

LIGHTING+SOUND *International*



JANET JACKSON IN CONCERT

- Finland: Tampere Hall/Eastway/MS-Audiotron
- L+SI Exclusive on Theatre in Hungary
- Full report and pictures from LDI Orlando
- Hull's Studio Circus
- Ben Duncan on 'Reproduced Sound'
- Janet Jackson — and more — On Tour

DECEMBER 1990

WE'LL PROVIDE THE LEAD

Whether it's Othello or Heavy Metal, Arena has the cables and terminations in stock to help you create an unforgettable performance.

We are the specialist supplier for professionals working with Light, Sound, Vision and Special Effects, used in Theatres, TV and Video Studios, Sound Stations, Concert Halls and Live Promotions.

Wherever... whenever... our comprehensive, professional service is ready to fulfil your exact requirements to your specific timetable.

FOR ACTION ARENA telephone free on (0800) 525162.

UNIT 77 RIVERSIDE 3
SIR THOMAS LONGLEY ROAD
MEDWAY CITY ESTATE
STROOD KENT ME2 4BH

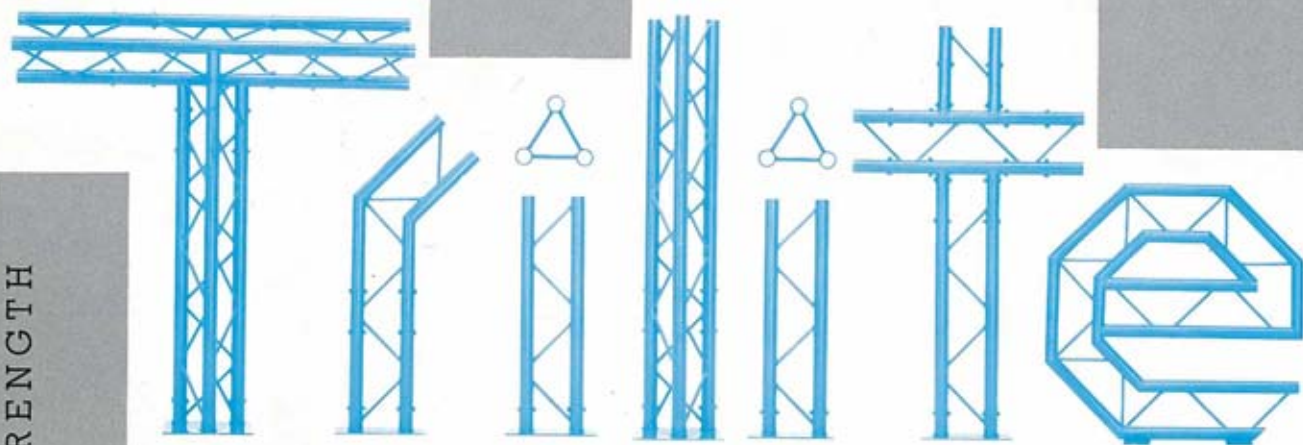
PHONE FREE on 0800 525162
FACSIMILE 0634 724924

Arena

T H E A T R E L I G H T A N D S O U N D



A DISPLAY OF STRENGTH



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

Full customer design service available.

For further details contact:

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

USA

ELEKTRALITE
200 Sea Lane
Farmingdale NY 11735
Tel (516) 249 3662
Fax (516) 420 1863

CONVERT A PAR CAN INTO A PROJECTOR

Why use a gobo when you can project a full colour transparency?

Image Pro fits the colour filter position of a standard fixture and converts into a projector for colour slides, logos, patterns and other images.

To find out more about the

IMAGE PRO



contact European Distributor:
Optikinetics Ltd, 38 Cromwell Rd,
Luton LU31 1DN ENGLAND
Tel: 0582 411413
Fax: 0582 400613

Image Pro available from:

Belgium
Radio Violette
Tel: 02 4283100
Fax: 02 4282165

Finland
Light & Sound Technology
Tel: 0912 12189
Fax: 0912 12089

France
Radio Violette
Tel: 27449877
Fax: 27318683

Germany
Light Effects
Tel: 0234 294436
Fax: 0234 285525

Holland
Jac Van Ham
Tel: 013 638585
Fax: 013 638435

Italy
Etabeta Electronics
Tel: 031 773539
Fax: 031 773798

Switzerland
Electric Claudio Merlo
Tel: 091 932561/2
Fax: 091 933809

U.K.
Optikinetics
Tel: 0582 411413
Fax: 0582 400613



while others have been trying to impress you with past achievements we've been designing the next generation of control consoles

celco introduce the

PANORAMA range

designed to synchronise and automate the control of moving lights, colour changers and generic lighting in one console.



and, whilst others have been making their dimmer systems bigger we've been shrinking ours.

celco introduce the

COMPACT RANGE

of high density, 100% duty cycle, modular dimmer systems.

celco. enough said.

Celco products are manufactured and distributed by:
Celco Ltd, 1/3 Bellingham Road, London SE6 2PN,
England tel: 081-698 1027 fax: 927624 (CELCO G) fax:
081-461 2017 and Celco Inc, 200 Sea Lane,
Farmingdale, New York 11735, USA tel: (516) 249
3662 fax: (516) 420 1863.



LIGHTING+SOUND *International*

December 1990

7 News in Lighting + Sound
International

17 Tampere Hall



John Offord attends the international
inaugural concert

21 Matti and the Multimix

John Offord talked to Matti Sarapaltio of
MS-Audiotron

24 Eastway Show Services

John Offord visits Finland's front runners

27 Theatre in Hungary



by Mihály Vargha
A special L+SI feature compiled
by John Offord

35 An Avitec Offering with Rice
on the side

Tony Gottelier

38 Orlando's Touring Theme Show

Lighting Dimensions International goes to
the capital of the theme park industry.
Tony Gottelier sets the scene. John
Offord compiles the news

49 Equipment News

53 On Tour

Catriona Forcer talks to lighting designers
John Featherstone, Jane Spiers and
Jerry Reinhardt

60 Discotec - Dusseldorf

David Neale reports from Germany

61 Reproduced Sound

Ben Duncan reports on the sixth
'Reproduced Sound' conference,
organised by the Institute of Acoustics
(IOA) in association with SCIF, APRS,
AES and ABTT

64 PLASA News

65 International Directory

67 PLASA Members

69 Directory of Suppliers and
Services

74 Viewpoint

Jackie Staines on the future of
job training

LIGHTING+SOUND *International*

published monthly by the Professional Lighting and Sound Association

© Copyright Professional Lighting and Sound Association ISSN 0268-7429

Editor: John Offord

Assistant: Ruth Rossington

Advertising: Alison Hunt

Published from the PLASA Office:

7 Highlight House, St. Leonards Road, Eastbourne, Sussex BN21 3UH England

Telephone: (0323) 642639 Fax: (0323) 646905

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

The magazine is available on annual subscription:

UK: £30.00; Europe and rest of the world £45.00; Airmail £60.00. Single copy price £2.00 plus postage.

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

Regular Contributors: Ben Duncan, Catriona Forcer, Tim Frost, Tony Gottelier, Mike Lethby, Graham Walne, Julian Williams.

LIGHT & SOUND SHOW 1991

Olympia 2

8-11 September 1991

Britain's premiere
International trade show.

If you are involved with
equipment used in discotheques,
clubs, theatres, leisure complexes,
symphonic halls or presentation
arenas then you can't afford to
miss the **Light & Sound Show**.

No admission under 16.

Organised by **3D Services**
12 Brentford Business Centre
Commerce Road, Brentford
Middlesex TW8 8LG
Tel 081-569 9742
Fax 081-569 9783

SPONSORED BY

PLASA

Action News

FROM LIGHTING TECHNOLOGY

A LIGHTING DESIGNER 'PHONES...



...CHRIS CLARK OF LIGHTING TECHNOLOGY.



We are pleased to have assisted in the creation of this year's Oxford Street Christmas Lights – see page 13

For many years Lighting Technology has been involved at the fore, providing every aspect of lighting for Spectacular Theatrical Productions to the illumination of major public buildings.

Our design team creates special schemes, individually tailored to the needs of the client, catering for every requirement from initial design concepts through the installation and post warranty maintenance.

Call us now to discuss the needs for your next show stopping effect!

Lighting Technology Group Limited

Action Lighting

2 Tudor Estate Abbey Road Park Royal
London NW10 7UY
phone 081-965 6800 fax 081-965 0970

LIGHTING SOUND *International News*

PanCommand appoint Jem European Distributor

Jem Theatrical Supplies have announced that they have been appointed as the exclusive European distributor for PanCommand of California. Final agreement on the deal was reached at Lighting Dimensions International at Orlando in November.

Jem will be responsible for pan-European sales of the PanCommand range consisting of the ColorFader, Color Ranger, CycFader, ParFlector and ColorCue.

