We don't just sell lamps -  
we sell expertise**



USA

*GE Lamps United Kingdom*



NO.	DESCRIPTION	DATE	BY
1	REVISION		
2	REVISION		
3	REVISION		
4	REVISION		
5	REVISION		
6	REVISION		
7	REVISION		
8	REVISION		
9	REVISION		
10	REVISION		
11	REVISION		
12	REVISION		
13	REVISION		
14	REVISION		
15	REVISION		
16	REVISION		
17	REVISION		
18	REVISION		
19	REVISION		
20	REVISION		
21	REVISION		
22	REVISION		
23	REVISION		
24	REVISION		
25	REVISION		
26	REVISION		
27	REVISION		
28	REVISION		
29	REVISION		
30	REVISION		
31	REVISION		
32	REVISION		
33	REVISION		
34	REVISION		
35	REVISION		
36	REVISION		
37	REVISION		
38	REVISION		
39	REVISION		
40	REVISION		
41	REVISION		
42	REVISION		
43	REVISION		
44	REVISION		
45	REVISION		
46	REVISION		
47	REVISION		
48	REVISION		
49	REVISION		
50	REVISION		
51	REVISION		
52	REVISION		
53	REVISION		
54	REVISION		
55	REVISION		
56	REVISION		
57	REVISION		
58	REVISION		
59	REVISION		
60	REVISION		
61	REVISION		
62	REVISION		
63	REVISION		
64	REVISION		
65	REVISION		
66	REVISION		
67	REVISION		
68	REVISION		
69	REVISION		
70	REVISION		
71	REVISION		
72	REVISION		
73	REVISION		
74	REVISION		
75	REVISION		
76	REVISION		
77	REVISION		
78	REVISION		
79	REVISION		
80	REVISION		
81	REVISION		
82	REVISION		
83	REVISION		
84	REVISION		
85	REVISION		
86	REVISION		
87	REVISION		
88	REVISION		
89	REVISION		
90	REVISION		
91	REVISION		
92	REVISION		
93	REVISION		
94	REVISION		
95	REVISION		
96	REVISION		
97	REVISION		
98	REVISION		
99	REVISION		
100	REVISION		

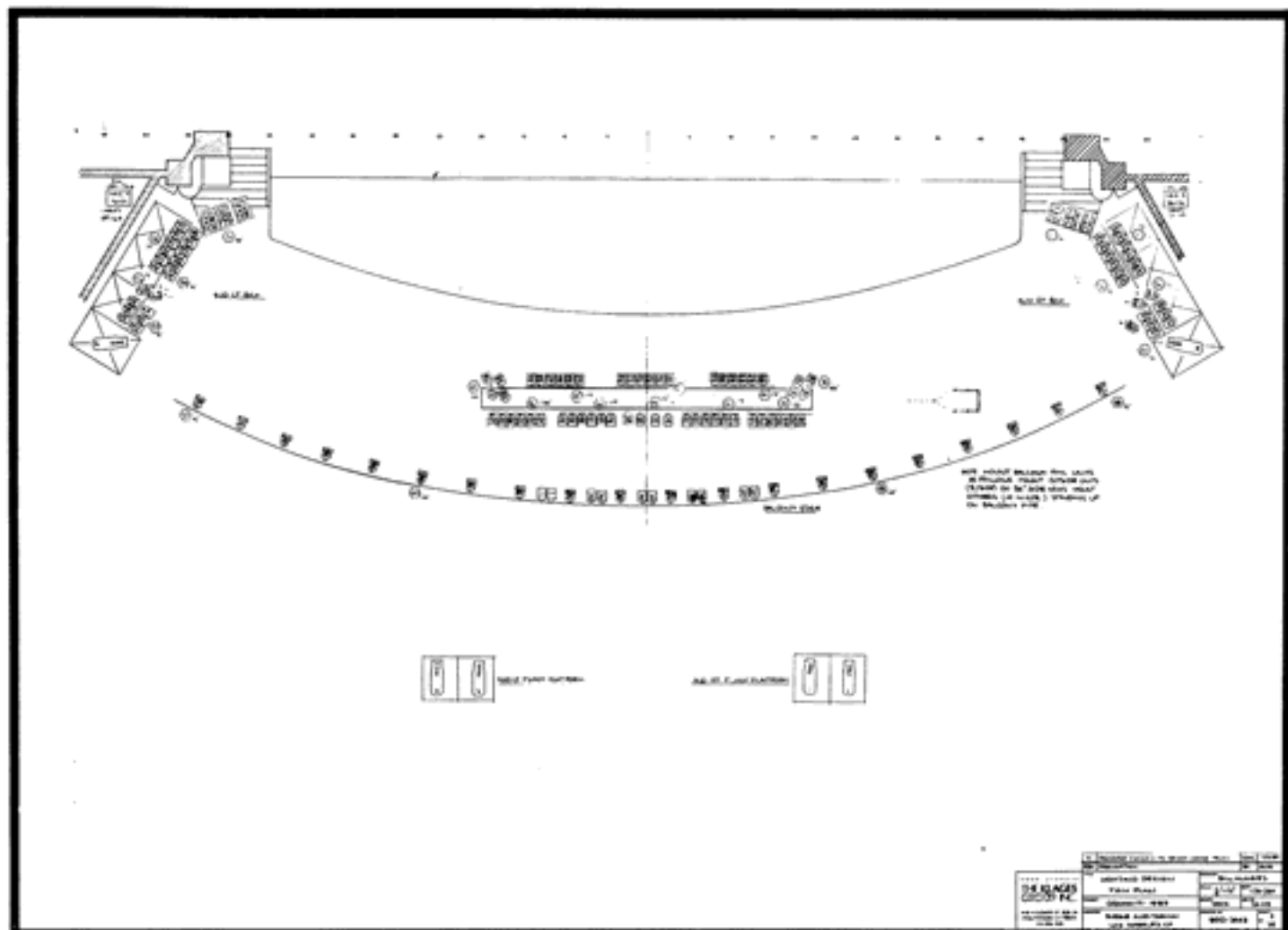
**THE BLANES GROUP INC.**  
 ARCHITECTS & INTERIORS  
 1000 W. 10th St., Suite 100  
 Oklahoma City, Oklahoma 73101  
 Phone: (405) 521-1111  
 Fax: (405) 521-1112

**PROJECT INFORMATION**  
 PROJECT NO. 001-001  
 PROJECT NAME: [REDACTED]  
 PROJECT ADDRESS: [REDACTED]  
 PROJECT DATE: [REDACTED]

**CLIENT INFORMATION**  
 CLIENT NAME: [REDACTED]  
 CLIENT ADDRESS: [REDACTED]  
 CLIENT PHONE: [REDACTED]

**DESIGNER INFORMATION**  
 DESIGNER NAME: [REDACTED]  
 DESIGNER ADDRESS: [REDACTED]  
 DESIGNER PHONE: [REDACTED]

NOT TO SCALE  
 SEE OTHER SHEETS FOR  
 DIMENSIONS AND  
 FINISHES



movements with only a few lamps, PC-Desk is fast and simple to programme," said Jim Gordon of Morpheus.

An extremely versatile programme for global focus is another user-friendly and time saving feature of Pan-Command right at finger tip control. This allows the designer to create a focus position for any location on the stage and to then touch up the focus for a light or group of lights in this focus position for any particular look in the show. After the focus has been touched up for that position it will automatically be transferred to any other

looks that have the same focus position in the show.

For enhanced flexibility, the PC-Desk also works together with manual lighting consoles such as AVO and Celco, to give the designer manual control over any portion of the system.

#### System Summary

Morpheus now have ten full systems available, and a typical system travels with a crew of only three technicians. Load in, from

the time the truck door opens until the system is at trim, takes only a few hours, and can be as low as one-and-a-half hours for a simple get-in. Since focus is done with a remote track ball on stage, a complete system focus can easily be accomplished by one person in 20 to 45 minutes. "This also means that there are no crew up in the trusses focusing lights or no one having to be at the console for focus. Also, focusing the lights won't interfere with music levels for sound checks since the lighting crew isn't screaming back and forth from the stage and console," said Jim Gordon. "The system loads out as quickly as it loads in (if not quicker) and fits into a single truck for a condensed pack because of its modularity and efficient packaging design."

Morpheus has built Pan-Command to perform, and built it to be road-worthy. Pan-Command can give the designer and the act looks that are as static or as dynamic as needed making it a system that any touring act can utilise. "It is our goal that touring groups will invest in their future by using this advanced and state-of-the-art technology today," said Jim Gordon.

And it comes highly recommended by lighting director Bill Klages.

<b>marquee</b> <b>AUDIO</b> PROFESSIONAL SALES AND SYSTEMS		
JBL	HH	YAMAHA
<b>Soundcraft</b>		
DENON	RANE	COURT
<b>MARQUEE AUDIO</b> SHEPPERTON STUDIO CENTRE STUDIOS RD - SHEPPERTON - MIDDLESEX TW17 0DD Tel 0932 566777 - Fax 0932 568889		

## MIDNIGHT DESIGN

**32, 34 AVON TRADING ESTATE,  
AVONMORE ROAD,  
LONDON W14 8TS**

**TRADE COUNTER**

Immediate Delivery in London Area  
 Large range in stock including  
 G.E. Thorn, Philips, Lee, Rosco,  
 Chris James, Socapex, Neutrix,  
 Duraplug, Thomas, Strand, CCT,  
 Rosco, Le Maître

**TELEPHONE:  
01-603 9831  
or  
01-602 7932**

**The 31st Annual Grammy Awards**  
 CBS-TV  
**The Shrine Auditorium, Los Angeles**  
 February 22, 1989

Producer: Pierre Cossette  
 Director: Walter C. Miller  
 Art Director: Bob Keene  
 Lighting Designer: Bill Klages

# Over the Road to Sky

Julian Williams visits Sky Television during a frantic pre-launch build-up and talks to Alan Luxford about Strand Lighting's role in providing lighting equipment and control systems for television studios worldwide.

For 75 years Strand Lighting (originally called The Strand Electric & Engineering Company) has been manufacturing and supplying systems for all facets of the entertainment business.

A few weeks ago, operating from its new headquarters in West London, Sky Television launched the first four of its channels, including the 24-hour Sky News service. They claim the station is the most ambitious news venture ever undertaken in Europe, and Strand were asked to supply Sky with luminaires, control systems and dimming equipment.

Although relatively small as an installation, the occasion is a landmark in a very successful period for Strand, who have been regularly equipping television studios around the globe. It just happened that this time the studios involved were on its own doorstep,

across the road!

20 years ago, if you wanted to talk about systems of all shapes and sizes available from one company in the UK, you went to Strand. And if you wanted to do the same today you can still go to Strand.

I approached Fred Bentham, responsible over some 40 years for the technical developments at Strand for some 'grassroots' information on where it all began for television lighting. "1955," he said, "was the year when television lighting took-off. The launch of ITV meant hasty provision and equipping of studios. They were either new or more often conversions of film studios. The fact that the shows went out 'live' demanded stage lighting controls, and that meant Strand Electric."

Group Memory played an important role, and one use, Bentham told me, "was to keep

the number of dimmer levers down and therefore within arm's reach of a seated operator." They went on to continue their early successes and had a run of ten years with a virtual monopoly.

Around the latter part of the period, if you walked through the front doors of Strand's HQ at King Street in Covent Garden, you would first come across lighting expert, 'Strand man' Alan Luxford, who would demonstrate the showroom equipment, and show you the fully equipped theatre beneath. Today he wears several hats at Strand, including the role of UK television and major systems sales manager. He still has all the answers to hand, so I decided to talk to him about Strand's involvement in lighting for television today.

He told me that last year saw the largest number of luminaires sold to BBC's 'A' Studio



The news studio at Sky Television with everything in place bar the readers. The lighting rig gives complete flexibility of position and height for each lantern. Equipment supplied by Strand Lighting to Sky includes Mizaris, Polaris, Castors, Artusos, Softlights, Iris 2's and Mini Irises. Strand also supplied 14 ENG kits with Redheads and Blondes and battery kits.



at Elstree, and that 1988 was Strand's most successful year ever for supply of major TV control systems.

I asked him how one went about the design of a lighting installation for a television studio.

"We start by getting the size of the studio from the customer, and an idea of what each studio is going to be used for. Whether it's a one-to-one interview studio or a full production studio, each would be designed completely differently. Critical information you need would also be the height which depends on what sort of suspensions can be put in to hold the luminaires, and what size of cyc. Then the height and cyc can be worked out by maximum camera angles. That determines the height of the cyc, which then determines the placing of the luminaires for the cyc lighting and their suspensions."

One of the big ones that Strand recently successfully tendered for was a saturation rig for the BBC's big 1000 sq.m. TC1 production studio, which is to have a Galaxy control system. This is one of the largest studios in the UK, and services such shows as 'Top of the Pops'. They also provided equipment for the BBC at Pebble Mill in Birmingham last year.

Alan went on to explain that we are very advanced in the UK in television lighting. "The UK has the reputation of being the most efficient users of television studios. It's high standard television providing a lot in a day, in terms of turn-round time, in programmes, and colour production," he said.

Discussing the differences in the types of lighting rigs in studios, he told me that with a saturation rig the BBC only have 5kW luminaires and would rig specials such as 10kW luminaires or Parcans as required for a particular show, gaining the maximum usage out of the minimum amount of studio. In these studios, Alan explained that they may have hoists and barrel suspensions with 2 or 3 dual purpose luminaires, for key or soft light operation, which means they can put whatever production they like into them.

"They can turn around and point the required luminaires in any direction, whereas independents such as Yorkshire and LWT have a telescopic single-point suspension system. The lighting director has to plot where they want the luminaire to be in the studio and then have it pushed into position from an overhead lighting grid, using the right luminaire to do the job," said Alan Luxford.

In Alan's view, the Beeb has the edge over the independents in 'turn-round time', which means rigging and colouring overnight, lighting in the early part of the day, and transmission at the end of it. The BBC has very tightly planned schedules, as all the production comes from the same organisation, and it has to produce many more programmes than the independents.

In 1987, following a period of amalgamation in the late 70's, Strand took over the Quartzcolour lanaro Italian factory with all its 'star' named luminaire products, forming a one-company worldwide operation, and augmenting its array of luminaires dedicated to both theatre and T.V. markets.

Although losing out in television until the MMS system was developed with digital call-up, their wide range of both manual and memory control systems has also developed at equal pace. MMS was, reputedly, the most successful 'off the shelf' memory system any company has made worldwide (before the MMS, there was a total of only 70 memory systems worldwide!). In its first year the MMS doubled this figure alone, its modular format revolutionising control consoles. Before



One of two Strand Galaxy lighting control systems recently installed at the South Bank Studios of London Weekend Television. Other Galaxies have been supplied within the last few months to the BBC for Elstree and Cardiff and to Yorkshire Television in Leeds and TVS at Southampton.



Studio 'La 5' - a private TV studio in Paris. Luminaires are Quartzcolor and control is by a Strand 96 channel Gemini.

MMS there was IDM and MSR. IDM was the first dimmer level memory system going into a T.V. studio in N.O.S., Rotterdam.

In 1975 Richard Pilbrow's then 'dream machine' lightboard spec. for the National Theatre, meant a lot of research hours and R&D money spent. It was probably the most expensive board ever made (so they say) and others were produced for some similar large theatre installations.

To retrieve the costs of these systems and to create a mass-produced, micro-processor based product, influenced from ideas researched and developed for the lightboard, the highly respected Galaxy system was launched, in 1981, from a background of more theatre and television product research. The Television market insisted on the Playback areas of the machine being further developed, to provide dedicated 'hands on' facilities. Included with its 'wheels' and faders it has a 'Studio Playback Module' and 'Studio Memory List Display Module'. It now also includes the dedicated 'Motion Control Module' (for intelligent luminaires such as PALS) with a Display Monitor and a Dimmer/Circuit Fault Detector and report display monitor.

Strand, who said they were the first to introduce a complete fully working lighting control system with instant dimmer memory, almost came to grief towards the late 60's with their premature development of IDM, which created havoc to the lights in performances around town! In one busy repertory house they even had to provide a temporary manual system and one of the three operators, for a year, while they sorted the memory system out at great expense!

Strand have had to fight hard over the years to regain lost ground and particularly to get back on top in lighting for the televi-

**Sound Equipment Rental and Sales**  
including the 'Hackney Cab' speaker system  
and Yamaha PM 3000 mixing desk

**Sound Design and Engineering**  
**Specialist Radio Mic Applications**

West Works Telephone: 01-986 6111  
Chalgrave Road Telex: 265871 Attn: D05 2220  
London E9 6PB E-Mail: Hardware-UK



sion industry. They won a contract in 1968, with their IDM system, to supply Yorkshire Television and LWT, but subsequently lost out to the then revolutionary Thorn system which had the much needed 'digital call-up' with its Q-file system.

Today, Strand are proud to say they are replacing all of these remaining Q-Files at Yorkshire Television with their highly successful, integrated, dedicated Galaxy 3 system. And they now claim to have the largest number of controls in television studios worldwide! Some of their recent television lighting jobs include the Press Agency in Moscow, Jordan Production Centre, Singapore Broadcasting and ABC in Sydney.

Bang up to date, once the Arian rocket had safely launched the Astra Satellite early one morning in mid-December 1988, the pressure was on to build the Sky studios, including the lighting installation. When I visited, project manager Bill Richards explained: "It had to be done over a single week-end. We had to hand the studio over on 7th January."