In addition, their top of the line intelligent lighting fixtures, the PC Spot, PC Beam and PC Soft, previously only available for hire through Morpheus in the United States, will be available for sale through Jem Theatrical Supplies. Further PanCommand products are under development for introduction in 1991.

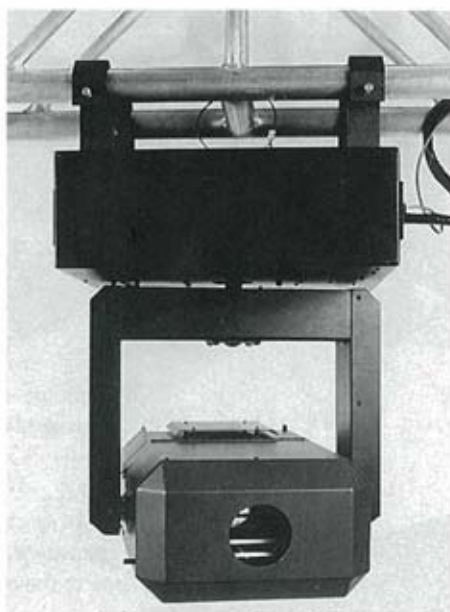
Latest product from Pan Command on show at Orlando was their new XL Ranger, a scrolling colour changer for larger lighting fixtures. This fully digital fixture utilises the same accurate, reliable digital technology used in the ColorRanger, say Pan Command.



PanCommand's Jim Gordon (left) and JEM's Nigel Morris at LDI.



Summa Technologies' stand at LDI, Orlando and close up on their automated luminaire.



Celco for Summa

UK-based Celco Ltd and Summa Technologies Inc have announced a joint co-operative venture to distribute the SummaHTI automated luminaire throughout the United Kingdom and Europe. The agreement was reached in November at the Lighting Dimensions International 1990 Trade show in Orlando.

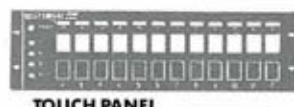
Summa Technologies President Stephan Harper told L+SI: "The SummaHTI is the world's first full function automated luminaire designed exclusively for the USITT DMX512 protocol. Since Celco was already manufacturing their Panorama range of consoles for the integration of conventional lighting and automated instruments it was only natural that Summa team up with Celco.

Keith Dale, Celco's marketing director commented that "we have recognised the requirements for an automated luminaire of this calibre for a long time. After extensive research, we found that the SummaHTI complemented our Panorama range of consoles perfectly. We shall be offering them throughout continental Europe either as a complete package with our dedicated consoles, or as individual units."

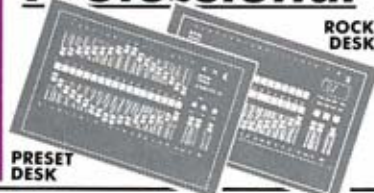
Technical excellence
— rugged reliability
from ...

MULTIFORM LIGHTING

Discotheque



Professional



ROCK DESK



Multiform Lighting
Bell Lane, Uckfield
East Sussex TN22 1QL
Tel (0825) 763348
Fax (0825) 763310
Telex 877173



Full information on our products

Name _____ Address _____

Storage Disco Lighting

Why Cerebrum Lighting are The First Choice for the stage and effects lighting buyer

Cerebrum Lighting are the recognised choice for the discerning trade buyer, with everything you need, from a single gel up to the most complex desks, all available under one roof, sourced from a truly comprehensive range of the most innovative manufacturers around.

OUR PRODUCTS

We are the *exclusive* worldwide distributors for **ADVANCED LIGHTING SYSTEMS** (Manufacturers of the *ENIGMA* and *ENIGMA Micro*), **LIGHT & SOUND DESIGN** (Manufacturers of lanterns trussing, motor control systems and the *COLOURMAG* gel scroller range) and **POWERDRIVE** (Manufacturers of equipment stands, towers and fittings). For these three companies we are authorised to appoint exclusive regional distributors throughout the world.

We also exclusively represent **AMPTOWN** (Manufacturers of the *POSISPOT* moving light system), **MA LIGHTING TECHNOLOGY** (Manufacturers of professional lighting control consoles), and **SUNN** (Manufacturers of *MIDI* lighting systems) in both the U.K. and certain overseas markets. We are authorised to appoint exclusive regional distributors within certain countries.

In addition, Cerebrum Lighting distribute products from the following manufacturers, worldwide to bonafide trade clients, on a freemarket basis:

ANYTRONICS • ASTRALLOY • C.C.T.
CELCO • CLAY PAKY
D.H.A. LIGHTING

ELECTRONIC MUSIC STUDIOS
ICELECTRICS

JANDS • JEM SMOKE MACHINE CO.
JEM PYROTECHNICS AND SPECIAL EFFECTS
LEE FILTERS • LE-MAITRE LIGHTING AND EFFECTS
LEMI MUSIC TECHNOLOGY • LIGHT PROCESSOR
MODE ELECTRONICS • MULTIFORM LIGHTING
OPTIKINETICS • PULSAR LIGHT OF CAMBRIDGE
STRAND LIGHTING • JAMES THOMAS ENGINEERING
VERLINDE • WHITE LIGHT • ZERO 88 LIGHTING

CREDIT CARD PAYMENTS ACCEPTED ON TRADE ORDERS

We are now able to offer trade and professional clients the convenience of paying by **ACCESS** or **BARCLAYCARD** (or associated credit cards), whether calling in person, or ordering by telephone.

NEW DEMONSTRATION STUDIO

At our new premises we have installed a comprehensively equipped demonstration studio packed with the latest lighting control technology, looking out onto a motorised lighting rig, flown from the warehouse roof. Why not use our facilities to sell to your clients? We are happy to arrange demonstrations and training sessions by appointment.

FULL WORLDWIDE EXPORT SERVICE

We specialise in export sales to trade clients and professional organisations around the globe. Our export personnel are able to source competitive freight companies, advise you on methods of payment, and arrange all the necessary paperwork.

Our warehouse staff are specialists in packing orders fast and in the most economic way to minimise freight costs.



CEREBRUM



LIGHTING



JUST ONE STOP FOR EVERYTHING YOU NEED

Hundreds of satisfied clients around the world have proved that it makes sense to centralise purchasing with Cerebrum Lighting.

We keep our sales counter at New Malden open every weekday from 8.30 a.m. until 6.30 p.m. to trade, professional and retail clients and there is plenty of free parking space right outside the door.

So the next time you're in the market for *anything* in stage and effects lighting, make your first call to Cerebrum Lighting and let us demonstrate why we should be your first choice.

Worldwide dealer distribution - Cerebrum Lighting Ltd.

*Units 4 & 5,
Shannon Commercial Centre
Beverley Way, New Malden
Surrey KT3 4PT England.
Tel. 081-949 3171
Fax. 081-949 3649*

Taking Centre Stage

Stage Electrics is one of the largest suppliers of theatrical equipment in the UK. To herald their move to new and larger premises in Bristol, the company recently held a series of open days to demonstrate the range of products and services on offer.

The new premises, just yards from their old ones, set new standards in retail/service provision. The building has been purpose-built to Stage Electrics' own design and features a presentation room where small conferences can be rehearsed, a comprehensive stock of all consumables for the theatre, fully equipped drawing and design rooms, boardroom suites and bedroom and shower areas. All the facilities have been designed to offer a more complete service to the customer.

Represented at the open days, held in November, were several companies with their own personnel on hand to answer queries, and a number of trade stands. Demonstrations of lighting and pyrotechnic effects took place, along with practical workshops on the use of gauze and filters.

The Lamp Company

The recently formed Lamp Company specialises in the distribution of all types of light bulbs for use in a wide range of applications across the entertainment industry. Started in June of this year, it would like to develop a dealer network for quality lamp supplies both in the UK and abroad. The company, run by Guy Merchant and Colin Holmes, intend to research into energy saving devices and developing new markets for tungsten halogen lamps and display lighting. For further details contact them in Surrey on (0932) 231010.

Brand Portfolio

The Wharfedale Group has bought the business and assets of Linx Audio UK from the receiver, completing the Group's portfolio of brands which now spans a well-planned range of quality audio and hi-fi products.

Wharfedale had already acquired the rights to all of Linx's designs and encompassing its full range of hi-fi products - characterised by their combination of quality sound with good design. The production of the range will now be integrated into the Wharfedale premises at St. Ives, where the Cambridge electronics brand is also produced. R&D, admin and sales are being transferred to Wharfedale Group Headquarters in Leeds.

The NJD Challenge Shield



The 1990 NJD challenge was recently played at Salford's Albert Park stadium. Teams playing in this year's league included Luton Sound & Light, Jem Smoke Machine Company, Pulsar Lighting, Leamington Sound & Light, Mode Electronics, NJD Electronics and host team Leech Manufacturing.

NJD and Mode battled through to the final, and despite a brave effort by NJD, Mode won the game. Leech succeeded in beating Luton in their third place play off. The presentation (pictured above) was made to the victorious Mode team by NJD's managing director Kevin Hopcroft.