Strand also pride themselves these days in saying they never let a customer down, and they are as good as their word.

"If we say we'll do it, then we'll do it," concluded Alan Luxford.

#### Recommended Reading

Colourful and informative in Strand's traditional publication style, the eight-part guide, **Lighting for Television** explains and lists all terms and definitions, theory and practice, dedicated luminaires, dimmers and lighting consoles, etc. Some design considerations are also included.

## ARK LIGHT

**THEATRE LANTERN  
RESTORATION**  
COLOUR MATCHING TO DECOR  
SPARES, T/H KITS

2 Partridge Close, Upper Bruntingthorpe,  
Leicestershire LE17 5QY.

Tel: (0533) 478336

## The way to rig a 30' truss

### THE TRUSS TOWER

Economically priced, with a  
revolutionary fail-safe device.

The first-choice when rigging today's smaller-scale sets. The unique fail-safe device prevents fall of the truss in the event of cable failure during rigging as well as when the truss is in position.

**POWER  
DRIVE**

**TELEPHONE, FAX OR WRITE**

for an illustrated brochure and the address of your nearest stockist.  
Cenbrum Lighting (Sales & Hire) Ltd, 168 Chiltern Drive, Surbiton, Surrey KT5 8LS.  
Telephone: 01-390 0051/01-390 4841. Fax: 01-390 4938. Telex: 892337

**The best supporting act around**

AC LIGHTING

FOR

**PANI  
SALES  
&  
SERVICE**

**Next Day  
European  
Delivery**

**U.K. SALES AND SERVICE**

AC LIGHTING LTD  
Unit 4, Spearmast Industrial Park,  
Lane End Road, Sands,  
High Wycombe, Bucks HP12 4JG

TEL: 0494 446000

FAX: 0494 461024

TELEX: 838829 ACLITE-G



**KEEP ON  
SHINING  
1 2 0 2**

PANI - HMI FOLLOWSPOTS  
ARE WELL KNOWN ALL OVER THE WORLD.  
THEATRES, OPERA HOUSES, AND  
SUPER - ACTS OF THE MUSIC  
BUSINESS USE PANI  
FOLLOWSPOTS TO  
MEET THEIR MOST  
DEMANDING  
APPLI -  
CATIONS.



THAT'S  
WHY

WE INTRODUCED  
THE NEW HMV 1202  
SHORT - THROW FOLLOWSPOT.  
JUST LIKE ITS PREDECESSOR  
THE HMV 1200, THIS UNIT  
IS SETTING NEW STANDARDS.  
BECAUSE THAT'S WHAT YOU'RE AFTER.

FOR MORE INFORMATION, THE DEALER NEAREST YOU,  
OR OUR REFERENCE GUIDE, CALL  
(01043222) 93 24 62-0, 8:00A.M. - 5:00P.M.  
TELEFAX (01043222) 96 42 87 FOR 24 HOURS.

LUDWIG PANI  
LIGHTING TECHNOLOGY  
KANDLGASSE 23, A-1070 VIENNA/AUSTRIA



**THE LIGHT THAT FITS**

**JANDS****ESP 24-36**

LIGHTING CONTROL CONSOLE

*As creative as you are!*

- 24 or 36 channels with full manual facilities
- Up to 288 Level conscious Scenes in banks of 12
- Up to 12 Chasers, each with 1 to 24 steps
- Output Hold for swapping scene banks
- Easy to operate programming controls with display
- Analog and Digital Outputs

U.K. & EUROPE  
A.C. LIGHTING Ltd  
Unit 4, Spearmast Industrial Park,  
Lane End Road, SANDS,  
High Wycombe, Bucks HP12 4JG  
Ph (0494) 446000 Fax (0494) 46 1024

U.S. WEST COAST  
T.M.B. ASSOCIATES  
3416 W. Burbank Blvd  
Burbank, Ca 91505  
Ph (818) 842 9652 Fax (818) 842 1064

INTERNATIONAL  
DISTRIBUTOR ENQUIRIES  
JANDS ELECTRONICS Pty Ltd  
578 Princes Highway  
St Peters, NSW 2044 AUSTRALIA  
Ph 61-2-516 3622 Fax 61-2-517 1045

# PLASA News

## Strengthening Appeal of PLASA Show

Demand for stand space at Light & Sound Show '89 has continued at a high level since sales opened in early February. More than 100 companies have already confirmed their bookings for the UK's premier show for the industry, to be held at Olympia 2 in London from September 10-13 this year. The official exhibition of the Professional Lighting and Sound Association (PLASA), the Light & Sound Show is continuing to grow in size and appeal and is now acknowledged as one of the few truly international shows for the entertainment industry.

The high level of response to the reservation of space demonstrates that manufacturers and suppliers have recognised the value of promoting themselves to the show's specialist visitors from the broad spectrum of club, pub and leisure venues, through to concert halls, theatres, opera houses and those on tour. A significant number of new exhibitors have booked space, among them DHA Lighting, Farrahs, The Sound Department, Court Acoustics, Tunewell Transformers, Laser Magic, Protek Sound Systems and Hi-Profile Concepts. Interior leisure venue design companies have also booked space, adding yet another dimension to the ever-growing spread of exhibitors.

Also new to this year's show is a series of seminars, initiated by PLASA, with topics ranging from fixed installations through to live and touring technology. Full details of the seminar programme will be released over the coming months.

Space is still available for exhibitors wishing to reach the Light & Sound Show's unique range of visitors. Interested companies should contact show organiser David Street, 3D Services, 10 Barley Mow Passage, Chiswick, London W4 4PH. Telephone: 01-994 6477.

## Joint Venture Terms

The joint venture terms for Lighting Dimensions International '89 have been received from the DTI. The shell scheme will be £7.60 per square foot and £3.50 for space only. In addition there is the possibility of a travel grant. For further details contact Tony Andrew at the PLASA office. A full report on the DTI organisers' decision to move the exhibition to Nashville is featured on page 12.

## Comic Relief

PLASA member company Optikinetics are to be involved in a project, the nature of which remains ambiguous! John Evans of Leisure Innovation approached the company about supplying a strobe to illuminate in daylight an enormous jet of water, whose ultimate destination is the middle of an unknown lake in the middle of an unknown leisure park.

A preliminary trial was organised, for March 10th, with the aid of the Sussex Fire Brigade, where a bank of 33 terrastobes, comprising 400 watts each, added lustre to a 400 feet high jet of water on Newhaven Front. The fact that the test run took place on Red Nose Day has not escaped the notice of Dave Thomas at Optikinetics, and as he confided to L+S: "I'm concerned that the whole operation may be part of some giant stitch-up campaign by other PLASA members."

## Vital Legal Briefing

Reservations for the legal seminar scheduled for March 23rd are still arriving, an indication that the industry has recognised the value of being forewarned and thus forearmed in the face of legal complexities. The proposed programme for the seminar is printed overleaf. Places are still available for anyone wishing to attend, and it will be chaired by Alex Carter-Silk. The price per delegate is £15.00 + VAT, which includes a buffet lunch, and further details can be obtained from Tony Andrew.

## Musika Moscow

A special price has been negotiated for those attending the exhibition in July. The fixed cost will include the shell scheme, carpet, fascia, table and chair and mains electricity connection. Details available from Tony Andrew.

## Far East Trip

The dates for the trip to the Far East, detailed in last month's L+S (Jan 29 - Feb 16) have received official confirmation. In all probability, the outward mission will be based in Sydney.

## Exhibition Diary 89

### SIEL 89

April 9-12, 1989.  
Porte de Versailles, Paris, France.  
Organised by Bernard Becker Promotion,  
161 Boulevard Leleuvre, 75015 Paris.  
Telephone: (1) 45.33.74.50

### Pub, Club and Leisure Show

April 11-13, 1989.  
Olympia 2, London.  
Angex Ltd., Europa House, St. Matthew Street,  
London SW1P 2JT.  
Telephone: 01-222 9341.

### SIBMAGIS

April 10-13, 1989.  
Rimini, Italy.  
Ente Autonomo Fiera Di Rimini,  
PO Box 300, 47037 Rimini, Italy.  
Telephone: 0541/782000.  
UK enquiries: PLASA general secretary,  
Tony Andrew, 7 Highlight House, St. Leonards Road,  
Eastbourne, East Sussex BN21 3UH.  
Telephone: (0323) 410335.

### USITT Conference & Stage Expo

April 12-15, 1989.  
Calgary, Canada.  
National Office: 330 West 42 Street, Suite 1702,  
New York, NY 10036.  
Telephone: (212) 563 5551.

### Expo Musica, Madrid

May 17-20, 1989.  
Madrid, Spain.  
Organised by IFEMA (Institution Ferial de Madrid),  
Avda de Portugal, s/n Casa de Campo,  
28011 Madrid 1101.  
Telephone: 470 10 14.

### Audio Visual 89

May 8-11, 1989  
Wembley Conference Centre, London.  
Organised by emap Maclaren Exhibitions Ltd.,  
840 Brighton Road, Purley, Surrey CR2 2BH.  
Telephone: 01-660 8008.  
Contact: David Copeman.

### Showlight 89

May 15-17, 1989.  
Hilversum Studios, Amsterdam, Holland.  
Organised by The National Illumination Committee GB  
in association with Netherlands Broadcasting Svs.,  
NOB, PR Department, Postbus 10, 1200 JB Hilversum,  
Netherlands.  
Contact: Maureen van Woudenberg.  
Telephone: 035-775115.

### ABTT Trade Show

May 18-20, 1989  
Riverside Studios, Hammersmith, London.  
Enquiries: ABTT, 4 Great Pulteney Street, London  
W1R 3DF.  
Telephone: 01-434 3901.

### NOTT 89

May 28 - June 2  
Copenhagen, Denmark.  
Union of Theatre Technicians in Denmark  
Telephone: (1) 245808.

### APRS Show

June 7-9, 1989.  
Olympia 2, London.  
Enquiries: APRS, 163a High Street, Rickmansworth,  
Herts WD3 1AY.  
Telephone: (0923) 772907.

### Musika '89 Moscow

July 18-25, 1989.  
Enquiries: Glahé International Group Ltd.,  
Tel: (0787) 228086.  
[Also Tony Andrew, PLASA general secretary,  
0323 410335].

### PLASA Light & Sound Show '89

September 10-13, 1989.  
Olympia 2, London.  
Exhibition Organiser: David Street,  
Telephone: 01-994 6477.  
General Enquiries: PLASA general secretary,  
Tony Andrew, 7 Highlight House, St. Leonards Rd.,  
Eastbourne, East Sussex BN21 3UH.  
Telephone: (0323) 410335.

### Lighting Dimensions International 89

November 17-19, 1989.  
Nashville, Tennessee.  
Enquiries: Patricia Mackay or Jackie Tien,  
Lighting Dimensions, 135 Fifth Avenue, New York,  
NY 10010, USA.  
Telephone: (212) 677 5997.



## Legal Seminar

Thursday, March 23, 1989  
The Crest Hotel, South Mimms

Commencing at 9am

(see page 46 for full details)

**IT WILL PAY YOU TO ATTEND!**

## Product Liability and the Lighting and Sound Industry

The Consumer Protection Act 1987 came into force on 1 March, 1988. It was the Consumer Associations who demanded changes in the law to provide for strict product liability, for damage to property or injury to persons resulting from failure in manufactured products.

Product liability has been well-known in the United States for many years and also in many European countries. The new Act goes some way to bringing English Law into line with our international trading partners. The essential feature of the Act is that the defective product which causes damage will virtually automatically bring liability upon the producer or vendor, or indeed anybody who applies their trade name to the product without the necessity for the injured party to prove any fault or negligent production on behalf of the producer or vendor.

Liability arises under the new Act for the production of defective products. 'Defective products' are defined in the statute in terms that, "the safety with respect to the product is not such as persons are generally entitled to expect." The important point to note is that it does not require a mechanical defect in the product. If a product is not safe by virtue of the method of operation of the product or because of its failure, then it is defective within the meaning of the Act.

If, for example, a light explodes injuring a performer, or indeed a member of the public, there will no longer be a necessity for that member of the public to show that there was defective manufacture or design. Members of the public are entitled to assume that such lamps are 'safe'. The areas in which the Act will bite are wide and varied. Misuse of power supplies in the past has been a steady source of income for some lawyers. If the misuse of power supply causes injury, then the supplier must question whether the power supply itself is safe within the meaning of the Act.

The Act does not prevent the use of exclusion clauses in contracts. It permits the use of warnings in relation to products which may cause injury. Contractual notices do not, of course, bind third parties who come into possession of the goods or who are affected by them.

The Act also covers products within products. If, for example, a power supply fails because of an internal transformer bolt, then the supplier of the transformer is no less liable than had he manufactured the transformer himself. The supplier of the transformer may pass liability back to the person who produced the transformer, however, if products are obtained from

various sources of supply, then the producer of the power supply must be capable of ensuring that he can identify the source of the transformer in order to pass liability back. It is conceivable that the product which fails could be as small as a screw, a bolt or a fuse. In the process of manufacturing high voltage electrical components, the maintenance of detailed stock records may become very important indeed.

There are defences provided by the Act, particularly the 'scientific or technical defence' but these must be viewed with caution until such time as case law has established their nature and extent.

Product liability insurance must now be considered a priority for those companies who do not already carry such policies. They would do well to investigate the position and to establish no claims discounts before the rise in litigation in this area makes insurance considerably more expensive than it is at the present time. Further questions in relation to the operation of the Act will be answered in the legal seminar on 23 March.

A fuller report into product liability and its effects on the lighting and sound industry is available to PLASA members from the PLASA office.

## PLASA Legal Seminar, Thursday, March 23rd

### Agenda

#### Getting into a Mess

9am

##### What is being bought and sold.

Formation of a contract, examples of the way in which the industry conducts business.

10am

##### What was agreed?

The basic law relating to the creation and enforcement of contracts, creating standard procedure and training salesmen and buyers.

#### Question and Answer Session.

11am

##### Fine tuning the contract.

- Avoiding unnecessary liability on behalf of sellers and spotting unenforceable exclusions of liability for buyers. Negotiating the terms.
- Retaining title.
- The Consumer Protection Act.
- Liquidated damages and penalty clauses, their use and limitations.
- Aspects of intellectual property.

#### Question and Answer Session.

Lunch

#### Getting out of the Mess

1.45

##### Most common causes of broken agreements.

- Sub standard goods, defective goods.
- Goods not to specification.
- Insolvency.
- Bad payment.
- Consequential loss.

2.30

##### Entering into negotiations or full blown dispute.

- Defining the objective on behalf of the manufacturer.
- Defining the objective on behalf of the purchaser.
- Methods of recovery available. Matters to be considered before instructions are given to representation and financial considerations.

3.30

##### What to expect from a fully contested dispute.

"The problem will not go away."

- When to sue, when to defend, when to settle.
- Running a contested dispute, use of Counsel and solicitors.
- Defining a successful action.

#### Question and Answer Session.

The objective of the seminar will be to take the medium sized company through all aspects of contract law in a whistle stop tour. The objective will not be to teach individuals all aspects of the law, but rather equip those who attend with a good grasp of the essential features of a contract and the principles which they must bear in mind when buying and sell

ing equipment. By taking an overall view of business methods, formal procedures for creating and administering contracts, the problems inherent in a full-blown dispute and the effects of a badly administered contract, delegates attending the conference should leave with a better understanding of the machinations of the law.

The individual areas which are dealt with by the first seminar can be picked up in later seminars. One of the most important areas not itemised for the first seminar is that of doing business with foreign companies. This is a huge field and one which it is felt better to leave for a later date, though it may be touched on in the context of creating and suing on contracts generally.







# Ice Cluster at Stevenage

Ben Duncan reports on a 'value-for-money' cluster system installed by Page One Systems at The Ice Bowl, a new ice-rink at Stevenage.

**Sports & Leisure Developments** plc was formed in 1984. The **Ice Bowl** at Gillingham was its first facility, opened in October '84 by her Majesty The Queen. Since then the company has undertaken the management of Romford and Billingham ice rinks on behalf of the London borough of Havering and Stockton-On-Tees borough council respectively. The **Ice Bowl** at Stevenage was opened in 1988 and with its successful track record in leisure management, S&LD plc was chosen to equip and manage the building. For the future, two new water-parks and two ice rinks are set to open in 1989.

Installation was by **Page One System Technology**. MD Chris Taylor commented: "We were invited by Sports & Leisure to put together proposals for a sound system with a relatively 'tight' budget. About a year earlier, we'd completed a re-vamp of the sound system at Sports & Leisure's first ice rink, at Gillingham, in Kent. To date, our client hasn't suffered a single unit component failure. Consequently, both our client and ourselves were happy that the new rink at Stevenage, being of the same size, and being fitted with acoustic absorption, should use a similar cluster format."

BD: How do the two clusters differ?

CT: "At Gillingham we used a single cluster of eight TOA 380-SE cabinets and one SEB sub-woofer. We bi-amped the system to push the CD (constant directivity) horn's crossover point down to 500Hz. At Stevenage, because of the modest budget and considering the improved acoustics (Gillingham hadn't any appreciable acoustic absorption in the ceiling), we adopted the TOA cabinets' internal passive crossovers. We're very pleased with the results. The Ice Bowl opened in mid-October and the only call-back was to fit some ancillary paging speakers to an area of the building that was only completed after the opening."

BD: How big is the venue?

CT: "The ice pad is 56m x 26m (182' x 84'). Even allowing for cluster height, the longest throw is in the order of 30m."

BD: How does ice affect sound quality?

CT: "The acoustic properties of an ice rink are likely to change considerably according to the number of people on the ice. This variation in reverberation will be more noticeable than in a theatre, where the acoustic absorption of the empty seats helps compensate for the absence of people."

BD: Can you sum up the environment?

CT: "The sound system is only worked hard in the evenings and during the afternoons when there are school holidays. During these 'Ice Disco' sessions, the ice is heavily populated, which reduces reverberation and therefore assists system performance. At other times, the system is used for low-level background music with paging announcements. At these times there is more acoustic reflection, but then again, the ambient noise level is lower. So the system doesn't need to be driven so hard, thereby avoiding



the excitation of resonances in the building."

## The System in Detail

The cluster consists of eight 380-SE 3-way, full range cabinets arranged in a circle and one SEB sub-woofer, which points downwards. Each 380-SE contains a single 15" Thiele-loaded bass driver, a 90° x 40° (h x v) midrange CD horn and a horn tweeter with 90° x 40° dispersion (h x v). The SEB enclosure is ported with a single 18" driver.

The cluster is driven by two TOA P.300D amplifiers rated at 600w/ch into 4 ohms. Each amplifier channel drives two 380-SE's in tandem giving 300w per cabinet, or 2½kW overall. Each cabinet is connected back to the amplifier rack (some 70'/20m away) with individual runs of 2.5mm square cable. The sub-woofer is driven by a single P.150D in bridge mode, giving the required high swing into eight ohms.

To balance the cluster's coverage, each amplifier's gain needed individual adjustment. With the knobs being stood-off by varying amounts from their maximum setting, this raised the question of abuse by DJs, who'd want to turn them all up to 10! This is a classic problem and Page One have overcome it in the design of the rack by a simple technique which plays on the mentality of knob-twiddling DJs. As a result, the system hasn't come to any harm, despite the rack being without a security cover for the first 16 weeks of operation.

Although the 380-SE's come complete with

socketry for bi and tri-amping, owing to the limited budget, the system hadn't the benefit of an active crossover. Active derivation of the sub-woofer signal was possible through the HIT SP-7 disco mixer in the DJ booth, which includes a sub-woofer output. But this would have needlessly complicated the paging override facility, so the SEB cabinet's internal 120Hz, -12dB/octave passive crossover was put to use. PA announcements over the cluster are mixed separately, without the sub-woofer.

Aside from the disco system, the rack contains a series of TOA plug-in channel modules for combining priority paging, a radio mic and a cassette deck feed from the duty manager's office. The radio mic enables the duty manager to make announcements while wandering around the rink. The cassette machine's location means the manager can look after the background music when the DJ booth is not operational. Indeed, the whole system is normally controlled and assigned from the duty manager's office, but a custom routing panel allows direct control from the rack for ease of testing. TOA's E-131 ½ octave graphic equaliser completes the rack.

Equipment in the DJ booth includes the usual Technics SL-1200 turntables fitted with Shure SC-35C cartridges and an RD14 mic, TOA's equivalent of Shure's SM58. The radio mic carried by the duty manager is also a TOA model, WM-230.

Paging announcements to the ice rink's cafe and bar areas are relayed by TOA's

compact and colourful F-150 speakers. These are ported full-range units, containing a single 5" driver, rated at 40 watts rms, or 120w programme. They're driven in 100v line mode, the necessary transformers being retrofitted. Whilst interviewing Chris Taylor, the systems designer, in the bar area, a series of announcements came over with first-rate intelligibility, of the kind that cuts over conversation and says 'please now listen to me', without excessive level.

BD: There don't seem to be any compressors or limiters in the system. Why not?

CT: "The TOA VR-1006 paging console in reception, from which all announcements are made, has an integral compressor. Although the dynamics are fixed, it provides adequate compensation for variations in mouth-to-mic distance and voice loudness. In the DJ booth, the HIT SP-7 console is also equipped with a compressor/limiter function. The dynamics are fixed, but the thresholds are switch-settable. We bypassed the bi-stable switch to lock-on the SP-7's limiter."

Phil Collins (group manager for the Gillingham and Stevenage ice rinks) says: "The acoustic problems in ice rinks are particularly acute. The system has successfully overcome these. Not only does it provide us with background music; it also gives us the 'whoomp' for disco sessions. Attendances at Stevenage are very encouraging. Last week - admittedly it was half term - we had 17,000 through the doors. Above all, we like Page One's system because it's simple and maintenance free."

#### Introducing TOA Electronics

TOA UK was founded in 1977. Since then, TOA components have become highly regarded for industrial and commercial PA installations. Despite an annual turnover of £1000m, TOA's parent company in Japan isn't part of one of Japan's mega-conglomerate companies, the ones that build everything from ships and cranes, through to compact discs and EGA monitors. When pro-audio installers and users criticise equipment originating from Japan, the problems they cite (like lack of hard technical data and the absence of clear lines of technical communication) are in many ways a reflection on the deficiencies of big companies.

TOA is different. Its size, longevity and dogged specialisation in commercial audio make it comparable with Altec in the USA. Founded in 1934, TOA is still a 'family business' which has concentrated throughout its history on developing and manufacturing sound and later, video communications equipment. In the mid 80's, TOA seized on the opportunity to capitalise on their manufacturing skills: TOA's huge R&D budget resulting from its success in commercial PA has been directed into developing products firstly for musicians ('MI') and more recently, for prime music and speech installations, from clubs to stadiums. After four years of intensive research, the first fruits are beginning to arrive (see S&C/F show report this issue).

TOA UK have recently chosen nine distributors to handle music PA installations. Paul Ward, manager of TOA UK's pro-PA division says: "By keeping the numbers small, we can provide technical backup to installers on a friendly, personal basis. We don't do installations ourselves. Although some of our

**Page One System Technology**  
78 Glebe Lane, Maidstone, Kent ME16 9BA.  
Tel: (0622) 28200/20490

**TOA Electronics Limited**  
The Hutton Industrial Estate, Tallon Road,  
Hutton, Essex. CM13 1TC.  
Tel: (0277) 233882



TOA F-150's are used in the bar areas for paging announcements.

dealers are involved with other makes of equipment, what matters is that they are good installers and not half-hearted about specifying TOA equipment where it meets the bill."

#### TOA DISTRIBUTORS

Scotland	Northern Light
North East	Blaydon Communications
Midlands	Carlsboro Sound Services
North West	Level Acoustics
	SAV
Home Counties	Page One
	Audlec
	Hampshire Sound
London	J. W. Parker

#### Page One System Technology

Page One (System Technology) was founded in 1984. The company is primarily a 'systems house', but over the past three years they've been developing a distribution service which is expanding quickly. The majority of Page One's 'systems' work is supplied to intermediaries. As a result, many of the racks of equipment they've supplied bear the names and logos of other companies. In addition to ice rinks, Page One have installed PA systems in airports, shopping centres, sports centres, theatres, conference centres and exhibition halls. A full in-house servicing facility for TOA equipment is maintained.



# MUSHROOM LIGHTING

Lighting Sales and Hire to the  
Entertainment, Conference, Exhibition and Leisure Industries  
Trussing Sales and Hire

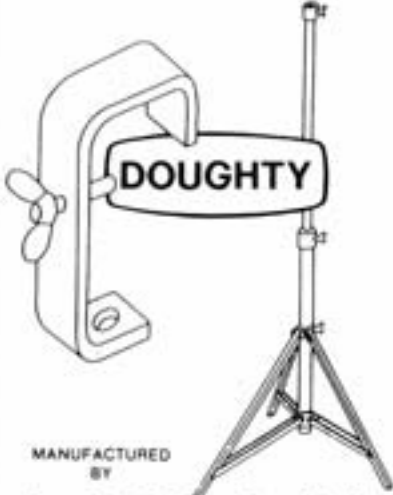
Agents for Clay Paky Golden Scans, Teatro, Slick, Astralloy, Optikinetics,  
System Freestyle, Stanz Lighting Jack, Ultra-Light, Star Frames, MLP.

SPECIALIST DISTRIBUTION & DESIGN SERVICE

MUSHROOM LIGHTING

76 Tenter Road, Moulton Park Industrial Estate, Northampton NN3 1AX.  
Tel: (0604) 494866/494991. Telex: Mushroom 311165 CHACOM G Fax: (0604) 491118

**Lighting+Sound**  
Fax is (0323) 646905



**DOUGHTY**

MANUFACTURED BY

**Doughty Engineering Limited**  
 Crow Arch Lane, Ringwood, Hants BH24 1NZ  
 Telephone: (0425) 478961 Fax: (0425) 474481



**UNUSUAL RIGGING LTD**

RIGGING FOR CONCERT THEATRE COMMERCIAL FILM T.V. & VIDEO PRESENTATION.

4 Dalston Gardens, Stanmore Middlesex HA7 1DA  
**01-206 2733**  
 Fax: 01-206 1432 Telex 945470 Rigglin G

**For details of Advertising ring John Offord on 0323 642639**



**LIGHTING**

**HIRE DESIGN ENGINEERS**

Unit 3 St. Margarets Business Centre  
 Drummond Place Moor Mead Road  
 Twickenham Middlesex, TW1 1JN  
**01-891 4755**

# METEORLITES

## CONCERT, STAGE AND TELEVISION LIGHTING

### ● AUTOMATED LIGHTING

16 COLOUR SHOWCHANGERS IN 6", 8", 10", 12"  
 SIZES TO SUIT 1K, 1.2K, 2K, 2.5K, 5K FIXTURES  
 5.2K 8-LITE MOLECHANGERS  
 1K, 1.2K CYCLITE CHANGERS  
 PAR 64 SHOWCHANGERS AND GELJETS  
 TRIPLE GELJET FOLLOW SPOT CHANGERS  
 1KW 'PARSCANS' WITH PAR, THT AND 16 COLOUR  
 CHANGE, PROGRAMMABLE 256 SCENE MEMORY  
 ARRI H.M.I. DIMMER SHUTTERS  
 CCT COLOURSETTE II 6", 8" CHANGERS

### ● STANDARD FIXTURES

PAR 38 LONG, SHORT, BLACK, SILVER  
 PAR 64 LONG, SHORT, BLACK, SILVER  
 PAR 64 4 CELL, BLACK, SILVER  
 THOMAS 8 LITES ACL, DWE  
 BERKEY CCT 1K FRESNELS  
 QUARTZCOLOR, CCT, MOLE 2K FRESNELS  
 QUARTZCOLOR 2.5K H.M.I. FRESNELS  
 CCT 1KW SILHOUETTE, PROJECT PROFILES  
 STRAND 1K, 1.2K CANTATA PROFILES  
 ALTMAN 6 x 6, 6 x 9, 6 x 12, 6 x 16 LEEKS  
 CCT 650W MINUETTE FRESNELS, PROFILES  
 QUARTZCOLOR 800W REDHEADS  
 QUARTZCOLOR 2K BLONDES

### ● TRUSSING

THOMAS PRE-RIGGED 6", 1', 2'6", 5', 7'6"  
 THOMAS PRT 15°, 30°, 60°, 90°, 120° CORNERS  
 THOMAS PRT 30°-260° VARIABLE CORNERS  
 THOMAS G.P. 2'6", 5', 10' AND 90° CORNERS  
 THOMAS PRT 45° INLINE HINGES  
 THOMAS MINI BEAM 1'3", 2'6", 5', 10'  
 TAS-STAGE 1.2, 1.5, 2.4M TRUSSES  
 TAS-STAGE 90° 4WAY SWAY, 2WAY  
 SHOWTRUSS MINI BEAM 8', 10'  
 SHOWTRUSS HEAVY DUTY 8', 10'  
 ASTRALITE 2M LIGHT DUTY

### ● PROJECTION

RDS 2K SCENEMACHINE PROJECTORS  
 KODAK CAROUSEL PROJECTORS  
 1.6K XENON 16mm PROJECTOR  
 10' x 15' ELECTRIC FRONT/REAR SCREEN  
 VARIOUS ROSCO PROJECTION SCREENS  
 BARCOVISION VIDEO PROJECTOR  
 SONY U-MATIC TAPE MACHINE  
 TEAC 4 TRACK AV TAPE MACHINE  
 ELECTROSONIC PRESENTATION UNIT

### ● EFFECTS

ROSCO 1508 SMOKE MACHINES  
 LE MAITRE SMOKE MACHINES  
 MARTIN FOGGER SMOKE MACHINES  
 CONCEPT LONDONER DRI ICE MACHINES  
 LE MAITRE PEA SOUPER DRI ICE MACHINES  
 RANDOM FLASH EGG STROBES  
 OPTIMETICS/HYLITE STROBES  
 400W UV FLOODS, 40W UV STRIPS  
 NEON STRIPS & CONTROL  
 LE MAITRE/PYROPAK PYROTECHNIC SYSTEMS  
 DHA GORO ROTATORS & ANIMATION DISCS  
 2KW TUBULAR RIPPLES  
 24" MIRROR BALLS

### ● CONTROL EQUIPMENT

AVOLITES 30 & 60 CH ROLACLES  
 AVOLITES 90 & 180 CH DM 500  
 AVOLITES 84 CH x 40 MATRIX  
 AVOLITES 180 CH DIGITAL D-PATCH  
 CELCO SERIES 8 60 CH C/W SOFT OPTIONS  
 CELCO GOLD 90 CH CONSOL  
 CELCO MCI INTERFACE UNIT  
 CELCO MCS 9900/1991 CONTROLLERS  
 STRAND SET SCROLL, AUTOSCRROLL  
 ALDERHAM BRIEFCASE MK1 & MK2  
 AVOLITES 48 & 72 CH, 2K & 5K DIMMERS  
 ALDERHAM 12 x 10K DIMMERS

### ● FOLLOW SPOTS

ALTMAN ORBITOR LONG/SHORT THROW MK 350  
 LYCIAN LONG/SHORT THROW MK350/HT1400  
 STRAND SOLO 1KW CS1/CID  
 STRONG 2K XENON SUPERTRUPERS

### ● FLOOD LIGHTS

STRAND 1/2K, 1K SINGLES CYCLITES  
 THOMAS 1KW SINGLE CYCLITES  
 THOMAS 1KW 6 CELL GROUNDROWS  
 BERKEY 1KW 4 CELL GROUNDROWS  
 QUARTZCOLOR PALLAS 4 1KW GROUNDROWS  
 THOMAS 10 LAMP MR16 BATTERNS  
 STRAND 30 LAMP MR16 BATTERNS  
 QUARTZCOLOR IRIS 1 1KW CYCLITES  
 QUARTZCOLOR IRIS 4 1KW CYCLITES  
 SUNFLOOD 1/2K WORKLIGHTS

### ● RIGGING

VERLINDE 1 TON HOISTS  
 LOADSTAR 1 TON HOISTS  
 LOADSTAR 1/2 TON HOISTS  
 FELCO/MORRIS 1 TON CHAIN BLOCKS  
 TRIFOR 3 TON WINCHES  
 750KGS CHAIN PULLERS  
 1000LBS LOAD ARRESTORS  
 SPREADERBEAMS 2'6", 5', 7'6", 10'  
 SHACKLES, STEELS, SPANSETS ETC  
 MOTOR CONTROL IN 2, 5, 8, 16, 24, 32 CH  
 MULTI-PRESET 6, 24 CH 3, 4 SCENE  
 24' GENIE GAS HOISTS  
 24' GENIE WORK PLATFORMS  
 24' GENIE SUPERLIFTS MANUAL, ELECTRIC  
 28' 1 TON SHOWTOWERS  
 32' 6" 1 TON THOMAS TOWERS  
 32' 6" 2 TON THOMAS TOWERS

### ● POWER AND DISTRIBUTION

240-110V TRANSFORMERS 1KVA-70KVA  
 240V LINE CONDITIONERS 1KVA-4KVA  
 100-280V VARIACS 5KVA  
 240/110-28V TRANSFORMERS 10KVA  
 STAR-DELTA 220-440V TRANSFORMER 5KVA  
 60, 100, 200 A SWITCHFUSES  
 125/250A ELCB DISTRIBUTION  
 16, 32A ELCB DISTRIBUTION  
 CEE 17, 16, 32, 64 A CABLING  
 CAMLOC, BAC POWER CABLING  
 CEE 17 DISTRIBUTION RACKS

### ● VARIOUS

CLEARCOM/BEYER INTERCOM SYSTEMS  
 MODULAR ALUMINIUM TAB TRACKS



**4 ELSTREE WAY, BOREHAMWOOD, HERTFORDSHIRE WD6 1BS**  
 TEL: 01-207 5111 FAX: 01-207 3655 E-MAIL: DGS1518 TELEX: 265871

# The Fibre Optic Story

Paul Raymond on the Technology and Terminology.

The principle of guiding light in a transparent conductor is not new. It was demonstrated by John Tyndall in 1870 to fellow members of The Royal Society. He demonstrated how light would follow a curved jet of water, and many years later John Logie Baird filed patents covering the transmission of light in glass rods in connection with the early development of television. However, these first beginnings were temporarily delayed as large losses of light occurred due to the absence of any optical cladding.