RDE Production Services

RDE started in the 'rock 'n' roll industry providing the lighting and touring rigs for the tours that travelled around the country. Recent years have been witness to a period of growth, and headed by Richard Dale, a former lighting designer, the company has now come of age.

The company's portfolio is wide-ranging and includes the provision of sound, lighting, AV, and laser equipment, together with set building and various design services. In the last few years it has handled fashion shows, company product launches and corporate presentations amongst other things. Last year RDE were involved in the Tower Bridge Funday and more recently they designed the Oxford Street Christmas lights, which follow the theme of the 12 days of Christmas.



To heighten their public image, RDE recently held an open evening to remind the industry and related press of the company's activities. The evening started with a champagne reception aboard a boat leaving from Charing Cross Pier and heading down river to Greenwich. After an informal reception at their Lassell Street premises, the night was rounded off with a coach ride back to central London where guests were transferred to an open top bus to view the Oxford Street lights.

New Distributors

Carlsbro Electronics has appointed More Music in Belgium as its new Benelux distributor of the Carlsbro range of bass, lead and keyboard combos, loudspeaker enclosures, monitors, amps, consoles and full range PA systems. Australian company Freedman Electronics has also joined Carlsbro's roster of international distributors. They too will handle the complete range.

Donmar in Tottenham

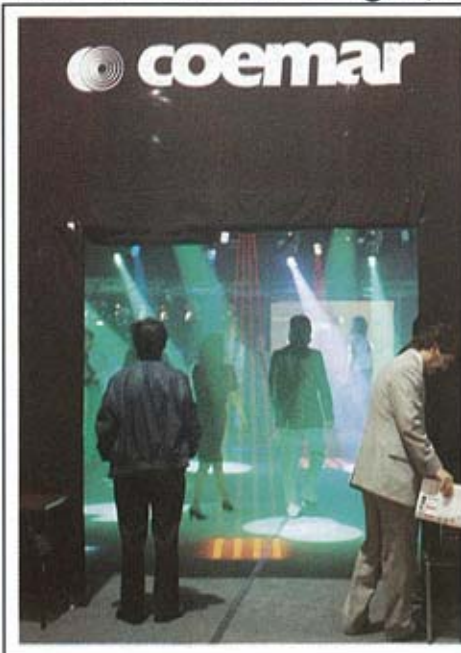
Donmar of London have just been awarded a £26,000 contract for the supply of stage and lighting equipment for the complete fitting out of the new Tottenham Green Centre.

The contract is for Haringey Council whose plans are to make this multimillion pound leisure centre a focus for the community. Currently Donmar are installing stage facilities including 95 metres of Hallstage T60 track together with the drapes. Also to be installed is a 90 sq m stage comprising 30 Steeldeck portable rostra units.

Tokyo Nights

Juliana's has announced its latest discotheque operation, scheduled to open in Tokyo on May 1st, 1991. With an investment of nearly £4,000,000 and sound, light and video equipment to a value of over £1,000,000, this new club, to be known as Juliana's Tokyo will be one of the most vibrant and exciting new discotheques in Japan.

It will be managed by Juliana's which was acquired earlier this year by Leisure Resources Group Ltd and the operation in Tokyo represents the first of a chain of international clubs to be developed under Juliana's name.



Coemar get Stand Award

Coemar's stand at LDI in Orlando last month was placed joint first with the TomCat USA Inc. stand (see Awards list) in the first annual LDI Awards. The huge circular truss was literally smothered with equipment. Highlights on show were the Multi-Tunnel, the Mirage and Atomic. Pictured below (left to right) are Patrick Henry of Futero Cercano, Coemar's US distributors, Coemar boss Bruno Dedoro and Ivano Burato, export sales manager.



Protocol Protocol

L+SI's camera shows who's watching who . . .



Andy Meldrum of Vari-Lite (right) on the Avolites stand with Steve Warren and the QM TD console.



David Bertenshaw of Strand Lighting (right) drops in on Celco and Keith Dale (left) and Matt Deakin.



Coloram from Wybron

Wybron's Coloram will join their now-famous Scroller in January when the first production run comes off the line. Prototype units were at LDI, and Wybron's Bob Gordon reckoned its direct drive system offers many opportunities for better operation. Wybron boss Keny Whitright told L+SI that demand for their products is at such a level that they have had to totally reorganise their production. Pictured above (left) the stand had numerous sizes and samples of Scrollers in working mode. In picture (right) Keny Whitright holds the metalwork of the prototype for ColorMax, circa 1980 and the first of the scrolling colour changers. Coloram is the latest.

US: 010 1 719 548 9774 UK: 0494 446000

First LDI Awards

One of the highlights of LDI 90 in Orlando was the presentation of the first annual LDI Awards for outstanding achievement in the entertainment technology industry. The winners were:

- **Product of the Year/Lighting Source:** Coherent Laser Group for the Innova 70 Purelight Ion Laser System, the first mixed gas laser specifically designed for the entertainment industry. The PureLight emits red, green and blue light from one tube and simplifies the production of full-colour laser displays.
- **Product of the Year/Lighting Control:** Kliegl Brothers Universal Electric Stage Lighting Company and inventors Rufus Warren and John Gorman for the K2000 VVO dimmer, the first non-SCR-based solid-state dimmer to be brought to market. The use of high-power MOSFET technology makes possible a dimmer which uses no choke, is short-circuit proof and has automatic current limiting.
- **Designer of the Year/Sound:** Jonathan Deans. Since his move to the United States from London, Jonathan Deans has designed sound for productions ranging from Equity-waiver shows to *Les Miz* and operas with Peter Sellars, and from the Siegfried and Roy extravaganza in Las Vegas to Universal Studios Hollywood.
- **Designer of the Year/Lighting:** Daniel Flannery. From his award-winning lighting for the television sitcom *Roseanne* to lighting the "Kongfrontation" and "E.T." attractions at Universal Studios Florida, Dan Flannery has exhibited a masterful use of both architectural and theatrical lighting in diverse applications.
- **Widget of the Year:** Starlift manufactured and distributed by Hoffend and Sons, designed by David Paine of Stardrive Design and Development. The Starlift is a self-erecting tower that cleverly unreefs from a portable base as support for lights, trusses and grids.
- **Light Show of the Year:** Paul Dodd, designer from Avitec UK, for his outstanding interpretation and the way he brought the product to life in the Elektralite/Celco booth.
- **Best Booth Design at LDI90:** TomCat, TMB, Skjoberg Controls Booth for creativity, clarity and directness of presentation for their colourful, computer-controlled butterfly; and Coemar/Orion Trading Corp. for their booth design and drew people into a special environment to effectively showcase their products.
- **A Lifetime in Light** — Tharon Musser. A special "Lifetime in Light" Award was presented to Tharon Musser, a distinguished 3-time Tony-Award-winning lighting designer with over 100 Broadway shows to her credit.

PLASA at Orlando



Anytronic's Bob and Raphael Hall on stand with PLASA chairman Kevin Hopcroft (right).



CCT's Don Hindle (right) demos with 'Manufactured in America' equipment.



Zero 88's managing director Peter Brooks (left) with Zero 88 Inc's David Ashcroft.



The Wembley team of Paul Mansfield, Vivian Boyle and boss Paul MacCallum.

CONTROL BEYOND IMAGINATION



Imagine a lighting controller that will run Golden Scans, Par Cans, Strobes, Pinspots, tubelights, theatre lanterns, display spots, downlighters, floods, multi-mirror lamps, neon, etc., etc., and produce every effect you could ask for.

Now imagine a controller capable of doing all this simultaneously, but with every effect in its own individually programmed and timed sequence. Guess how much it would cost? Well, the answer is a lot less than you might think - less, in fact, than virtually any memory control board on the market.

Masterpiece is in a class of its own, the second generation of integrated lighting controllers. It is designed not only to get the best from intelligent lighting, but also to replace a collection of controllers that might previously have been needed for the job. We have tried to include every feature needed in modern light control.

MASTERPIECE

• 108 CHANNEL MEMORY LIGHTING DESK

- add Masterpieces, switched to slave mode, to expand 108 channels at a time, without theoretical limit.

• DESIGNED FOR:

Theatres, Bands, Discotheques, Intelligent Spotlight and Environmental control.

• CONCEPT:

A synthesis of Pulsar's Touch Panel, Control Desk, Rock Desk and Modulator technology - plus a little more! 70 Touch Pads, 25 Sliders, 108 LEDs, 4 Digit Display and Joy Stick.

• STRUCTURE:

108 Channels, 216 Scenes of the 108 channel levels with fade in and out times, 54 Scene Chases, 48 Environments of Scenes and Scene Chases, 6 Environment Chases.

• FOR THEATRICAL USE:

Fully automatic crossfades or manual crossfades using the A and B masters. Fade In and Fade Out time sliders to create/override the values stored with each scene. Add in any amount of the other 216 scenes at any time. Individual control of the 108 channels always available. Grand Master, Black Out.

• INPUTS:

Audio for Sound to Light and Chases, RS232 and MIDI for total remote control of ANY feature.

• OUTPUTS:

Channels 1-36 available as 0-10v analogue, channels 1-108 transmitted in both RS232 and DMX formats.

• SPEED:

The ultimate in both programming and operation thanks to its conceptual simplicity and having one touch pad for every requirement.

• MEMORY:

Internal memory non volatile. RAM card for backup, changing shows and transfer between Masterpieces.

• SOUND TO LIGHT:

Pulsar Modulator's Sound to Light circuits built in, 3 zones of 4 channels, each patchable at any level over the 108 channels.

• SECURITY:

Using his security code, the 'Programmer' may deny access by the 'Operator' to any touch pad or slider.

• OTHERS:

18 Keyboards of 18 pads, Latch/Flash/Swap/Solo keyboard modes, Sound to Light monitor, Joy stick with position/velocity, Change security code, Freeze output, Master/Slave desk, Chase section: Manual step fwd/rev, Speed, Slope, Bass/treble bus, One-shot/repeat, Use scene fade times, copy chase...

... THE
SPECIFICATION
SAYS IT ALL

FOR FULL SPECIFICATIONS CONTACT

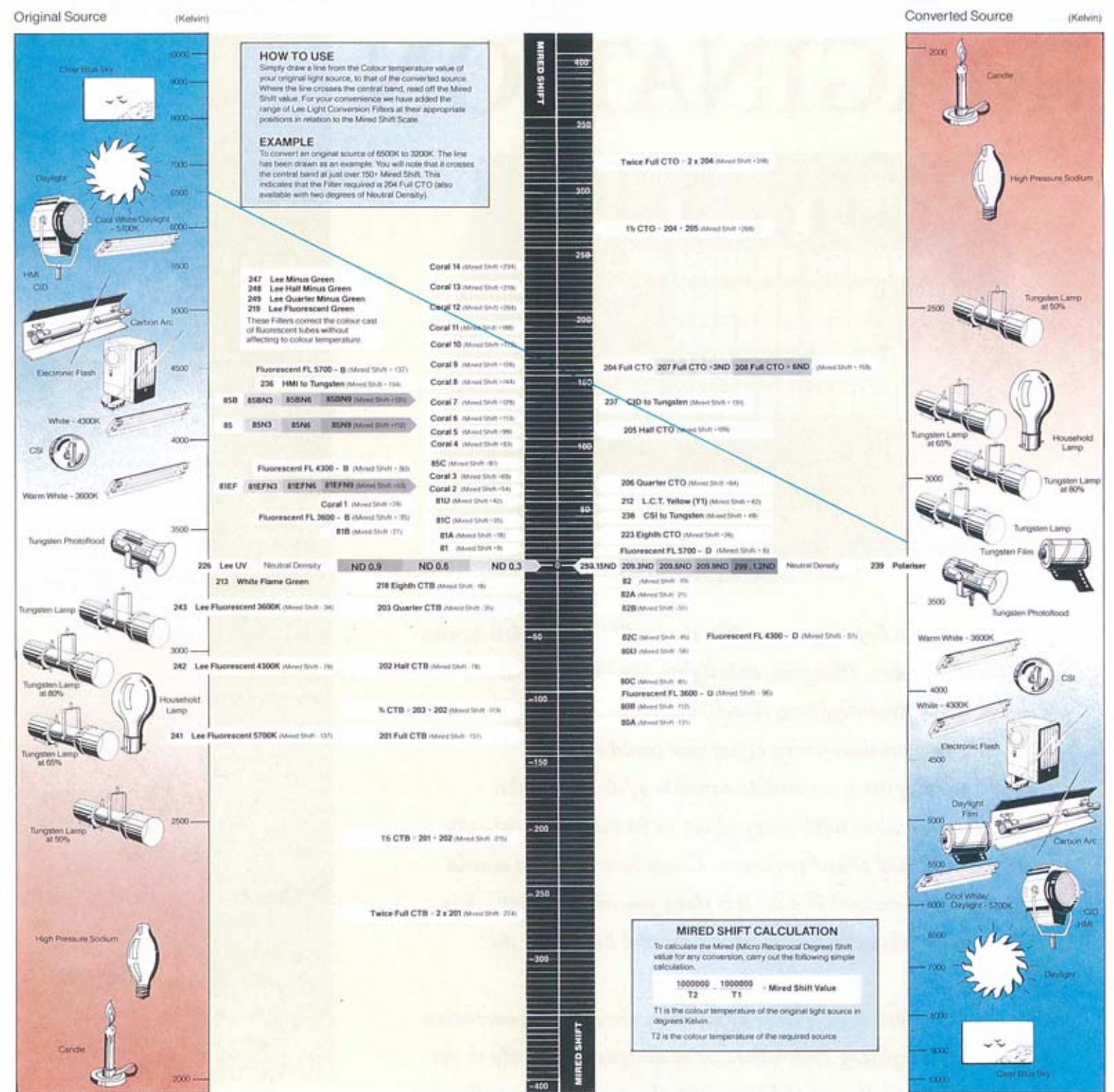
PULSAR
LIGHTING FOR EFFECT

Pulsar Light of Cambridge Ltd.,
Hensley Road, Cambridge CB1 3EA,
Tel: 0223 66798 Fax: 0223 460708

Pulsar France Sash,
10 Avenue du Fresno,
14700 Bretreville sur Odon, France,
Tel: 31 741001 Telex 171237

Pulsar GmbH,
AM Vorort 25,
D-4630 Bochum 7, West Germany,
Tel: 0234 28171 Telex 825593

Light Source Conversion Calculator



The Art of Light

revealed

Lee Filters Limited does much more than manufacture high quality light control media for the film, television, theatre and stills photographic markets. The company offers - whenever it can - to make an additional input to benefit the industries it serves.

That's why it has developed a series of technical posters - available free of charge - to help filter users make the most of its products. To understand more fully how the art of light works. To create better images.

The first poster in the series - shown on the opposite page - has been designed to provide a simple and instantaneous reference for the calculation of filter requirements when converting from one light source to another.

Each type of conversion filter is listed in its appropriate place on the scale together with neutral density, UV and polarising filters.

To get your free poster (size 33" x 23 1/2") simply clip the coupon, and send it to:

**Lee Filters Limited,
Central Way,
Walworth Industrial Estate,
Andover, Hampshire SP10 5AN,
England.**

This is what you've come to expect from Lee Filters. The art of light. And more.

Hitting the High Spots

This year the Oxford Street illuminations have been produced by using a very special combination of traditional and modern lighting techniques. Lighting Technology working from the initial design concept supplied by Richard Dale of RDE supplied the equipment for the three different aspects of the design (see story page 9).

The centrepiece of the scheme is a series of high level illuminated sign frames depicting the 12 days of Christmas. The light sources for these frames number some 18,000 single 28v 1W aircraft instrument lamps, each one individually hard-wired to flexible twin cable. In contrast the building facades along Oxford Street have been transformed by imaginative floodlighting with alternate green and blue light. This was achieved using specially developed metal halide lamps positioned on the lamp posts along the central reservation in the middle of the street.

Centred around Oxford Circus is the crowning glory of the display. Six individually pre-programmed motorised xenon searchlights are positioned on the rooftops. Their razor like beams slice through the night sky in true 20th Century Fox style.

Starlight Express

Starlight Design has just recorded its best months trading ever with a substantial increase in sales on the Starlight range of lighting products. The increase is due in part to a new UK main distributor network that is being set up and also to the substantial leap in export orders to Europe, the Middle and Far East.

Starlight Design's overseas distributors include an importer in Spain, a country which traditionally exports lighting effects. Of particular interest to buyers at the moment is the Cross, Harvesters, Rainbow Gold, Dichro-flower and Light Curtains.

As well as the nine new overseas customers already to have placed orders since the Light & Sound Show in September negotiations are also taking place with companies in several other countries.

Iraq Update

The Iraqi authorities last month issued an exit visa to Glantre's contract director, Gareth Davies, who returned to the UK on December 1st. His release was granted largely in recognition of the good relationship that Glantre has always enjoyed with its Iraqi customers and particularly with the Ministry of Industry.

Six other British staff members of Glantre remain in Iraq - Andy Quin, Alex Lockley, Martin Fitzsimmons, Andy Coulman-Wood, Patrick Read and Bob Roberts - along with 11 of the company's Indian employees. It is hoped that these will be able to depart before too long.

Glantre's Iraqi branch manager, Tony Konaris who is a Cypriot and 23 Indian personnel have all been granted exit visas.

Going Independent

After 30 years designing and developing luminaires and studio equipment for Mole Richardson, Berkeley Colortran, Strand Lighting and Lee Colortran, Joe Thornley is now working as an independent designer of lighting and associated equipment for theatre, TV and film studios. He can be reached on (0842) 752033.