It was not until the late 1960's that the coatings were developed which would allow long runs with small light losses. Of course, the primary reason for the evolution of fibre optics was a response to the demands of the communications industry, which today is the main consumer of fibre optic material. The fibre optic lamps that were prevalent in the sixties were the product of small lighting workshops, and were constructed from communication fibre bundled into tails with car tail lamps as light sources and small revolving colour wheels.

Glass fibre development continued in Britain, with the eventual result that the fibres were being developed exclusively for the transmission of white light. Today the fibre is used for medical, traffic signalling and sensor, motor and decorative lighting applications. Recent developments include side emitting fibres which glow sideways and the use of larger cables to carry more light. Hence the material is useful for primary lighting in specialised applications such as safety lighting in explosive areas, pin point lighting and lighting devices for medical and dental treatment.

Fibre optic lighting is of particular interest to the lighting designer. It provides an abundant, dynamic palette of vibrant effects which can be presented in normally unaccommodating settings. Requiring minimum upkeep, the medium allows the designer true flexibility; it permits originality and brings a fresh, individual approach to lighting design.

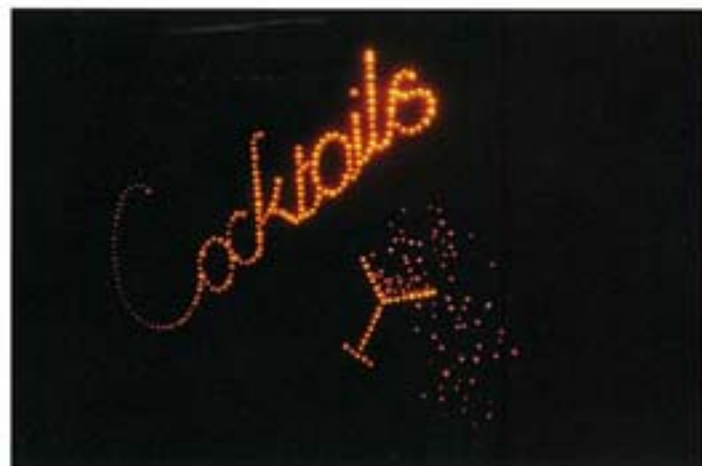
Many of us are familiar with the star ground. Installed in a theatre curtain, ceiling or solid fascia, or even presented in three dimensions, it is certainly one of the most beautiful effects around. The visual impact created by the minute points, so powerful and crisp like starlight, subtly twinkling or



BBC Bristol: Professor Ian Fells addresses the camera during a recent 'Take Nobody's Word For It' programme which featured fibre optic curtains and bundles.



Colour-changing fibre optic signs (above and below) make ideal use of the special properties of fibre optic technology.





# THE SHARP ONE

## New range of 1 KW spotlights

- F101 / Fresnel spotlight.
- C101-C103 / Plano-convex spotlights.
- DS101 / Zoom profile spotlight.
- CN101 / Long throw plano-convex spotlight.

# ADB

*lighting systems*

**N.V. ADB S.A.**

Leuvensesteenweg 585  
B-1930 Zaventem  
Belgium  
Tel. +32/2/722.17.11  
Tx 22154  
Fax +32/2/722.17.64

**ADB-Sofair S.A.**

47, Rue de la Vanne  
F-92120 Montrouge  
France  
Tel. +33/1/42.53.14.33  
Tx 206428  
Fax +33/1/42.53.54.76

**ADB-Sofair**

218, Grande rue de la  
Guillotière  
F-69007 Lyon  
France  
Tel. +33/78.58.46.50  
Tx 900264  
Fax +33/72.72.98.20

**ADB Marseille**

22, Av. St. Barnabé  
F-13004 Marseille  
France  
Tel. +33/91.25.22.00  
Fax +33/91.34.24.70

**ADB GmbH**

Dieselstrasse 4  
D-6052 Möhlheim am  
Main  
Deutschland  
Tel. +49/6108/66204  
Tx 4189103  
Fax +49/6108/66205



Some fibre optic components.



A bundle of fibre optic ends.

popping harlequins of colour, is almost ethereal.

The following is an indication of the many applications of fibre optic lighting:

#### Ceilings

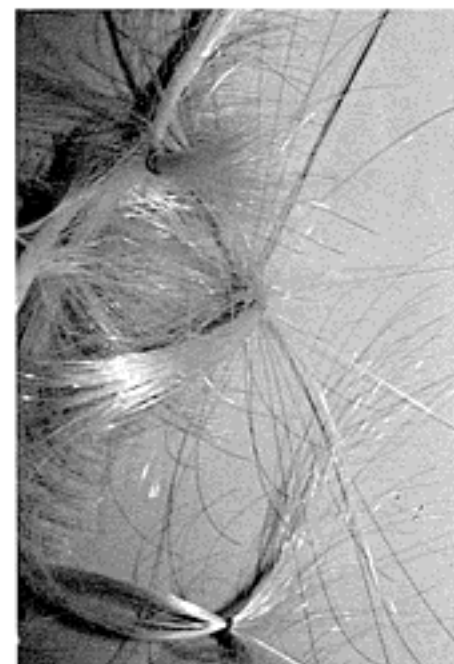
Ceilings and walls made with fibre optic points and various lenses appear as galaxies of stars shimmering and scintillating like night skies. The fibre ends are either mounted in special fixing bezels or interfaced with various lenses, which are, in turn, fitted into other bezels during installation. Normally lightsources with 50w halogen lamps and inbuilt shimmer or twinkle wheels are used with the fibre optic bundles, having several hundred tails, occasionally in varying sizes.

#### Signs

Used in signs, fibre points provide vivid colour changes and animations. In interior and exterior signs, with single or multiple lightsources, they are often sequentially controlled. Fibre optic points are used for outlining, infill, in the back and fore ground and as eye catchers or 'shouters'.

#### Mirrors and Plants

Mirrors with optics installed through or behind removed silvering provide intense displays with high brightness points of light, at levels previously impossible due to high temperatures and frequent maintenance requirements. In or around water and plants, fibre optics provide striking effects. They are



Fibre optic effects in construction.

an excellent medium for use in such environments as they carry no electrical power or heat.

#### Fireworks

Fireworks are created either three dimensionally or in panel form, by fixing varying sizes of fibres to frames and sequentially controlling the lightsources. The latter can include xenon strobed tubes which are most effective when used in large, open air displays.

#### Side Emitting Fibre

A recent development in fibre optics has been the increasing use of side emitting fibres which spill light sideways, rather like illuminated lengths of string. The fibres may be arranged in linear form to resemble a curtain. When fed by colour changing light, the effect can be stunning. As with other fibre optic materials, many effects may be created in combination with laser light.

#### Colour Flow

Sequencing can be achieved by arranging the fibre ends to cohere with the common end input port in order that the colour wheel will create the same flow at the exit points. Similarly, with the side emitting fibres the impression is equally dramatic.

#### Showcases

For lighting applications in showcases or museums, larger size conduits are employed providing sufficient, pure white light for viewing comfort. The cold nature of the beam results from the response caused by the fibre absorbing, and not transmitting, the harmful ultra-violet and long infra-red wavelengths that are directly emitted by high luminance lamps. Hence works of art or museum pieces may be safely illuminated without compromising their aesthetic qualities through exposure to damaging lightsources.

#### Edge Lighting

Edge lighting of acrylics, which can be either cut with polished edges on view or be engraved to illuminate, is made by feeding the light into the acrylic sheet and interfacing it with the fibre. This brings the colour changing light to the acrylic and removes the need to access the junction and the lamp may be sited remotely and conveniently for service.

#### How Fibre Optics Work

Light leaves the light source unit and is ducted through conduits rather similar to electrical cables. The light ricochets off the walls of these 'arteries' and is eventually emitted from the end to be used directly, re-gathered with lenses or diffused as with other point sources. Side emitting fibres

have multiple fractures which spill light along their length. Distressing or partly removing the index can also cause the light to leak. The transport of light in the interior core of fibre is achieved by successive reflections on the surface separation, constituted by the core and coating. A normal acceptance - exit angle would be approximately 72°.

## FIBRE OPTICS THE FACTS & FIGURES

**Angle of light emission:** At the end of a light guide without lens - 72°.

**Normal colour temperature:** With halogen light sources - 3000-3200K.

**Attenuation:** 0.3dB metre.

**Glass fibres:** These are sized by active optic area in mm<sup>2</sup>, i.e. size 1 = 1mm<sup>2</sup>, size 4 = 4mm<sup>2</sup> (area of light conducting material, not coating etc.).

**Minimum bend radius:** 10mm sizes 1-3 (installation) The radius is slightly larger for continuous flexing application.

**Size 1 Cable:** This contains 400 fibres of 50µm.

**Typical light levels:** (not maximum) with a 50w source in bundles of 1 metre of fibre, measurement distance 1 metre.

Size (mm <sup>2</sup> ):	Lux at 1m:	Candela on Axis:
1	5	5
2	10	10
4	20	20
12	60	60

The first figure comes from the finished end, the second with collimating lens.

**Bundles/Harnesses:** These can contain from 500 size 1 tails to 125 size 4 tails. These are normally made to measure and can contain mixed sizes and lengths.

**Larger sizes:** For use in museum and gallery lighting etc., the bundles can be made up of multiples (eg of size 12) into standard or custom made ferrules.

**Sheathing:** The material generally used is pvc, which provides flexibility as well as mechanical and humidity protection to greater than IP55 standards. It is also normally self-extinguishing to BS 4066 pt 1.

**Light sources:** 20-50-150 watts halogen (mostly 50w with longlife 3000hr lamps) Developments are also taking place in metal halides.

**Bullet lenses:** These are small pointed lenses which scatter light from fibre ends.

**Bezels:** These are used for mounting bullets or fibre ends into ceilings or facias.

**Pearl Ball lenses:** When fed with light from fibre ends, the lenses appear as small round lamps.

**Curtain washers:** These hold fibre ends in theatre curtains and other soft facias

**ELICS:** Edge Lighting Interface Clips hold the fibre ends in position on the acrylic sheets, making the input of light for edge lighting effects simpler.

**Colour Wheels:** The wheels are motorised as in effects projectors. The lightsources use a 95mm wheel and the motor speeds are generally 1-3rpm.

**Spot lenses:** These lenses are used to collimate light from optic ends. The smaller lenses are commonly used for direct viewing, whilst the larger lenses are used with

greater diameter optics for throwing beams of light for decorative purposes.

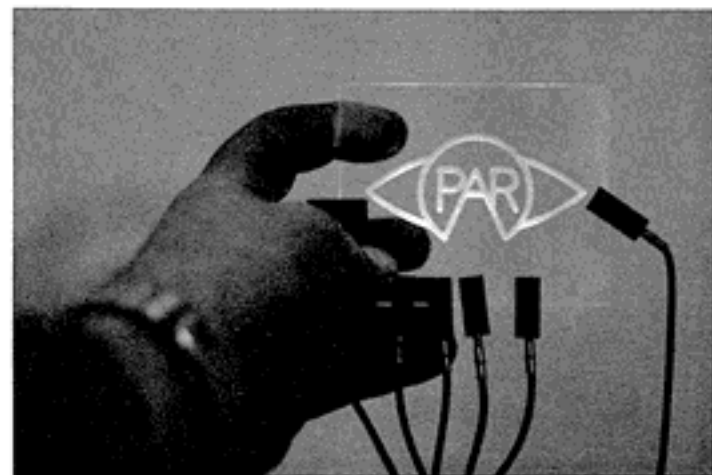
**Polymer fibres:** These are mostly used in sign making and are sized by diameter, mostly from 0.5-2.0mm (at present these are limited to lightsources of 20w or less power) Polymer fibres are generally unshathed single fibres.

### Take Nobody's Word For It

Fibre optic bundles and curtains were recently demonstrated on BBC 2 by Professor Ian Fells. Having seen the fibre optics displayed on 'Tomorrow's World', the producers of 'Take Nobody's Word For It' felt that the fibres would be an appropriate development to feature on their science-based programme.

The concept of fibre optics lends itself to the medium of television because the idea that lies behind it is one that can be easily communicated. Coupled with this is the fact that although each fibre is the result of high technology production, the result is visually consumed within seconds.

Paul Raymond, specialist in fibre optics and a familiar figure in the decorative and effects lighting industry for 20 years, co-directs with David Press Par Opti Projects Limited, the fibre optic company. The operation's headquarters are based in Chiswick with the factory situated in Acton. Par Opti is committed to the research, development and marketing of fibre optic components for lighting applications. Their clients include major broadcasting companies, government ministries, theatres, cinemas, town centres, museums, galleries and many other places of entertainment worldwide.



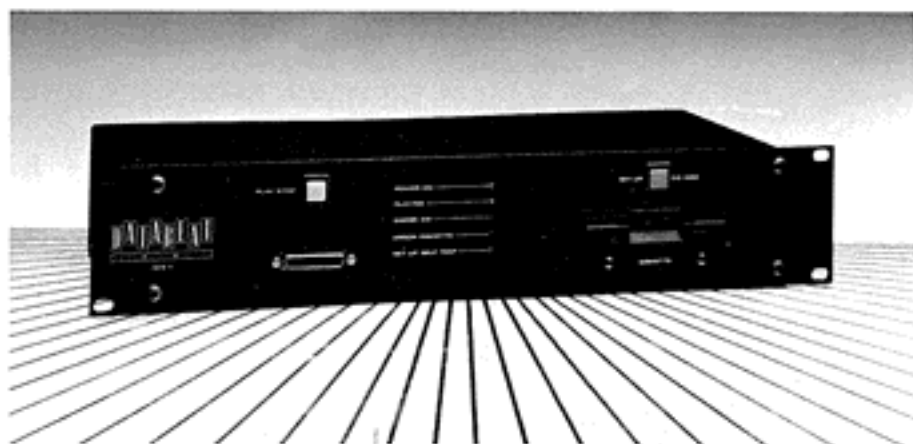
A colour-changing fibre optic fed edge light displaying the Par Opti logo.

Par Opti Projects' Paul Raymond (left) with Professor Ian Fells at BBC Bristol.

## Oxtron Digital Systems

Designers and manufacturers of the revolutionary compact disc Databeat Intelligent Music system have now also been appointed as National Distributors by

**DATABEAT**  
DIGITAL MUSIC SYSTEMS



For full details please contact our sales office on (0920) 60542

**OXTRON DIGITAL SYSTEMS**

SUCKLINGS YARD · CHURCH STREET · WARE · HERTFORDSHIRE · ENGLAND · SG12 9EN  
☎ (0920) 60542. MOBILE ☎ (0836) 296178. FACSIMILE ☎ (0920) 60543

# SIEL 89

7th INTERNATIONAL TRADE SHOW  
OF EQUIPMENT AND TECHNOLOGY  
FOR ENTERTAINMENT AND LEISURE PLACES

## & 4th THEATRICAL SERVICES EXHIBITION

April 9/12 - 1989  
Parc des expositions Porte de Versailles - Hall 1-3 - Paris - France

From 9 to 12 April 1989, 20 000 visitors from whole Europe will meet at SIEL to discover all the new equipment for entertainment and leisure places. 300 exhibitors will show the latest technology in:

- sound
- acoustical equipment
- stage machinery
- furniture
- show organisation
- lighting
- special effects



- decoration, decors
- promotion
- costumes
- video
- radio
- studio equipment
- scenography

**SIEL IS THE N° 1 PROFESSIONAL EVENT IN EUROPE:**

• 300 Exhibitors • 20 000 Visitors from 40 Countries

**GET YOU FREE INVITATION AND BE THERE TOO!**

The 7th SIEL and the 4th THEATRICAL SERVICES EXHIBITION are organised by

**BERNARD B E C K E R**  
communication

To receive information on SIEL 89 please return the coupon below to:

**BERNARD BECKER COMMUNICATION**  
161, BOULEVARD LEFEBVRE 75015 PARIS - FRANCE  
TEL. (1) 45 33 74 50 - FAX 45 32 71 29 - TELEX 201 875

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

NAME \_\_\_\_\_

Information  Visitor  Exhibitor



# THE JBL CONNECTION

Ben Duncan visits the JBL Professional team at Harman UK.

Harman UK is best known to pro-audio users and installers as the main distributor of JBL and UREI speakers and electronics. By itself, Harman UK turns over £14m, arguably more than any other pro-audio distributor in the UK. Beyond that, it's part of a large family of companies involved in manufacturing and selling all kinds of audio and AV equipment across the globe. For brevity, the table in figure 1 lists just the manufacturing divisions whose products are familiar to readers. JBL was one of Harman's early acquisitions (1969). The most recent have been well known UK companies: Bandivie and Soundcraft (in 1987 and '88).

The huge combine is headed by its namesake, an American, Sidney Harman, who began manufacturing domestic Hi-Fi systems in the 50's in partnership with Bernard Kardon, as Harman-Kardon. In 1976, Harman (the man) was appointed Under-Secretary of Commerce to President Carter's administration. To avoid any conflict of interests, he was forced to sell up, to Beatrice Foods (another US multinational). Needless to say, the manufacture of audio components didn't mix too well with food marketing. So in 1980, Harman was able to buy back most of the constituent companies.

## JBL: From the beginning

Within pro-audio, JBL is easily the best known company in the conglomerate. But did you know JBL is almost certainly the biggest and longest-lived speaker manufacturer in the world? James Lansing, a skilled machinist and expert craftsman in things metallic and mechanical formed a manufacturing company in Los Angeles in 1927 in partnership with Ken Decker.