Australian Venture

Samuelson Concert Productions Pty Ltd has been purchased back by the management and its original owners - Jands. The company which was part of the UK-based Samuelson Group, is now a wholly Australian-owned company and will trade as Jands Production Services Pty Ltd.

Incorporating Vari-Lite Australia Pty Ltd, its operations will remain at the current address of Kent Road, Mascot, Sydney, Australia.

As Australia's largest production organisation, Jands Production Services and Vari-Lite Australia will continue to provide a high standard of sound, lighting and automated lighting equipment including design and production services to the concert, theatre, trade show and convention industry.

Light and Sound Expo

The Australian Pro Light and Sound Expo 91 has attracted an international range of manufacturers either exhibiting in their own right, or through their Australasian representatives. With many other manufacturers and agencies interested, the 5,000 sq m of the You Yangs and Carryong Exhibition halls at the newly opened World Congress centre in Melbourne will be full to capacity.

Several international guest speakers will deliver seminars and keynote speeches including Francis Reid. Sponsorship and discounted rates for delegates have been agreed with Australian Airlines and Avis.

User groups holding meetings in conjunction with the Expo include the Confederation of Australasian Art Centres technical managers, New Zealand Association of Theatre Technicians and NARCARP technical managers. For further information contact Paul Chappell in Australia on (61) 8 296 4189.

Direct Approach to Lasers

Maurice Perry, formerly of Laser Creations, and Mike Yarranton, formerly of the London Laser Company, have pooled their resources and experience to form Direct Lasers Ltd. Based in Tolworth, Surrey, it is geared to supply and serve all the laser needs of the advertising, marketing, conference, product launch, exhibition and discotheque industries.

The company will supply a complete range of lasers and scanning equipment for various applications. Full technical support will be given by a trained team fully conversant with the design and creativity aspects of laser productions to the highest standards. For further details contact Direct Lasers on 081-399 1754.

Amber Lighting

Paul Stewart the man behind the image and promotion of Abstract Design to Light has now left the company due to what he refers to as 'internal differences'.

Stewart, a founder member of the company told L+S that he was not happy with the direction Abstract was moving and decided that it was time to leave. He has now started a new company manufacturing products at the lower end of the market and making prototypes and special units for installation companies and exclusive items for retail outlets. He can be contacted in Leicester on (0533) 825520.

Lighting Dimensions International: Massed Start



Early on a damp Florida morning during LDI 90 in Orlando, Pat MacKay of LDI gets set to lead off a massed start for the Golf Competition.

Please send my free copy of the Lee Filters Light Source Conversion Calculator poster.

Name _____

Job Title _____

Address _____



Elektralite UK/US line-up: (left to right) Keith Dale (Celco), Mike Wood (JEM), Norman Wright (Klark-Teknik), Jon Petts (JEM), Paul Dodd (Avitec), Chrissy Reichenbach (Celco Elektralite), Neil Rice (Optikinetics), Vinny Finnegan (Elektralite), Graham Norman (Rossula), Jack Kelly (Elektralite).

Elektralite Go For Superdisco

European Super disco stands were the inspiration behind the Elektralite/Celco presentation at LDI. Half of the 2,500 sq.ft. space was allocated to participating manufacturer's displays, and the other half encompassing a 24ft high product demonstration/lightshow area. The whole construction was from Trilite.

Companies represented were Optikinetics with Trilite, strobes, Strobeflowers, Quasars and Solar 250s; JEM had a complete range of fog and Heavy Fog machines plus a display of their new pyrotechnic systems; Avitec had their British manufactured Light Mover; Lynx had Synchropins, Tubes and their 100SX high power spot; Light Processor displayed their new Q12 desk and LP434 touch sensors, and these, together with a range of their power packs were used to operate the lightshows.

There's more. Sapro from France had their new Syncotron 800, Epsoms and Lightbeam

250s; Celco, with their own selection of the stand had a range of their latest desks including the new Panorama board.

The stand design and light shows were down to Paul Dodd of Avitec, and for his trouble he won an award, for Light Show of the Year.



Award winner Paul Dodd of Avitec explains how it's done.

Around and About at LDI



Bill Groener and Tom Sullivan of Strand Lighting.



Ron Bourque of Global Future Technologies with David Keene of Lightwave Research.



Freddy Lloyd of Zero 88 with Wybron's Bob Gordon.



Norman Wright of Klark-Teknik with the Celco Panorama 60.



Wally Russell gets Vari-Lite talk from Brian Croft.



Andrea Tawil of The Great American Market with Carol Dodds of C.osmos.is and Jo-Anna Kamorin-Lloyd of A1 Audio & Lighting (Australia).



Global Future Technologies

Pictured above is the Enigma from Advanced Lighting Systems of Edinburgh on the stand of Global Future Technologies, and fresh from its award winning appearance at the PLASA Light and Sound Show in London.



A Le Maitre line-up of Rick Wilson (left) and Anna Sassi and Mick McManus (right) with Global Future directors Jane and Ron Bourque.

When you want the best, ask for it.



Call it by name. The Great American Pattern.

Best designs. Best quality. Best service.

You can expect the best from The Great American Pattern: Distinctive, usable graphics in sizes to fit the broadest range of fixtures. A product manufactured to rigid specifications, insuring highest quality for the most demanding professional applications. Reliable service — all Pattern orders ship the day they are received. Write or call for the Catalog.

GREAT AMERICAN PATTERNS ARE MADE IN THE U.S.A.



THE GREAT AMERICAN PATTERN

826 N. COLE AVENUE HOLLYWOOD CA 90038
213/461-0200 • TWX 910 494 1233 • FAX 213 461-4308

GREAT AMERICAN PATTERNS ARE AVAILABLE FROM THESE FINE DEALERS:

AUSTRALIA: Concert Lighting Systems, Tel: 03 529 5019, FAX 03 529 2629. **FRANCE:** Dimaphot, Tel: 1-47-23-98-87, FAX 1-47-23-40-44. **HOLLAND:** Corne-Light, Tel: 31-020-97-96-86, FAX 31-020-97-79-86. Flashlight, Tel: 30-62-58-14, FAX 30-62-59-34. **HONG KONG:** Engineering Impact, Tel: 3-7110222, FAX 3-7642543. **NEW ZEALAND:** Spotlight Systems, Tel: 64 9-789354, FAX 64 9-780542. **U.K.:** AC Lighting, Tel: 0494-446000, FAX 0494-461024. **WEST GERMANY:** Haussmann, Tel: 4940-660896, FAX 4940-665071. Zilz Concerts GmbH, Tel: 221-58-30-31, FAX 221-58-43-99.

TOMCAT

STAGING, LIGHTING AND SUPPORT SYSTEMS

PARCANS

The general purpose Parcan Lanterns and Mini Parcans have been designed to complement the existing range of Tomcat trusses, mini trusses and associated products.

TRUSSES

Tomcat's wide range of trussing enables the user a choice of the best system whatever the application. Fabricated from 6082 extruded aluminium for lightweight and high load capacity the trusses are ideal for touring as well as theatre and television requirements.

EUROPEAN DEALERS

BELGIUM: Stagelight Lighting Equipment, Langdries 4, 9450 Haaltert. Tel (053) 831726. Fax (053) 834054
Verbiest BVBA, Industriezone "Berkenhoek", B-2860 O.I.V. Waver. Tel (015) 754959. Fax (015) 756288

FINLAND: TFP Markkinointi Oy, Hatanpaanvaltatie 4A, 33100 Tampere. Tel (931) 113 933. Fax (931) 133 077

GERMANY: Multilite Lichttechnik Handels GmbH, Willinghusener Landstrasse 61,
D-2000 Barsbüttel. Tel (040) 6706154. Fax (040) 6706159

ITALY: Spotlight SRL, Via Sismondi 50, 20133 Milano. Tel (02) 714078. Fax (02) 744721

NETHERLANDS: Jansen Jansen, Haarlemmerstraatweg 33, 1165 MJ Halfweg. Tel (02907) 7108. Fax (02907) 6786

SPAIN: Spotlight SA, C/Robrento 66, 08014 Barcelona. Tel (93) 2393765. Fax (93) 4106318

For further information or European dealer opportunities, contact



A.C. LIGHTING LTD

UNIT 3, SPEARMAST INDUSTRIAL PARK, LANE END ROAD
SANDS, HIGH WYCOMBE, BUCKS HP12 4JG, ENGLAND
TEL (0494) 446000 FAX (0494) 461024

TAMPERE HALL

John Offord attends the International Inaugural concert

Tampere, Finland's second city, makes the claim that the main auditorium in its newly opened complex can be counted as one of the great concert halls of the world. Well, there are numerous excellent concert halls scattered liberally around the globe, and yet another opens in Birmingham (UK) in April within the massive ICC complex. I've no doubt similar claims will be made for that, and from a first look very justifiably so.