In 1934, Lansing worked with MCM (of Hollywood), to develop the first commercially available 2-way cinema speaker system, using horn loading. In 1939, Decker was killed in a plane crash. Facing financial difficulty, Lansing began making products for Altec (Altec were 'All technicians' who'd split away from Western Electric in the 30's). By 1941, he was forced to sell his company to Altec, and begin a 5 year contract with them. This is how the name 'Altec-Lansing' originated. When this finished in 1946, Lansing quit to found **Lansing Sound Inc.**, later changed to **James B. Lansing Sound Inc.** - hence the initials JBL. Three years later, Lansing was dead, and the company went through hard times.

By 1953, William Thomas, who'd become the president, had re-established JBL as a high-end company dedicated to excellence in industrial design and engineering. Around this time, the acoustic lens (widely used in PA systems quarter of a century later) was introduced, together with the **Alnico V** magnet assembly. In the following year, JBL began manufacturing speaker components. Model 375 was a 4"100mm compression driver with an aluminium diaphragm. It was made for **Ampex** and **Westrex** for cinema and theatre sound reinforcement. Twenty years later, this driver became the mainstay of touring sound systems, having been renamed 2440.

After developing a variety of domestic horn speakers, the ring radiator compression-driver tweeter followed in 1957. 1961 saw the introduction of JBL's first studio monitor system, built for **Capitol Records**. When **EMI** acquired Capitol, they began to use JBL monitors in their studios worldwide.

In 1965, JBL designed a series of speakers for **Leo Fender's** famous guitar and electric bass amplifiers. This marked the beginning of JBL's involvement with music reinforcement. In 1969, twenty years after Lansing's death, the company was acquired by Harman from William Thomas. Within 5 years, JBL monitors dominated US recording studios, while JBL horns and drivers had become the **de facto** standard components throughout 70% of touring PA rigs around the world. 1979 saw the introduction of JBL's patented **Bi-Radial** ('baby bums') horn flare, a first generation constant-directivity horn which gave



The JBL 4700 Series.

Figure 1.

## HARMAN INTERNATIONAL Pro-Audio Manufacturing Divisions

Division	Parts manufactured	Location
Harman Manufacturing	JBL loudspeaker components	Northridge, California
Harman Electronics	JBL amplifiers & electronics UREI electronics All in-car electronics for Ford & Chrysler in USA	Northridge, California
Audax	OEM loudspeaker components domestic & professional drivers	Fontenay Sous Bois, France
Lydig	Hi-Fi & Pro-Audio cabinet manufacture for Europe	Ringkøbing, Denmark
Soundcraft	Mixing consoles	Borehamwood, UK
Other manufacturing divisions located in the USA include: Harman-Kardon, Harman Motive, Pyle Industries, Epicure Concord, and Infinity.		

improved pattern control at hf. Three years later, JBL were the first company to make compression driver diaphragms of titanium to extend hf frequency response. Then in 1988, they introduced lightweight compression drivers, using Neodymium magnets. In the past decade, there have been fewer pure inventions, but in 1953, JBL components were adopted by **Lucasfilm** for their **THX** cinema sound systems.

## JBL Professional: The Team

Today, there are seven dealers covering the sound contracting market in the British Isles (figure

Figure 2.

## JBL/UREI pro-audio dealers and installers

Audio Tek	Eire
Carlboro Sound Services	Midlands
Dial Light & Sound	Yorkshire
Marquee Audio	London & South East
Richmond Electrotech	North West
Rock City	North East
Technique Systems	Scotland
to be appointed:	Northern Ireland

2). For everyday design and consultation purposes, they're backed up by Guy Hawley, Bruno Wayte and Sean Martin, who form the JBL 'Professional user support team' at Harman UK. Their combined experience with JBL components and JBL/UREI electronics is considerable.

Guy Hawley was previously manager of installation and then sales at ENTEC, for seven years. He's recently been joined by a face that's familiar in Rock'n'Roll touring and televising circles: Bruno Wayte, whose career began as *The Sweet's* road manager in 1973 managed the PA hire department at ENTEC, while Sean Martin previously worked for Stephen Court, whose various company line-ups have been incorporating JBL components in speaker systems for over 20 years.

BD: Hasn't Harman UK suffered in the past from the image that the company is simply a wholesaler?

BW: "That's why we want our customers to know that we recognise that we can't be content with shifting boxes."

GH: "This is true of some of Harman UK's other activities, like the distribution of *That's* tapes, *Harman-Kardon* Hi-Fi systems, and *JBL's* domestic speakers. But for the professional market, we're here to see that our customers and specifiers get the specialist assistance they require. For example, if one of our distributors has a customer who needs to fit a cabinet into a space that's too small, we'll come up with customised plans, to produce a cabinet which fits the available space whilst retaining the sonic design."

BD: Before now, JBL speakers have had a reputation for being amongst the most expensive - even considering their high specifications. How has that changed in the past year?

GH: "First, JBL prices haven't risen for a long time, owing to the \$ exchange rate. Second, we've recently introduced a new range of cabinets for all kinds and sizes of pro-reinforcement, the *Sound Power* series, which are built in Europe for European requirements. Most of all, we can make them available at



Guy Hawley.



Sean Martin.



Bruno Wayte.

European prices. The cost is about two thirds of the price of the equivalent made brought-in from the US."

#### JBL enters Europe

BD: How did the *Sound Power* series come about?

GH: "Harman owns *Lydig*. They're a high volume speaker manufacturer in Denmark. They produce 'OEM' cabinets for JBL and other Hi-Fi manufacturers across Europe; the ones you see in living rooms across the world. But they're just as good at turning out a lower volume of higher precision work, the *Sound Power* series. And of course, being accustomed to high volumes, their production techniques are highly cost-efficient. Then thanks to the EEC, we can offset landed duty from the UK price, and also cut out the cost of shipping from California."

BW: "The *Sound Power* series cabs are based on the concert touring series. They were designed in the US by *Stan Miller* of *Stanal Sound*."

GH: "These are easy to rig, sound good, and no corners are cut. For ultimate ruggedness, they're coated in fibreglass. Even without duty and shipping costs, they're expensive because of the standards of rigging employed. For example, every Aeroquip (flying) connector is

X-Rayed to check for flaws. That's necessary because in the USA, there's the risk of virtually unlimited liability if parts of a flying system should ever fall on performers or the public!"

BD: How else does the *Sound Power* series differ from its US counterpart?

GH: "In creating the *Sound Power* series, JBL took the opportunity to find out the special requirements of European users. It was a two-way education - The range was designed with input from the various JBL distributors across Europe. We worked in conjunction with *Per Kolding*, who's the acoustic consultant at *Lydig*. We were all agreed on EP8 connectors, enabling a 4 way system to be plugged together with a single multicore."

BW: "We also saw it was important to be able to offer a complete package PA. So the range includes a range of ready-wired racks containing JBL amplifiers and JBL/UREI crossover, together with all the necessary cables. Installers can now specify all the gear they need with just a single order code."

GH: "We ended up specifying some additional, smaller enclosures for the range. All the cabinets are coated in acid hardened paint, which is nearly as good as fibreglass, but much less costly. Above all, we've not compromised the JBL components featured in the original *Stanal system*."



The JBL Control range consists of the 1, 5, 10 and 12SR.

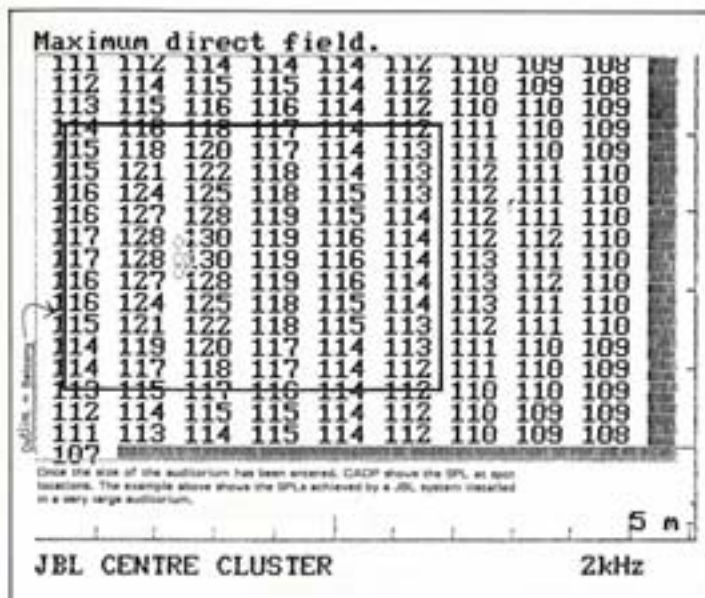


Figure 6.

#### Customising Potential

The team at Harman have the use of JBL's proprietary CAD programmes to assist the users and specifiers of JBL drivers and enclosures. The software tackles custom cabinet configurations and acoustic design. **SIM** is a cabinet simulator. It analyses infinite-baffle, horn-loaded and vented cabinets. It asks you to enter pre-defined factors, like the driver models to be used and cabinet dimensions.

SIM then calculates the unknowns for example, port length, and goes on to plot frequency response, and changes in phase and impedance in frequency. As can be seen from figure 4, the programme also displays some revealing aspects of cabinet design, such as air velocity (in a ported cab) and peak cone excursion. Once you know the optimum values, it shouldn't take much itera-

tion to tune the various parameters and so steer clear of the twin evils: bad value for money and bad sound.

**CADP** (Computer Aided Design Program) is the acoustics software, dealing with optimising the specification and siting of speakers in venues. In common with the Altec, Dynacord (see L+S, Computers for Sound Systems, June '87) and BOSE systems, it presents information on SPL and intelligibility (figures 5, 6 and 7). Having a long experience with JBL installations, the team at Harman wisely prefer to use their computer to check what their intuition says should be installed.

BW: "Using the SIM program, we've recently done quite a few custom wedge designs for rental companies. The CADP has often saved our clients money, when we've used it and found that we can actually produce a better

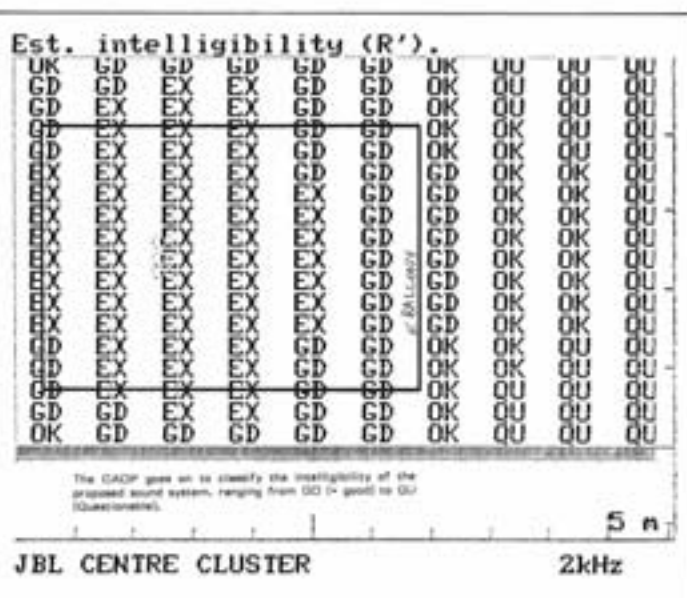


Figure 7.

result with fewer components'.

GH: "Birmingham Repertory Company's PA contractor, Midland Theatre Services, saw the **Sound Power** series at the **PLASA '88** show. After a successful demonstration, a CADP analysis of the auditorium showed a 120° horn should be used, instead of the normal 90°. Then because of space limitations, the intended 4771 enclosure wouldn't fit. The SIM program was used to design a cabinet with all the performance of the 4771, but able to fit in the space set aside, either side of the proscenium arch.

#### The Dance Factor

More than ever before, the JBL/UREI team at Harman UK are active in every area of sound reinforcement. Beginning with recording studios,



Land's End audio-visual display: JBL and UREI components were used to produce the sound to go with wrecked galleons, a 3-D image of Merlin, and a helicopter thundering overhead.

they've recently designed in a 'dance system' in Stock, Aitken and Waterman's 'tracking studio'. Used for adding final overdubs, Waterman wanted the studio to have a disco dancefloor feel, inspired by visiting a JBL-equipped Australian nightclub. That meant installing a pair of 4851, 3-way concert series cabs in conjunction with a pair of 4785 sub woofers, which are ported enclosures operating down to 30Hz. A similar system set-up has recently been commissioned by **Carlsbro Sound Services** in upmarket clubs in Nottingham, Newport and at a major new nightclub in the Greater Manchester area, with the addition of Control 1 and Control 12 mini-monitors for the bars and seating-area fill.

Down at Land's End, Cornwall, Peter de Savary's Land Leisure group sought to capture the drama of Cornish history and folklore with a spectacular Audio-Visual display, built into the rock face. They called on the expertise of Sarnar Audio Visual, who completed this extraordinary project in July 1988. Along with 28 slide projectors, 150 lanterns, smoke and wind machines and moving scenery, Sarnar consulted Harman and chose JBL and UREI components to produce the sound to go with wrecked galleons, a 3-D image of Merlin and a helicopter thundering overhead.

Enclosures include 4670B and 46710K full-range cabinets and 4645 sub-woofers. The helicopter and storm effects are created with JBL 4660 constant coverage horns, the whole set up being driven by JBL 6290 amplifiers in conjunction with UREI 535 graphic equalisers.

Meanwhile, in West End theatre, UREI's well-known co-axial driver (with the blue foam front) has just been specified as part of the system for Andrew Lloyd Webber's *Aspects of Love*. Out in the field with rock 'n' roll PA rentals, virtually every major company operating in the UK uses JBL components somewhere in their system.

GH: "For hire companies, the main factor is that we keep every conceivable spare part in stock in depth and ready for immediate delivery. Even for old models dating back 10 or 20 years! Because Harman has distributors across Europe, if a UK rental company holding an account with us desperately needs spares in deepest Austria, or wherever, we can usually arrange for spares to be received within hours from a local source and without customs complications."

Judging by the table in figure 3, cinema is JBL's prime territory.

GH: "The 'boom' in cinema building and refurbishment began in 1980, before it happened in the US. We supplied and helped to design the system in the first multiplex screen in the UK, in Milton Keynes. We've just supplied a system to **Mosfilm**, the Russian Film Production Company in Moscow. We recently supplied another cinema system to Eastern Europe. It's in 'The Palace of Culture' in Sofia. The system design was carried out without actually visiting the site. On this occasion, we relied on the **CADP** to produce plans, and these worked in practice without a hitch."

#### Technological developments

JBL has a long and enviable history as an innovator of professional speaker components. Although hundreds of companies worldwide describe themselves as loudspeaker manufacturers, true innovation of the kind which leads to principal patents, is limited to a handful of companies. Every day, JBL are in the race to evolve new forms of loudspeaker drive units and enclosures for the future.

Sometimes innovation runs up blind alleys. It also follows cyclic patterns, called 'strange attractors'. Past ideas which were ahead of their time suddenly became meaningful solutions to present-day needs. Good ideas from the past can't be uninvented, but they can be developed with the help of modern tools, materials and fresh insight. JBL's new sub-bass enclosure design is a case in point. The 4788 cabinet contains two 18" drivers in what JBL call a 'Triple chamber bandpass sub-bass system'.

It's a kind of super-ported cabinet, one with direct radiation. The concept was originally patented by a Frenchman called D'Alton in 1934.

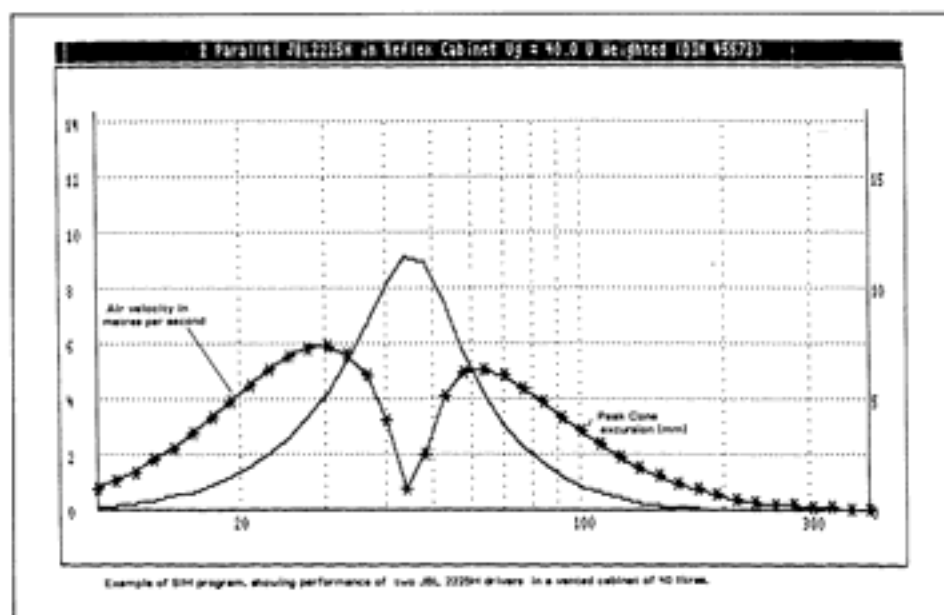


Figure 4

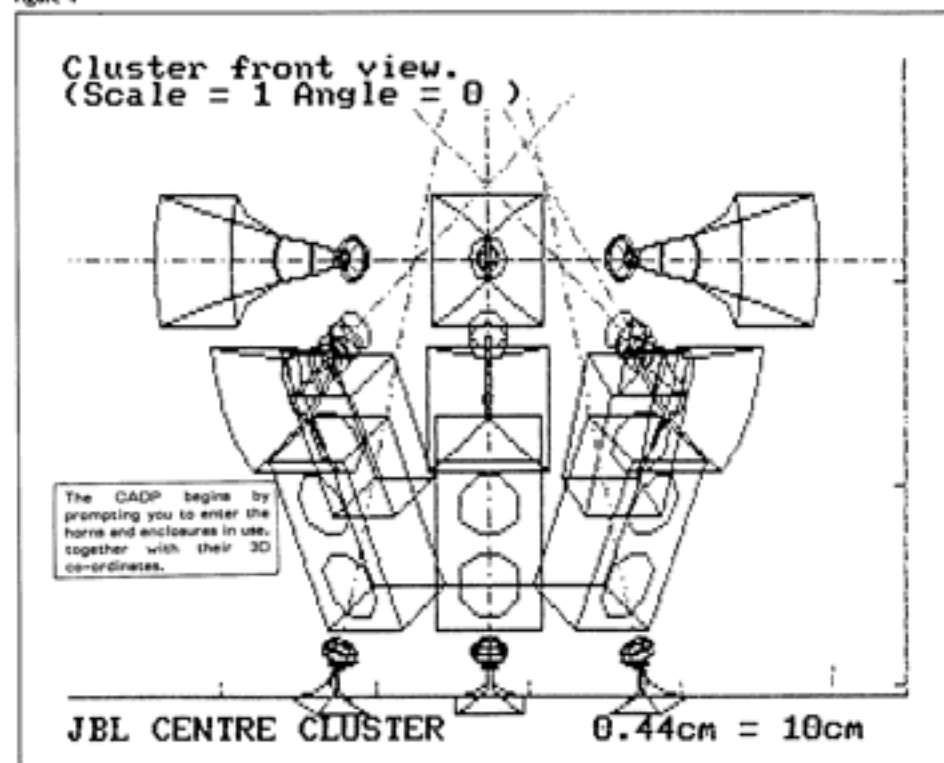


Figure 5.

Even he cited 'prior art', meaning the idea is even older. Since the patents 'ran out' in 1985, similar principals have been spotted at work in EV's MT-4 series, in Bose's **Acoustic Cannon and Tandem Tuned** enclosure and in some domestic systems.

The 1934 patent covered one drive-unit feeding into two ported enclosures. Each is tuned to a different resonant frequency. If the speaker's B.L product (Magnetic flux linkage) is high enough, the ports' contribution is 'stretched' to give a flat response and enhanced efficiency between the ports' twin resonant frequencies. In 1934, speaker magnets producing a suitably high B.L product were leading-edge technology. Even today, sufficient B.L product is limited to heavy duty bass drivers. Few if any 5" drivers have a magnet the size of a medium compression driver, which is what's needed to achieve a flat response.

JBL's 4788 enclosure is a 'triple chamber' meaning it produces a flat response 'stretched' between the resonant frequencies of 3 different ports. It's driven by a pair of 2240H 18" drivers whose combined B.L product is very high.

The JBL Professional Team can be contacted at: Harman UK, Mill Street, Slough, Bucks SL2 5DD. Tel: (0753) 76911.

#### JBL Cinema Installations:

##### National Chains:

Rank  
Cannon (including new Glasgow multiplex, Parkhead Forge, opens this March)

##### First-run screens in Leicester Square:

Warner 2 (THX)  
Empire (THX)  
Odeon Leicester Square  
Odeon West End

##### Multiplex Screens:

National Amusements at Derby, Nottingham and Peterborough  
Warner Bros at Bury - due April '89  
C.I.C. Wycombe 6 at High Wycombe  
'The Point' at Milton Keynes

##### Prestige screens:

National Film Theatre, London  
British Academy of Film & TV Arts, London  
Museum of the Moving Image, London  
Mosfilm, Moscow

Figure 3.

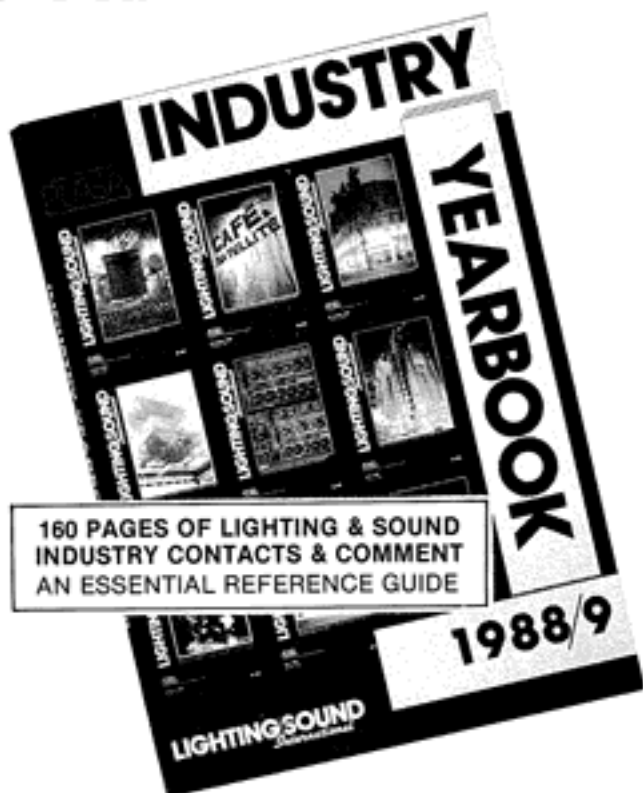
# Playlight

Film and Television Lighting

**The New  
Service  
backed by  
years of  
experience**

Manchester 061-793 5848    London 01-965 8188    Birmingham 021-328 1591

## YOURS FOR FREE!



Launched at the PLASA Show, we now have full stocks of the new PLASA/L+SI Yearbook.

Just send £1.25 to cover the cost of post and packing and we'll send you your copy FREE.

To: Professional Lighting & Sound Association  
7 Highlight House, St. Leonards Road, Eastbourne,  
Sussex BN21 3UH

Please send me a copy of the new PLASA Industry Yearbook. I enclose £1.25 for post and packing.

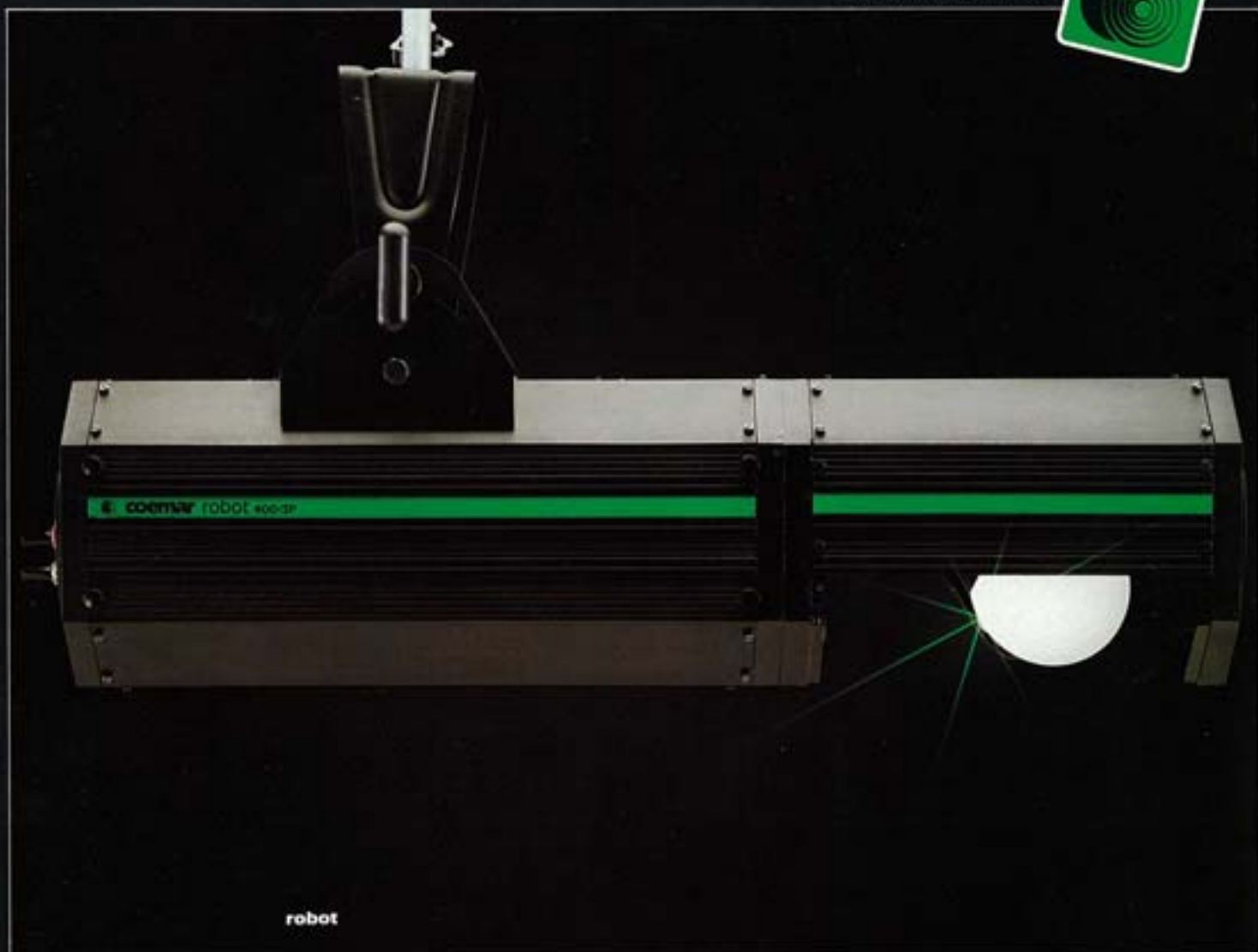
Name \_\_\_\_\_

Address \_\_\_\_\_

ADDITIONAL COPIES £5 EACH

# the coemar-effect.

Coemar creativity sets trends  
in the evolution  
of professional show lighting.  
Today and tomorrow.  
With luminaires  
and lighting effects  
of unrivalled superiority.



**w.b. lighting**  
4 tenter road, moulton park  
northampton nn3 1pz  
phone [0604] 49.93.31  
telex 312320  
telefax [0604] 49.94.46

professional projectors  
for lighting effects

**coemar spa**  
via inghilterra  
46042 castelgoffredo  
(mantova) Italy  
phone [0039.376] 77.93.36  
telex 301590 coemar-I  
fax [0039.376] 78.06.57



**coemar**

# ON TOUR

Carlona Forcer

## Tony Mercer The Four Tops Hammersmith Odeon February 23rd

This month I was invited by Tony Mercer of Total Control to see his lighting for The Four Tops' appearance at the Hammersmith Odeon.

Tony Mercer started his company, Designer Lighting, three-and-a-half years ago, and began by concentrating on small hires and local pop bands. Gradually he became more involved with the sales and installation market and transferred his attention from touring to equipment sales and theatre design. Early last year he made the decision to return to mainstream touring and, together with sound company P.S.E. formed Total Control.

His aim was to establish a total production company that could organise sound, lighting, trucking, hotels, backline equipment and any other necessary components of touring. Total Control's first full production tour was Dr. Hook last year, and since that time, the company has looked after Disney On Ice and Rita Coolidge. They are now starting to take on many American acts such as The Commodores, The Supremes and The Everley Brothers as well as English acts including Bucks Fizz.



Tony Mercer.

The Four Tops' tour consisted of three weeks in Britain, supported by a few dates in Europe, with a return to Britain in November. The original brief was to supply a front and back truss with a 10K sound system which is a basic promoter's rig for a low budget show. Total Control decided that 10K of sound was not appropriate for a venue like Hammersmith Odeon and so utilised 20K of sound, although for the rest of the tour, it was 16K. Tony decided to make the lights as 'nice and pretty' as possible in keeping with the image of The Four Tops, who, as an international cabaret act, require the lighting to be pleasing rather than explosive.

Tony and his partner Billy have also been busy over the last four months designing the interior of a new club due to open this April in Peterborough, as well as preparing the ground for similar projects in the future.

### Equipment List

The Four Tops

Equipment supplied by Total Control

- Celco Series 2 60
- 72 way Avolites dimmer rack
- 140 x Parcans
- 40 x Raylights
- 2 x Molefay units
- 12 x profile spotlights
- 2 x Pani truss follow spots
- 4 x Pani FOH follow spots
- 2 x 40ft truss sections



The Four Tops in concert at Hammersmith Odeon.

# Bryan Ferry

## Lighting Designer: Patrick Woodruff

## Lighting Operator: Abby Rosen

### Wembley Arena January 20th

I met Abby Rosen at Wembley Arena during her involvement with the Bryan Ferry tour. Although she is well known for her stunning lighting designs, she is working as the lighting operator on this particular tour, the lighting having been designed by Patrick Woodruff.

Abby Rosen went to University in America originally to study theatre, but ended up as an arts graduate. Whilst she was studying, she began to look after the lights for bands and she just kept on doing so! Her first break came when she was chosen to design the lights for Talking Heads - which was particularly fortunate for Abby, as Talking Heads, renowned for their eccentricity, were willing to experiment outside 'normal' rock'n'roll lighting. She received a lot of acclaim for her work with Talking Heads and went on to design for The Fine Young Cannibals, Talk Talk, Herbie Hancock (one of her favourites, as it wasn't 'normal' rock), Roger Waters, The Thompson Twins, Black and Adam Ant which, like Bryan Ferry, was originally designed by Patrick Woodruff.

The overall look of the stage for the Bryan Ferry concert is of a temple - a tableau that the band particularly wanted. Bryan is also an arts graduate and certain schools of art, such as German Expressionism, interest him. Some of the ideas using projections came from him. The lighting set-up has changed quite a bit during the tour which has already covered the US, Japan and Australia before its arrival in Britain. Abby likes the fact that Bryan doesn't play the same songs every night as it gives her more scope. In the USA the sizes of the venues varied greatly, so it was necessary to modify the plot from day to day. The lighting is dark and theatrical, rather than typical rock'n'roll, because that is what Bryan Ferry wanted.

I asked Abby if it had been difficult for her to break into the lighting business: "At one time nobody was interested in taking on women. Companies in the UK were more receptive to women than the USA probably because they were already carrying catering girls on the buses! In the USA, lighting companies were worried about hiring girls, because the men on the bus might feel uncomfortable, especially as it's so 'locker-roomish'. It's not such a problem for me now as I've been around for quite a while and people know me."

"I suspect that there are still acts that I will never get to do because I'm female. To start in the business now is probably still as difficult as it was then, especially in the States and there are still very few females in touring. Some bands are particularly good like The Thompson Twins, who intentionally chose to have a certain amount of women on their tour, which was really nice, but unfortunately I think that they are the exception rather than the rule."

After the Bryan Ferry tour, Abby will be designing for the band 'Black', who she has worked with before. There is also work lined up with Jerry Harrison of Talking Heads, who she was on the road with for a couple of months last year. Abby admits that she tends to get the more 'arty' groups and would very much like to work with someone more 'middle-of-the-road' if only on the one occasion. She believes that in such a small industry, people get labelled all too easily. There is no one particular band that Abby really wants to light as she has already worked for the bands that are important to her, and she feels that it would be difficult to 'top' Talking Heads.

"Not having to light one of your favourite bands is almost easier because if they have a strong feeling about something, and it's not shared by you, it's simpler to regard the design as a 'job'. Heavy Metal bands certainly are not my choice, but perhaps I would work with the right sort of band. I don't have a strong interest in those sort of

groups, but I think Jonathan Smeeton does fabulous stuff and I also liked the last INXS show (although I didn't expect to) as it was slick, straight rock."

Abby still keeps up her drawing and painting activities and is keen to learn stained glass techniques. She readily admits to being interested in things that are visual and it certainly shows in her lighting designs.

Next month I will be interviewing another lady lighting designer, Louise Strickland, and I would like to know if there are any others in what appears to be a male-dominated profession. I certainly haven't come across many women in the industry and I would welcome any opinions as to why this is so.