But . . . Tampere's new hall did get a massive pat on the back when I was there. It came during a special dinner held after the evening's concert and in the form of a full-bodied embrace from the maestro himself, Russian 'cellist Mstislav Rostropovich for the architect, Alpo Halme. Now such unannounced, unplanned and unihibited praise does make you take the claim more seriously . . .

Tampere is often referred to as the Manchester of Finland. It has a population of 170,000, and for a city of this size to build a complex of this magnitude has taken a great deal of courage and faith in the future. For its money (£45m), the city has gained a complex that has three auditoria of different sizes: the main auditorium, a small auditorium and a studio rehearsal hall – as well as many multi-purpose seminar and function rooms and other facilities. There is also a major exhibition hall.

The main auditorium seats 1,806 for concert performances and up to 2,000 for conferences. The size, shape, surface coverings and adjustable acoustics enable it to be used for performance of concerts, choral works and opera in addition to conferences.

The small auditorium has been planned especially for chamber music, but it is also suitable for meetings and small scale functions. There are seats for 489 at concerts and the reverberation time can be adjusted by changing the position of panels in the ceiling.

Primarily designed as a rehearsal room, the Studio can be used as a recording room, music laboratory or as a meeting room for conferences. It can seat 170 to 230 people depending on the type of event. Again, you can change the reverberation: from almost reverberation-less sound to a church-like response.

Acoustical consultant and architect Alpo Halme has been involved with the Tampere



Tampere Hall: a majestic new venue for Finland.



Rostropovich congratulates Alpo Halme.



Tampere Hall by night and day. The complex includes three venues, numerous function rooms and an exhibition hall.

project from the beginning, and acoustics have been taken into full consideration at every stage of the building's development.

The techniques used in the design are based on the situation of the various venues and some typical constructional solutions. In order to cut the framework sound propagation and simultaneously prevent a side-ways transition of the airborne sound, the building has been divided with technical sound 'seams'. Each hall forms a unit of its own in the framework of the building.

The prevention of noise transition through air is based primarily on massive concrete constructions that are also load-bearing, and the noise insulation in the rehearsal rooms has been further improved by using the so called 'room-in-room' technique where they are separately built on a 'floating' floor. "This method of construction has been common in our studio buildings since the late 1960's" explained Alpo Halme, "and it has been used in several venues designed by us."

A speciality of the main concert hall is its versatility. The hall is designed very largely — volume, size, upholstery, etc. — to the demands of music alone, with a reverberation time of 2.2 seconds, and the shaping of the sidewalls enhance side reflections beneficial to music.

However, it has to be used as a multi-

purpose venue, and situated in guides in the walls and ceilings there are sliding components that can be moved to the top of the hall, and behind reside noise absorbant surfaces.

Using this method the reverberation time can be reduced to approximately 1.5 seconds for meetings.

The studio/chamber music hall's reverberation time set to 'music mode' is about 1.6 seconds, but with adjustable ceiling upholstery it can be reduced to 1.4. The rehearsal room auditorium is movable and the the wall situations can be changed giving a very flexible reverberation range between 0.6 and 2 seconds, and depending on the number in the audience.

MS-Audiotron of Helsinki (see separate feature) was awarded the contract to manufacture and install one of its large MCA-Multimix computer controlled audio mixing systems for the concert hall. The main control room consists of an MCA Combo including computer terminal and additional remote terminal, MCA controlled 16 in/40 out line and speaker level switching matrix and a 40/16/2 Multimix sound reinforcement console which is connected to the MCA via bus outputs. Four other custom Multimix consoles were supplied for other sound reinforcement purposes throughout the complex.

The design and manufacturing of the system was customised to a large extent to meet the specifications and features required by the Tampere Hall sound engineers, and the system is one of the largest of its kind in Finland. (A list of other sound equipment is given at the end of this article).

Lighting control for the concert hall is in the hands of a Finnish-manufactured Helvar Macro II, and this takes care of 278 2.2k, 60 5.5k and 12 11k channels. Three small Helvar Pico control boards are part of the 'stock' — one each for the Studio and small auditorium, with the third acting as a spare.

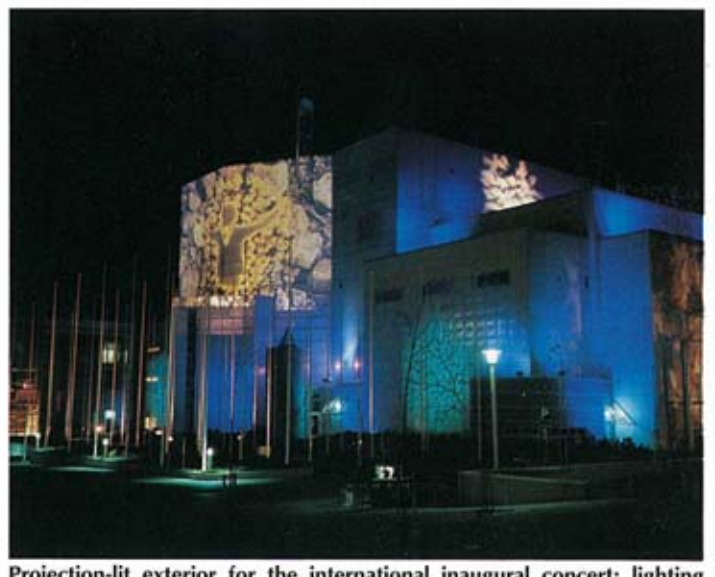
Luminaires are Pani and CCT. Panis look after most of the over stage lighting whilst the CCT equipment takes care of the front of house, located in neat and almost invisible slots in the auditorium ceiling. Cyc lights are Strand Iris 4s. The majority of lighting gear is interchangeable throughout the venues and there is a considerable pool of equipment, including a total of 95 CCT and well over 100 Pani instruments.

Follow spots are Pani 2500s with manual colour change, and the hall also boasts two Pani BP1.2 HMI projectors and one Pani BP6 Gold. Other equipment includes four Foudre 3 strobes from J. Collyns of France, a stock of Pani low voltage lighting and 15 Svobodas for light curtains.

The local company of TFP Markinointi



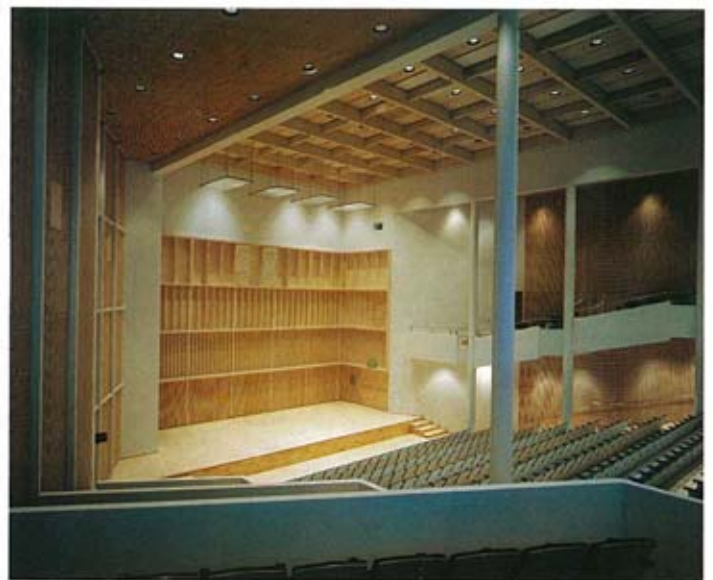
The concert hall stage.



Projection-lit exterior for the international inaugural concert: lighting designer Juha-Pekka Tamminen.



The studio: awaiting a performance.



The small auditorium — designed for chamber music.

supplied the CCT lanterns together with Rosco colour, gobos and smoke machines (1 x 1500, 1 x 4500). The various adjustable platforms used throughout the venues were also supplied and assembled by TFP.

To attract incoming touring shows, the technical department is currently in the process of purchasing a stock of specialist equipment. 180 1000W Tomcat Parcans have already found their way to the Tampere (again through TFP), and a Celco control system looks like joining them in the future.

The management of the Tampere Hall complex is determined to use all the facilities at their disposal, but they will have to promote very heavily — both to their local population and the outside world — to attract both the shows and events and audiences they will need. The city is endeavouring to bring in international conferences and is already having some success in this area. They hope, too, that major international entertainment attractions will put the venue on the regular tour sheets.

It will be difficult, and regular injections of subsidy, in one form or another, will no doubt be needed. One thing is for sure. There is no shortage of technical, management and artistic ability 'on tap' at Tampere. And they have a truly magnificent building in which to work their wiles of promotion and presentation.



Lighting positions, side stage.



Stage machinery control desk.



A Helvor Pico control board in the studio control room.



The small auditorium control room.