## EQUIPMENT ON TOUR

### B.P.L. Awards

Equipment supplied by Samuelsons

- 1 x 60 way Celco
- 1 x 60 Avo Rolacue
- 2 x 72 way US Avo dimmers
- 156 x long nose P64 Thomas cans
- 72 x long nose P64 Thomas Mag cans
- 12 x Telescans
- 32 x fresnels
- 8 x short throw Lycians
- 2 x long throw Panis
- 4 x 2kW xenons
- 74 x Colourmags

### Effects:

- 2 x cracked oil smoke machines
- 2 x Smoke Processors
- 1 x Rosco smoke machine c/w remote
- 2 x 12" London fans

### Waterboys Tour

Lighting Designer: James Loudon

Equipment: Entec

Celco 60 (converted to SoftOptions 88)

Celco VDS software running on Akhter color PC

Effects rack containing Mercury processor and cue-master patchbay, plus strobe control Avo 72 rack

### Lamps:

- 13 x 6-lamp bars
- 2 x 4-lamp bars
- 2 x 4-lamp Thomas cells
- 4 x ACL bars
- 12 x Leko 6x16
- 1 x Sl 30
- 12 x floorcans
- 2 x CCT Minulette fresnels
- 4 x White Lightning Strobes
- 4 x strobe Lekos
- 2 x Pani spots

### Rigging:

- 4 x Verlinde motors
- 40" Thomas truss
- 36" Slick Minibeam
- 2 x Manfrotto

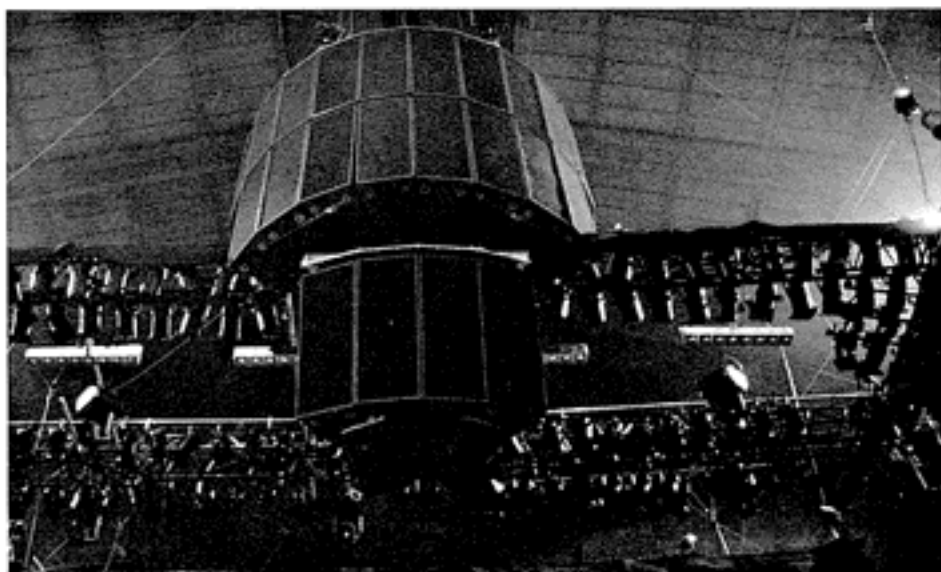
### Bryan Ferry

Equipment supplied by Samuelsons

- 1 x Avolites QM90 desk
- 2 x 72 way US Avo dimmer
- 119 x Long nose black P64 Thomas cans
- 30 x Black mag cans
- 5 x Patt 750 1K beam light
- 6 x Patt 743 1K fresnels
- 8 x 4 cell TTR groundrow
- 23 x 6x12 Lekos
- 2 x short throw Lycians
- 4 x Xenon Supertrouper
- 38 x Colourmags

### Effects:

- 2 x JEM Smoke Machines
- 2 x 12" London fans
- 1 x 18" mirror ball and rotator
- 3 x RDS projectors and FX
- 2 x 2kW fresnels c/w barn doors
- 2 x Bergen xenon slide projector
- 1 x Eagle computer and interface
- 1 x Dove



## Meyer Sound for Rick Astley

The sound system shown above is a centre cluster of 24 Meyer Sound MSL-3's specified by sound engineer Chris Lindop for Rick Astley's recent concert at Wembley Arena (see L+SI On Tour February). Not shown at ground level are a further 20 Meyer 650-R2 subwoofers. The system was supplied by Canegreen and utilises their new HF4 flying system. The whole set up is being used throughout the Rick Astley European tour.

The Canegreen HF4 flying frame is one of the systems designed specifically to make easy work for engineers interested in flying Meyer Sound speaker cabinets as a single point source. There are various flying systems available, but until now nothing that was capable of supporting the sort of system size needed for single point source arena reinforcement at rock and roll sound pressure levels.

Canegreen's HF4 system is simplicity itself. Each basic plate is large enough to accommodate a maximum first row of 4 MSL-3 cabinets in 'tight pack' but with two further options of 3 cabinet arrays as well; perfect for theatre size 3000 capacity left and right flying systems.

The main design feature of the frame, however, is the ability to 'lock together' 2 more plates making a larger grid. For centre cluster purposes, 3 plates can be locked together giving a top row capacity of 12 tight packed MSL-3's and over 200 degrees of horizontal dispersion. By utilizing the 3 way points on cabinets 1, 2, 11 and 12, a dispersion of over 230 degrees can be achieved, according to Canegreen. A fourth plate, supported within the design of the main cluster, carrying another row of 4 MSL-3 in 'tight pack' can be 'helped' back on a motor attached to the main grid for arena floor coverage.



**OSKA**  
VOTED LIGHTING  
CONTROLLER OF THE YEAR

# OSKA

## winning performances

*Zhivago's, Darlington*



*Camden Palace, London*



*Fallows, Liverpool*



*Nowea, Dusseldorf, Germany*



OSKA is the ultimate lighting board.

Speed is the essence of its power – speed in learning, speed in programming and speed in action. Its touch-sensitive colour monitor translates the skill of the operator into instant lighting action. Handling 256 lighting channels including Golden Scans and other intelligent moving lights, it knocks spots off any other lighting controller.

OSKA is used by operators throughout the world who

depend on a powerful control system to make the most of their lightshow.

OSKA has initiated a new era in total lighting control, by integrating a complete lightshow under the control of one skilled operator.

Find out more about what OSKA can do for your performance by contacting your nearest Pulsar distributor.

**PULSAR**  
LIGHTING FOR EFFECT

Pulsar France Sarl,  
10 Avenue du Fresno,  
14760 Bretteville sur Odon, France,  
Tel: 31 741001 Telex 171237

Pulsar Light of Cambridge Ltd.,  
Henley Road, Cambridge CB1 3EA,  
Tel: 0223 66798 Telex 81697 PULSARG  
Fax (0223) 460708

Pulsar GmbH,  
AM Vorort 23,  
D-4630 Bochum 7, West Germany,  
Tel: 0234 28171 Telex 825593



# DIRECTORY

Lighting + Sound  
Equipment Sale/Hire  
Installation and Design

**DO DIMMERS  
LEAVE YOU  
IN**

**THE DARK?**

If the answer's yes call:



3 Dawson Road, Mount Farm,  
Milton Keynes, MK1 1LH

Tel: (0908) 644366

**Southwest Lighting**

**Sound & Lighting  
to the Trade**

Agents for:

Citronic, Coemar,  
SIS, Optikinetics,  
JEM, Scott, Avitec  
and many more

Send large SAE for current  
Trade Catalogue

The Old Smithy, Church Road  
Cockwood, Exeter, Devon  
Tel: (0626) 890806  
Showroom open Mon-Sat 10-5

# DHA

- Library and Custom made Gobos and Slides.
- Screen Printing onto various Materials.
- Standard and Custom Fibre-Optic Effects and Equipment.

For further information contact:

DHA Lighting Ltd.  
3 Jonathan Street, London SE11 5NH  
Tel: 01-582 3600 Fax: 01-582 4779  
Telex: 935639 GOROCO G

**FIBRE OPTIC  
Lighting**

We are specialist manufacturers & suppliers of all fibre optic lighting materials - Glass & Polymer fibre harnesses - light sources - colour changers - edge light interfaces - theatre curtain washers - spot, ball & bullet lenses - optic conduit - Par Startube & Star Rod - ceiling fittings.

Our Chiswick showroom has examples of our products, also mirrors, stencils and displays from subtle backgrounds to fibre optic fireworks. Leaflets available. (visitors by appointment)

Trade & Export call **PAUL RAYMOND**  
Par Opti Projects Ltd.  
Unit 9 The Bell and East,  
Cunnington St,  
Chiswick Park  
London W4 5EP  
Tel: 01-895 5179



**ARRI  
IMAGE  
IMAGINE**

The world's best lighting controls  
and the most reliable.

**DONMAR**



Donmar Ltd 22 Shorts Gardens, Covent Garden  
London WC2H 9AU Telephone 01 836 1801 Fax 01 240 0961

**Dial Sound & Lighting**

Wholesale Distribution for

**CITRONIC BOSE RAMSA  
SOUNDSHOP zero 88  
OPTIKINETICS  
ROSCO COEMAR PULSAR  
POWER DRIVE TECHNICS JBL Le Maitre  
MODE ELECTRONICS**

and other leading brand names

Specialist supplier of Mini Light Tube

INSTALLATION DIVISION — SHIPLEY DIAL LTD.

DIAL SOUND AND LIGHTING  
Unit 4G Wharfedale Road, Euroway Industrial Estate,  
Bradford BD4 6SG.  
Telephone: (0274) 651600 Fax: (0274) 651190

# TSL

**Theatre Sound & Lighting  
(Services) Ltd**

U.K. DISTRIBUTORS  
FOR

**Clear-Com**  
Intercom Systems

67 DRURY LANE,  
LONDON WC2B 5SP  
Phone 01-836 7877/8

**LIGHTING  
HIRE  
SALES  
SPECIAL FX**

STAGE CONTROL LTD.

STATION PARADE,  
WHITCHURCH LANE,  
EDGWARE, MIDDX. HA8 6RW

TEL: 01 952 8982  
TELEX: 924896



**FUTURIST  
LIGHT & SOUND**

HIRE  
0924  
455586

SALES  
Strand Lighting

SERVICE  
0924  
468183

HOYLE HEAD MILLS,  
NEW STREET  
EARLSHEATON, DEWSBURY  
WEST YORKSHIRE. WF12 8JU

# NORTHERN LIGHTS

**Sound & Lighting**

**Distributors**

Trade representation for

**OPTIKINETICS  
POWERDRIVE  
ANYTRONICS  
LE MAITRE  
TEXTLITE  
ZERO 88  
PULSAR  
CLOUD  
SHURE  
SATEL  
MODE  
EDC  
ICE**

89 Scotforth Road, Lancaster.  
Tel: 0524 62634.



Professional lighting  
suppliers for Entertainment,  
Leisure and the Arts

Jeff Demain, Sales Manager  
tel: (0204) 391343

**SPOT ON  
FOR QUALITY**



Sound, Lighting and Special  
Effects for leisure, promotion,  
entertainment and the arts.

- First class technical back-up.
  - In-depth stocking at the best prices.
  - Speedy mail order and export service.
  - Field sales and installations.
  - OPEN MON-FRI 9.30-5.30. SAT 9.30-4
- Brochure on request.

**LUTON SOUND & LIGHTING**  
75 & 86-88 Wellington Street,  
Luton, LU1 5AA, England.  
Telephone: 0582 411733  
Telex: 825353/825562 CHACOM G LITECO  
Fax: 0582 391102

## Strand Lighting

- Stage & TV Lighting
- Lighting Control Equipment
- Effects Projectors
- Colour Filters
- Dealers throughout the UK

Grant Way (off Syon Lane),  
Isleworth, Middlesex TW7 5QD

**01 560 3171**



### Hire • Sales • Service

- ★ Lighting
- ★ Sound
- ★ Curtains
- ★ Track
- ★ Cables
- ★ Connectors
- ★ Make-Up
- ★ Scenics
- ★ Books
- ★ Pyrotechnics

Theatre • Disco • Display • Architectural

Hightown Industrial Estate,  
Crow Arch Lane, Ringwood,  
Hampshire BH24 1ND

Sales 0425 470888 Hire 0425 470088

## LHS

Leslie Hire & Sale

For  
**Stage and TV Lighting  
and Stage Equipment,**  
phone

**01 871 5132**

LHS Limited, The Business Village, Broomhill Road,  
Wandsworth, London SW18 4JG  
Tel: 01 871 5132

## DHA

- Library and Custom made Gobos and Slides.
- Screen Printing onto various Materials.
- Standard and Custom Fibre-Optic Effects and Equipment.

For further information contact:  
DHA Lighting Ltd.  
3 Jonathan Street, London SE11 5NH  
Tel: 01-582 3600 Fax: 01-582 4779  
Telex: 935639 G0B0CO G



## SPOT ON THEATRE SERVICES

- Supply & Hire of Stage Lighting Equipment & Effects
  - Design & Consultancy Work Undertaken
  - Complete Mechanical & Electrical Installations (NICEIC)
- Make-Up, Curtains, Rostra Supplied
- ILKLEY (0943) 602979  
ILKLEY (0943) 830574  
KEIGHLEY (0535) 606255  
21A LEEDS RD, ILKLEY LS29 8DP

## S.A.V.

SOUND + LIGHTING  
DISTRIBUTORS

### SALES & HIRE

Optikinetics  
Powerdrive  
Le Maitre  
Zero 88  
Pulsar  
Bose  
AKG  
CCT  
Tannoy  
Coemar

System Freestyle  
etc.

STARDREAM AUDIO VISUAL  
Party House, Mowbray Drive,  
Blackpool, Lancs.  
Telephone: (0253) 302602  
Telex: 67426 PARTY G



Manufacture, Supply  
and Installation  
of Lighting and Sound  
for Clubs and Discotheques

FULL DESIGN SERVICE  
Trade/Export Enquiries Welcomed

Starlight Design (Light and Sound) Ltd  
9 Alms Hill, Bourn, Cambs CB3 7SH  
Telephone: 09544 8841/2/3  
Fax: 09544 8846  
Telex: 827547 CG BUS G Attn Starlight

## L Lancelyn Lighting

### Lighting Hire & Sales

Equipment from all  
major manufacturers  
Hire of Outdoor Equipment  
including Staging and Seating  
Special Effects, including  
smoke machines, snow machines,  
projection, pyrotechnics, etc.

HIRE: Oxford (0865) 722522  
SALES: Oxford (0865) 511522  
Hire and Sales Northwest:  
051-334 8991

## CHARLES FISHER

STAGING LIMITED  
EXHIBITION and CONFERENCE  
DESIGN and CONSTRUCTION

Specialists in Something  
Different

Show House Farm, Kirkby Road, Ripon, North Yorkshire HG4 3JU.  
Tel: 0765 701604 Fax: 0765 701389

## black light

Scotland's lighting company  
THE OLD CUSTOMS HOUSE 1857 HARBOUR ROAD  
DUNFRENZ EDINBURGH EH1 1PA

01 351 2337  
24 HOUR 7 DAY  
01 229 1436  
RADIO LINK 402

### HIRES AND SALES

DEALER FOR

- CCT
- ARJI
- ROSCO
- ZERO 88
- COEMAR
- LE MAITRE
- DURAPLUG
- POWERDRIVE

black light



### LIGHTING

HIRE  
DESIGN  
ENGINEERS

London 01-891 4755

## eurolight

Lighting Controls  
Stage Management Systems  
Patching Systems  
Paging and Relay Systems  
Full Installation Service

Eurolight Ltd.  
Unit 8, Maple Industrial Estate  
Maple Way,  
Feltham TW13 7AW  
England  
Telephone: 01-751 6400  
Telex: 888941 LCCI LITESYM

FOR ALL  
YOUR  
CONTROL  
REQUIREMENTS

UPDATE



- ★ Sound and lighting equipment hire
- ★ Le Maitre special effects stockist
- ★ Installation service and one night stands available
- ★ Special promotions
- ★ Competitive rates and efficient service

Call us for colour  
brochure and price lists

STAGE TWO LTD  
197 Watford Road, Croxley Green,  
Herts WD3 3EH  
Watford (0923) 30789

## THE THEATRE LIGHTING SHOP

Lee Colortran International has opened a specialist  
theatre equipment shop at Nottingham.

From this single source you can get:

- ★ theatre luminaires
- ★ dimming and control
- ★ filters by the roll or sheet
- ★ replacement lamps
- ★ complete theatre refurbishments, including drapes
- ★ professional consultancy and technical advice

Consumables also available from our other shops in  
Manchester (061 788 0174) and London (01 968 7000)  
Everything that's needed. From Village Hall to West End.  
Without drama.

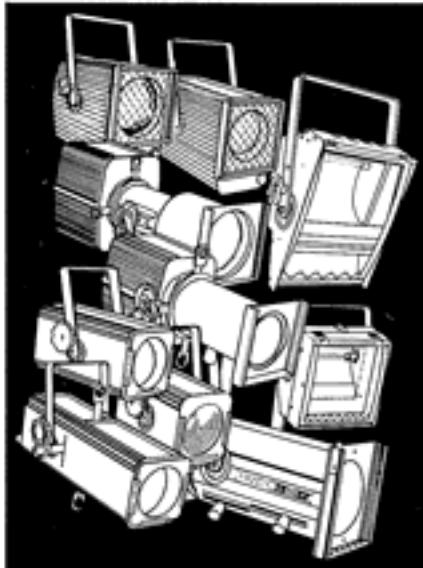
### LEE Colortran International

Unit 43, Nottingham South and Wilford Industrial Estate,  
Ruddington Lane, Nottingham NG11 7EP

**Tel: 0602 455520**

# STAGE LIGHTING SALE HIRE

- 500W FLOODS
- 1000W FLOODS
- VARIABLE BEAM PROFILE SPOTS
- FRESNEL SPOTS
- PEBBLE CONVEX SPOTS
- DIMMING AND CONTROL
- COLOUR CHANGE
- EFFECTS
- RIGGING EQUIPMENT



Export Sales - Trade Shows

Mon-Fri 9.30 am - 5.30 pm.

**CCT theatre lighting limited**

WINDSOR HOUSE, 26 WILLOW LANE, MITCHAM, SURREY, CR4 4NA TEL: 01 649 3366 TELEX: 846648

**ELTEC**  
Manufacturers of  
Drama Lighting Control Systems  
Etec Drama Lighting, Unit 3, Cain Valley Industrial Estate  
Llanuymor, Powys SY12 3DD Tel: (0304 154) 8301

## MUSHROOM LIGHTING

The professional people.