TAMPERE HALL

Technical Department

Technical manager: Raimo Putkonen

Stage manager: Kari Putkonen

Lighting designers:

Marko Koivisto
Juha-Pekka Tamminen
Jyri Tervakangas
Reima Rajala

Sound designers:

Juhani Laine
Heikki Lehtonen
Hannu Mäki-Laurila
Juha Sirén
Harri Valoma

Architects

Sakari Aartelo
Esa Piironen
Alpo Halme (acoustics)

Sound Equipment

(not already mentioned in article)

PA System: Martin LE400 wedge monitors, Genelec 1018 (50W) active hot spots, Genelec 1072 (300W) sidefills (RCF 15" + JBL horn driver), 5 × Yamaha Q 2031 dual 32 band graphic EQs.

Effects and Processors: 4 × Symetrix 525 comp/lim/gate, 3 × Yamaha SPX 1000, Lexicon PCM 70, TC Electronics 2290 delay, AKG ADR 68k digital reverb and effects processor, 2 × Art PD3 line delay.

Recording Equipment: 2 × Studer A810 multitrack, 1 × Revox C270, 1 × Denon DR M-34HX, 1 × Otari 16 track MX80.

Microphones: 8 × Shure SM58, 6 × Shure SM59, 10 × AKG C414 B-ULS, 2 × Bruel & Kjaer Y011 and 2 × Y006, 8 × C-Ducer, 8 × Sennheiser MD421, 12 × Sennheiser MD441, 6 × AKG C568EB, 7 × Countryman D1-box, 6 × AKG C451/CK1.



The Helvor Macro II in the Concert Hall lighting control room.



Mr Morelli, technician for MS-Audiotron responsible for installation and training.

TFP-MARKKINOINTI OY

are proud to have supplied equipment to Tampere Hall



CCT Lanterns, TOMCAT Par Cans, Trusses,
ROSCO Colour, Gobos and Smoke Machines

HATANPÄÄNVALTATIE 4A, 33100 TAMPERE, FINLAND

Tel: INT + 358 31 113 933

Fax: INT + 358 31 133 077

DISTRIBUTOR
ENQUIRIES WELCOMED

CONTACT:
JUHA IHANAMAKI

MATTI AND THE MULTIMIX

John Offord talked to Matti Sarapaltio of MS-Audiotron

MS-Audiotron president and sole owner Matti Sarapaltio — yes, you'll have recognised him from his frequent appearances at international trade shows — has been 'in the business' for 25 years. A professional saxophonist in his early days, he started a small workshop, built a few cabinets and did a few rentals.

In 1973 he started MS-Audiotron and began visiting exhibitions around the world. It gave him a head start and in the following years he scooped up most of the big names in the manufacture of sound and lighting equipment as their exclusive distributor in Finland. He now runs a company that employs 60 people and has a turnover of 50m Finmarks (about £7m). His distributor list is far, far too long to print here.

Matti Sarapaltio has a fine line in blunt super-slang Anglo-American superlatives and expletives that are totally unprintable. Certainly he leaves you in no doubt as to meaning.

But his heart is in the industry, and his language is much more considered and eloquent when he talks about the music business and the way it performs. A man who grew up with the jazz festivals of the early sixties, he feels he has to keep emphasising the fact that everything isn't rock and roll. "I try to teach my staff this," he told me.

"The improvement in equipment has been due to demand from the bands," he continued. "Small mixers, 8-12 channels, bigger cabinets, power amps and monitors — all these were new. The musicians demanded it and it was fun; a pioneering age and a lot of work."

On his way through the sixties Matti Sarapaltio spent time in broadcasting and five years on studio work. "But with no mutli-tracks," he emphasised. "Nowadays you can multiply the dB level by 10 very easily, and I think it's down to the crazy sound people, not the artistes.

"Now, the touring money, on sound, lighting and staging — there's plenty of it, but I have to ask where the music is? The equipment has become better and better, but the output worse and worse in many ways. The range is not there. Too much equipment development has gone ahead of the people who are using it and their touring."

He has a different and better view of the industry in general and the companies in it. "We are now much more open-minded and people are talking to each other. Competition is much more open now," he said.

For many years Finland had been one of the few routes of selling equipment to the USSR, so I asked Matti about the current situation, following all the recent changes. "We have done some good work there, often through Finnish contractors. We've recently started advertising, but let's wait and see. It's all a sad song; they are so broke. Maybe Charles Darwin should be



Matti Sarapaltio: a pro-European view.

listened to more closely.

"The biggest problem in the USSR is their expectation of a Western standard of living coupled with the Russian attitude to work. They are scared now they are in the open. And along with that everything is corrupt. The route through is always diverse — under the table or round the corner. So we have a black market and now the mafia."

I asked about the world market for equipment. "I feel very pro-European," he said. "We Europeans should look much more closely at what the Americans and Japanese are doing."

Matti Sarapaltio was 50 in November and has gone back to playing the saxophone. In 1991 he plans a change in the structure of his business. One thing is certain. Unless I'm very mistaken his knowledge and nous

will keep him and MS-Audiotron at the leading-edge for a long time into the future.

MCA-Multimix

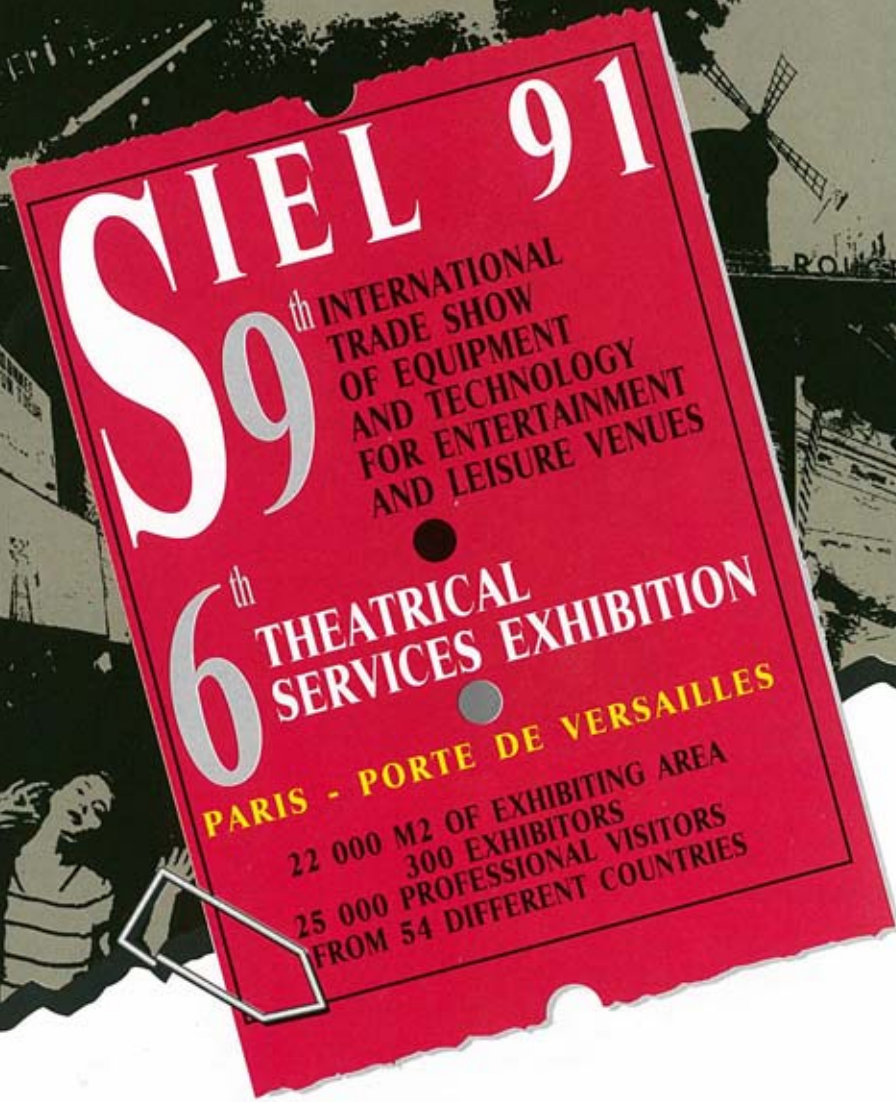
MS-Audiotron has recently undertaken several R&D projects and now manufactures hi-end audio products of its own. The Simultimix console is for applications where simultaneous multitrack recording and broadcasting/PA is required, for example OB vans. Of more interest to L+SI readers is the Multimix modular console for sound reinforcement and the MCA computer controlled console dedicated to live theatre sound and similar applications where complex multi-channel sound is required, and as installed in the Tampere Hall (see feature).

The MCA system is capable of



MS-Audiotron MCA Multimix system at Tampere Hall.