Specialists in supplying all your sound and lighting requirements.

For Hire or Sales  
phone 0604 494866  
or 494991



## MICO LIGHTING

The specialist for  
LAMPS used in the  
THEATRE and  
ENTERTAINMENT  
industries.

U.K. Distributor for  
Philips/Westinghouse,  
U.S.A

Excellent Trade terms  
available.

Mico Lighting Ltd.  
Troydale Lane, Pudsey,  
Leeds, West Yorkshire.

Telephone: (0532) 567113  
Telex: 556469 (MICO G)

**MAC**  
manchester  
Professional sound  
hire nationwide

- High quality communications systems
- Sales and service facilities

Telephone 061-969 8311  
1 & 2 Attenburys Park,  
Park Road, Altrincham,  
Cheshire, WA14 5QE.



W.B. Group  
cover the complete  
lighting spectrum  
from film to T.V.,  
theatre to disco  
special & motorised  
effects

Only the best is good  
enough

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

**TRAFALGAR  
LIGHTING LTD.**  
01-360 0936  
LIGHTING  
SALES-HIRE  
SECONDHAND KIT  
BOUGHT & SOLD  
01-360 0936

**FARRAHS**  
LONDON - LOS ANGELES  
SOUND EQUIPMENT  
SALES • HIRE  
INSTALLATION  
FARRAH SOUND LIMITED  
TELEPHONE: 01-549 1787  
FAX: 01-549 6204  
TELEX: 945114 FARRAH G  
*the sound professionals*

**WENBLEY  
LOUDSPEAKER  
COMPANY  
LIMITED**  
**deuce**  
Professional Loudspeaker  
Repair  
Specialists for all Makes  
of Power Units  
also  
Manufacturers of 'Deuce'  
Mini & Maxi Cube  
'B Line'  
(the ultimate professional  
18" Bass 500 Watt Loudspeaker)  
Sound Systems custom designed and  
manufactured for all sizes of venue.  
Mobile Systems from 100 Watts to 20k  
75 Jeddoo Road,  
London W12 9ED  
Tel: 01-743 4567  
Telex: 941 3506 A0AS G

**NIGHT FLIGHT**  
Sound and Lighting  
**THE BIG ONE IN  
SCOTLAND**  
Installation, Design,  
Hire, Repair and Service  
0389-79261

**Fantasia**  
SPECIAL EFFECTS LIGHTING

- ★ Specialising in the hire of large motorised special lighting effects by SATEL etc.
- ★ Follow Spots by Spotlight - ParCans by Thomas
- ★ Mail Order available on most popular products.
- ★ Large Trilite rig for hire.

Hire Catalogue available  
★ Pyrotechnics - various  
manufacturer's

**Fantasia S.P.F.X. Lighting**  
12a-12b West Street,  
Steeple Claydon, Buckinghamshire.  
Tel: 029-673-8255  
Tel: 029-673 8327  
Tel: 0860-376471 (24 hr emergency)

**Northern Light**  
Lighting & Sound Equipment Hire & Supply  
Technical Equipment for the Leisure & Entertainment Industry  
Sale • Installation • Hire  
Stockists for Strand, Hall Stage, Roscolab, DHA,  
Tecpro, Allen & Heath, Bose, Tannoy, Toa, AKG,  
Le Maitre, Stick Systems Trussing.  
Manufacturers of Socket Boxes, Working Light and Specialised control systems  
Edinburgh 031-553 2383 Glasgow 041-440 1771  
(Fax 031-553 3296) (Fax 041-445 4406)

**Specialist Technical Equipment and Services  
for the Entertainment and Allied Industries**

# You'll be floored by ours!

The ultimate stage  
flooring.  
Eight colours.  
Reversible.  
A 'Forever' high gloss  
seal available.  
Sold in lengths of  
40m or less.

**Gerriets**

Unit 18  
Tower Workshops  
Riley Road, London SE1 3DG  
Tel: 01-232 2262  
Fax: 01-237 4916



## Leamington Sight & Sound

Design, Supply & Installation  
of Sound, Lighting  
and Special Effects  
Incorporating

**UKD** United Kingdom Distribution  
Wholesale supply to the trade,  
utilising our unique location  
for nationwide delivery using  
our own vehicles.

Units 16/17 Rigby Close  
Heathcote Industrial Estate  
Leamington Spa CV34 6TJ  
Tel: 0926 833617  
Fax: 0926 883120



## Hall Stage Products

Limited

offer a complete range of  
**Stage and Scenery Hardware**  
Rigging Gear, Pulleys & Curtain Tracks  
for the discerning designer

For the latest literature write or  
telephone:

Chris Hitchens

**HALL STAGE PRODUCTS**

The Gate Studios, Station Road,  
Borehamwood, Herts WD6 1DQ.

Telex: 8955602 PERLUX-G

Telephone: 01-953 9371/2.

### TRIPLE E LTD

FROM CURTAIN UP TO PRODUCT REVEAL

#### UNI - TRACK

IS THE SOLUTION

We sell and hire the most sophisticated and  
comprehensive track system available on the  
market. Even the most complicated system  
tailored to meet your requirements, whether  
manual or motorised may be hired

**WE ARE THE TRACK  
SPECIALISTS**



01-237 6354

### LIGHTING HIRE & SALES

#### Philip L. Edwards (Theatre Lighting)

5 Highwood Close, Glossop,  
Derbyshire SK13 9PH.  
Telephone: 04574 62811.



### SPECIALISTS IN HI-TECH PROMOTIONS

5 Courtlands, Church Hill,  
Newhaven, East Sussex BN9 9LU  
Telephone: (0273) 512149  
Mobile: (0636) 252885  
Fax: (0273) 514968

For the creative use of 'Lasers' in the  
A.V. Industry, Music Industry and  
Theatrical Industry call us first.  
You'll be glad you did!

## get on the right tack!

Printed Tapes + Labels.  
Anti-Slip Flooring.  
Electrical + Double Sided Tapes.  
T.V. 'Studio Vinyl' Flooring.  
Genuine American 'Gaffer' Tape  
and much, much, more

Call us for Brochure and Price List

**Mac self-adhesives Ltd.**

Unit 24, Stephenson Way, St Ives,  
Cambridgeshire PE17 4WJ  
tel: huntingdon (0480) 494540



### LIGHTING

HIRE  
DESIGN  
ENGINEERS

London 01-891 4755

## THE TOTAL PACKAGE

- Design, supply and installation of lighting, sound, communication, stage equipment, rigging, AV, conference and projection systems.
- For theatres, studios, halls, clubs and commercial presentation.
- Full in-house electrical contracting service.
- UK and Worldwide.



**GLANTRE  
ENGINEERING LTD.**  
2 Cremyll Road, Reading, Berks.  
0734-509711

## WHITE LIGHT

57 Filmer Road · London SW6

Tel: 01-731 3291

Telex: 295811

FAX: 01-371 0806

## THEATRE LIGHTING HIRE AND SALES

Our prices are competitive  
please ring for price list or quote

NORTHERN BRANCH  
SAW HILL FARM · TRIANGLE · NR. HALIFAX  
WEST YORKSHIRE  
TEL: HALIFAX (0422) 822016

For annual advertising rates  
in the DIRECTORY section of

**LIGHTING SOUND**  
*International*

telephone

**(0323) 642639**

# VIEWPOINT

## Looking Back up the Chunnel

Andy Collier

"brr brrrrr, brr brrrrr"

I feel almost homesick when I phone the UK and hear the familiar ringing tone.

click, click, bang, thump . . . "TREE, GOOD MORNING"

"Er, um, er hello," I stammer. Being the thirteenth time I've attempted the call, I'm suddenly taken by surprise by an answer. I hesitate, then mumble, "is that the 'British Lighting Indus-TRY?'"

Of course it was. Was I stupid, deaf or worse still, foreign? I sense suspicion in the answer "Ye . . . es, it is. Can we help you?" My call had been answered with the name of the company, probably said with feeling and with a vitality and enunciation that, alas, escaped me as the international telephone exchanges clattered their way to complete the connection in time for me to miss the start of the conversation.

As a part-time foreigner calling my homeland, I'm at a disadvantage from the start. To the person receiving the call, the news that I'm calling from Italy explains my stupidity. "Well, they don't understand English, you know . . ." But we 'foreigners' understand the vagaries of international communications only too well and how it affects business in Europe. Of all the definitions of 'intelligence', my favourite is: **understanding how somebody else understands you.** Nowhere is this idea more pertinent than when marketing products in Europe. It affects all of us in every aspect of our business, starting with answering the telephone.

It is nearly two years since I deserted my comfortable, index-linked, pensionable, private health-covered job in the UK for the unknown of northern Italy. In these two years, the dust has settled sufficiently for me to assess the European market from within and the UK market from without. For those who subscribed to Lord Young's business club last year, and received his '1992 Colouring Book' packed with maps, jokes and puzzles, I hope to give some practical advice on communicating.

Those of you with first-hand experience of selling and working in the EEC may agree with my initial impression of 'foreigners': they were 'laid back, casual, not really businesslike'. I was wrong. Although it is a rarity to see a suit and tie, even in a bank or government office, it is a fundamental error to consider the business casual. The Italians, French and Germans have maintained a subtlety of language that the British threw out years ago when 'thee, thou and thine' were swamped by the all-embracing 'you and yours'.

There is no denying that to an Englishman, the inability to communicate in English is a sure sign of mental deficiency. The English are one of the few peoples in the world who subconsciously analyse speech, and thereby categorise the speaker by education or social standing. In many parts of Europe, the way you speak, apart from defining your place of origin, serves to indicate the respect you have for the listener. Even if you are not fluent in a language (we can't all have Freddy

Lloyd's talents), do try to say something; you will always get a warm greeting in Italy just by saying "Buon giorno, come stà? Never try to joke. I can report that the English sense of humour is unique. Your satirical quip will inevitably be met with a blank expression, or worse still, a glass of grappa.

In business in Europe, the formality of the language replaces the statement of the British three-piece suit; a change for which I am duly thankful after years of crawling around backstage in suit and tie feeling as though I should be on stage. One hope I have when the Chunnel finally opens is that some of the European sense of style will percolate through it. We English have an unfortunate reputation for dress sense, food sense and behaviour which, to European eyes, makes it seem as though the whole country is peopled by drunken football supporters eating greasy chips out of a newspaper. There is no doubt that the per capita intake of alcohol is higher in France and Italy than in the UK, but the difference is that the British take their alcohol neat and quickly. It is very rare to see a drunk in Italy; they pace their intake and usually only imbibe with a meal. I know of several European businessmen who make good use of the 'British weakness' during negotiations!

It isn't only verbal communication which is important though. Orders are won and lost on fast negotiations and split-second decisions. The days of relaxed, considered market research and product selection by our customers have gone; the demand for instant returns on large production investments has seen to that. It would be very interesting (and I suspect, rather discouraging for some) to analyse the reasons as to why a particular product is chosen. I would bet a bottle of Bardolino that they crystallize into: 'Is it the cheapest?' followed by 'Is it in stock?', with 'Is it better than the others?' trailing a poor third. Perhaps I am becoming a little cynical, but it seems that so much effort goes into having an extra blue button, or a uniquely shaped shutter blade when time and again, the customer doesn't understand the gadget's subtlety, or he can't be bothered as long as it's the best deal, and it's rigged and working by Thursday next week.

I don't intend to preach marketing techniques to those more qualified than me, but I will point out some hard facts. We have been established in Italy for nearly two years, and now have distributors in every major market in the world. We offer a complete product range of theatre luminaires. Our name is being seen regularly in the international trade press and it's gradually appearing on the preferred suppliers' lists of public tenders. 'We' are three people. True, there are a couple of hundred others beavering away designing, producing and selling, but the core of the company is three people . . . and FIVE computers.

We have built an international distribution network which has its foundations in Communication with a capital C. Market trends, databases of prices, manufacturing schedules, telex transmission, product drawings, specifications in four languages, price lists in 24 editions, instruction leaflets. Every part of every product is available to

the end-user as a spare, should a piece become damaged. It's all held electronically, and manipulated from a single office through the computer networks. We have immediate availability of information and the ability to update and improve published information within minutes. With computer databases, and fax communications with distributors, a chink can be found in the frustrating 'closed-loop system' of availability, price and customer requirement.

Even if your business is blessed with the latest 32 bit desk-top miracle, you will still be confronted with the one-bit-at-a-time mail system. Don't expect too much from the post. In 1988, letter post between London and Italy took typically three to four weeks. In 1819, it took a mere two weeks for Shelley's letter, offering a recuperative holiday in Pisa, to travel from Italy to John Keats in Hampstead. We received a charming letter recently from a lady in New York inviting us to attend LDI 88 in November last year, and thank you all for the Christmas cards which are still arriving! So remember that your letter, or confirmation order, or quotation to some parts of Europe may take longer than you think - and that delay can cost you a lot more than express postage.

I offer up a prayer of thanks each day for the fax machine. I frequently recollect the comment of a college mate whose first job was with a facsimile machine development company. After a hasty sketch on the back of his beermat, he told me he was leaving for a more secure job because 'it'll never catch on'. However much we rely on fax, fax will always rely on my pet hate - telephone networks. In the early days, the chance of a misdirected fax was limited: even if the wrong number was connected, it would be your machine that would have the benefit of a sleepy Tasmanian sheep farmer's travel advice at 3am his time. But now, with fax machines everywhere, there is every chance that the sheep farmer will wake to find your quotation on the bedroom floor.

So, if you are planning to put a toe into Europe in 1992, consider for a moment how we Europeans are tackling the UK market. Would you buy from an unknown company that answers the phone with a disembodied suffix, always replies to your urgent faxes by letter post and only publishes information in Italian or Spanish? We 'foreigners' know how you understand us!



Andy Collier was born into a family whose life revolved around the amateur stage. Small wonder then, that the first 'hands-on' theatrical experience, carrying stage weights labelled 'SEICOL', was gained at the age of 10. The next 11 years were spent in the quest for the source of the stage weight, and took him through the repertoire of Rogers and Hammerstein, professional pantomime and rock lighting to, eventually, Rank Strand. After 13 years with Strand, from test engineer to, finally, product manager of controls and dimmers, he departed the UK in 1987 for the sunnier climate of Italy with Mike Lowe at Teatro. Arguably, one of his most important products since joining the Teatro team is his son, Benjamin, who was born in Italy last May.

## Index to Advertisers

AC Lighting Ltd	43	Doughty Engineering Ltd	61	Ludwig Pani	43	Pulsar Ltd	65
ADB	53	Expo Musica, Madrid	18	M & M Lighting	2	RK Lighting	27
Allen & Heath	71	Fantastic Fireworks	7	Marquee Audio Ltd	39	Scott Sound Systems	16
Ark Light	42	Furse Theatre Products	22	Meteorites Productions Ltd	51	Siel (Paris)	56
Avitec Electronics Ltd	3	General Electric	36/37	Midnight Design	39	Strand Lighting Ltd	12/13
Celco Ltd	4	Hardware House	42	Mushroom Lighting Services Ltd	50	Theatre Sound & Lighting	30
Citronic Ltd	10	Harrison Information Technology	14	Optikinetics Ltd	2	The Great American Market	33
Clay Paky srl	15/16/17	Jands Electronics Pty	44	Oxtron Digital Systems	55	The Sound Department	9
Coemar	62	Laserpoint Ltd	72	Par Opti Projects Ltd	30	TIS Lighting	61
Direct Lighting	7	Le Maitre Lighting & Effects	14/24	Powerdrive (Cerebrum Lighting)	42	Unusual Rigging Ltd	61
		LSC Electronics Pty	8	Playlight Film and TV Lighting	61	WB Lighting	6
				Presentation Consultants Ltd	11	Wigwam Acoustics Ltd	16

# SR PLUS

*for Sound Reinforcement!*



■ *The SR plus Series from Allan & Heath – a range of five Mixing Consoles designed for live sound presentation for Theatres, Churches, Leisure Centres, Concert Halls and Product Launches. For touring and fixed installations SR plus offers quality construction by a famous maker at a budget price.*

*The Allen & Heath Live Sound range also offers Sceptre Rack Mount mixers, SRC modular consoles and our top of the line system – Saber PA.*

**Allen & Heath –  
Building on Success.**

**UK**

69 Ship Street  
Brighton BN1 1AE  
Tel: 0273 23346  
Fax: 0273 821767  
Telex: 878235 MBIAHB G

**USA**

5 Connair Road  
Orange  
Connecticut 06477  
Tel: (203) 795 3594  
Fax: (203) 795 6814

**ALLEN  
&  
HEATH**

# SHAPE UP AND

# Dance

# WITH

## PIXELITE – THE VERSATILE VIDEO WALL

The Pixelite Videowall is one of the most sophisticated and versatile videowall systems available today. State-of-the-art software drives the video imagery through the very latest framestore technology, powering virtually any configuration of monitors up to a maximum of 400.

Reliability and creativity are guaranteed as the Pixelite system is totally designed and manufactured by Laserpoint in Cambridge.

For a stunning demonstration of the latest developments contact Laserpoint on 0223 212331.



Easy-to-use software operates the Pixelite Videowall System

LASERPOINT

**Laserpoint Ltd**  
44/45 Clifton Road Cambridge CB1 4FD  
Telephone: 0223 212331 Fax: 0223 214085  
Telex: 817281 Laserp g