FEBRUARY 16/19 1991



ALL THE PRODUCTS AND SERVICES CONCERNING :

Sound - Lighting - Special effects - Stage machinery - Radio - Video - Studio equipment - Acoustical equipment - Decoration
Furniture promotion - Animation - Gaming machines - Theme park equipment

FREE INVITATION - TO BE RETURNED BEFORE JANUARY, 15, 1991

IF YOU COMPLETE AND RETURN THIS COUPON ,
your badge for access to the event will be posted to you in order to avoid queues on arrival at the show.

NAME _____ SURNAME _____ COMPANY _____

PROFESSIONAL ADDRESS _____

POST CODE _____ TOWN _____ COUNTRY _____ TEL _____

FUNCTION / ONE CHOICE ONLY

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> 1-architect | <input type="checkbox"/> 5-decorator | <input type="checkbox"/> 8-sound engeneer | <input type="checkbox"/> 11-stage manager |
| <input type="checkbox"/> 2-animator | <input type="checkbox"/> 6-lighting engeneer | <input type="checkbox"/> 9-litter | <input type="checkbox"/> 12-scenographer |
| <input type="checkbox"/> 3-artist | <input type="checkbox"/> 7-manager | <input type="checkbox"/> 10-producer | <input type="checkbox"/> 13-engeener |
| <input type="checkbox"/> 4-administrator | | | <input type="checkbox"/> 14-journalist |

ACTIVITY / ONE CHOICE ONLY

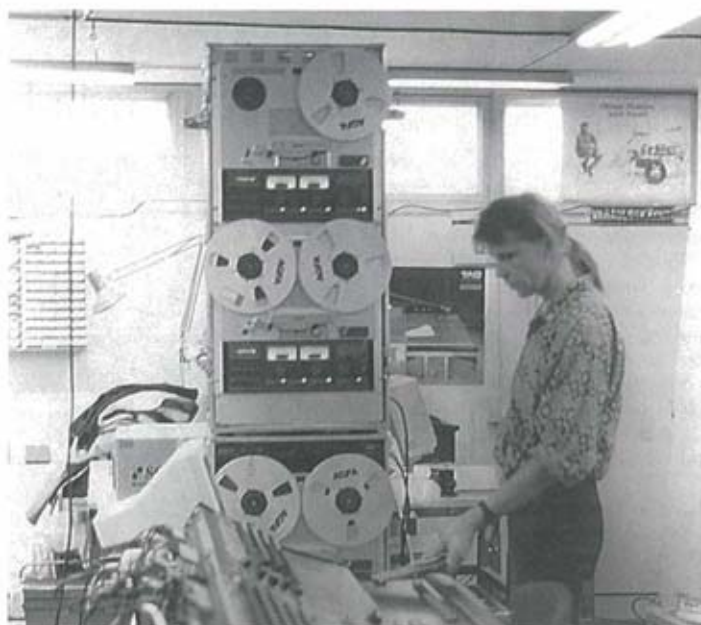
- | | | | |
|--|--|---|--|
| <input type="checkbox"/> 1-local authority | <input type="checkbox"/> 6-youth club & art centre | <input type="checkbox"/> 10-radio | <input type="checkbox"/> 15-sound studio |
| <input type="checkbox"/> 2-cinema | <input type="checkbox"/> 7-entertainment organiser | <input type="checkbox"/> 11-retailer | <input type="checkbox"/> 16-video studio |
| <input type="checkbox"/> 3-disc-jockey | <input type="checkbox"/> 8-congress hall | <input type="checkbox"/> 12-concert hall | <input type="checkbox"/> 17-TV |
| <input type="checkbox"/> 4-discotheque | <input type="checkbox"/> 9-theme park | <input type="checkbox"/> 13-multipurpose hall | <input type="checkbox"/> 18-theater |
| <input type="checkbox"/> 5-exhibition hall | | <input type="checkbox"/> 14-hotel | <input type="checkbox"/> 19-press |

PLEASE RETURN THE COUPON BELOW TO:


BERNARD BECKER
BLENHEIM

22, 24 RUE DU PRESIDENT WILSON 92532 LEVALLOIS PERRET CEDEX FRANCE





The MS-Audiotron operation now employs over 60 people in hi-tech surroundings.

automating and storing several routine functions common to most advanced theatre sound applications, and the following features are incorporated:

Up to 4 tape recorders with search, start, stop, rewind, fast forward functions. Most recorders with an RS 232C interface can be used.

MIDI for sampler triggering, MIDI eq and reverb program changes, etc.

Input routing and muting.

Multi channel speaker switching utilising an 8 x 8 VCA matrix plus optional MCA controlled speaker or line level switching

matrix. Up to 100 speaker channels can be controlled.

Manual and auto pan through any selected speakers.

Programmable digital fader to determine and memorise output level of all speakers. This feature, coupled with auto pan, enables the sound engineer to create moving or static sound fields, e.g. approaching thunder storm with a circulating helicopter and explosions etc. surrounding the audience.

A monitor with keyboard is supplied for visual information on cues, input and

speaker routing, etc.

Also available is a remote terminal which enables the sound engineer to cue and make changes to the programs from the audience area. This enables far more accurate monitoring of the real situation.

"The MCA allows the sound engineer to step through cues with a production and can concentrate on the finer aspects of mixing instead of frantically searching for correct effects, patchbay connections, volumes, and so on," stated Matti Sarapaltio.

$$C = \pi d$$

(Archimedes: 250 B.C.)

$$I = E/R$$

(Ohm: 1827 A.D.)

$$F = M.a$$

(Newton: 1687 A.D.)

$$E = mc^2$$

(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

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

SUCCESS BREEDING SUCCESS

EASTWAY SHOW SERVICES

John Offord visits Finland's front runners

Finland's leading operator in concert and event production is now Eastway Show Services of Helsinki, a company that has expanded by both natural growth and acquisition.

Brothers Juha (managing director) and Jyrki Hytti (technical director) started in business with sound equipment hire and supply in 1981, moving into lighting in 1988 when they purchased the stock of Bill Daley Oy when that company closed operations. In 1989 they incorporated Ekku Peltomäki Oy and reached their now pre-eminent position in Finland, and possibly the whole of Scandinavia as a result.

Trade shows and presentations of various types account for around two-thirds of the company's activity and turnover, with the rest coming from a mix of TV work, live concerts, displays and so on. There is also some equipment sale, more of which later.

With its roots in sound, it is no surprise that Eastway has a comprehensive stock, and this is built around 'system' use. They have four main systems: an active 100,000W continuous power 4-way PA system, a 45,000W continuous power 3-way system, an active 15,000W continuous power monitoring system, and a 12,000W continuous power monitoring system.

Speakers are largely JBL and Electro-Voice and mixers DDA, TAC, Yamaha and Soundcraft. Mics include Shure, EV, Sennheiser and AKG, and processing equipment covers a range of most of the well known names.

Their lighting stock follows the same kind of international line-up. Control includes Celco, ETC, GAM, Avolites, Amptown and Zero 88 equipment. Lanterns include Thomas, ADB, CCT, Arri, etc. with Lycian, Pani and Strong follow spots. Trussing and pre-rigged truss is Thomas plus some Astralite, and they hold a complete Thomas ground support system with Verlinde chain hoists and Avo controllers. Curtains and back-drops are available too. For the flashy stuff they have Sky Trackers, Color Rays and Moto Arcs and more.

Following the joining of forces with Ekku Peltomäki Oy last year, Ekku Peltomäki himself is



Managing director Juha Hytti (left) and technical director Jyrki Hytti.



Part of Eastway's 25 strong team pictured in the lighting warehouse.



Sibelius Park: LD: Ekku Peltomäki.



Famous facade: Helsinki gets light out treatment from Ekku Peltomäki.



Light and sound for a concert at Tallin, Estonia.



This complete 'space station' was designed and produced by Eastway for IBM at their Helsinki HQ in February 1990. LD: Ekku Peltomäki.



An Eastway production for an anniversary party for Hakanit cosmetics took place in an old cable factory in Helsinki. LD: Vallu Syrjänen.

now art director for Eastway, giving an artistic dimension to the company's range of services as well as increasing its international experience. Peltomäki has a long list of lighting design credits to his name, some of which have been featured in previous issues of L+SI including the design for 'Cats' in Helsinki and his work as light artist at the underground arts centre at Retretti. At a young 40-something he adds a considerable amount of experience to the 25-strong Eastway team whose average age is just 27.

So, having set themselves up very neatly in all aspects of production, the company is quite naturally looking at sales as another area of growth. They are already exclusive Finnish distributors for Great American Market, Thomas and SkyTracker of America and also supply most international product lines, but under sales manager Olli-Pekka Kollia (also previously with Ekku Peltomäki) plan to push more heavily into sales and offer the 'total' facility of design, production, hire, sales and service to their clients.

As Kollia told L+SI: "Eastway is now the leading staging and production company in Scandinavia and has the ability to offer a complete service, from design right through production and hire to sales and after-sales service and maintenance. And we have an excellent team for the job with all the necessary skills and enthusiasm."



Ekku Peltomäki.



Olli-Pekka Kallio.



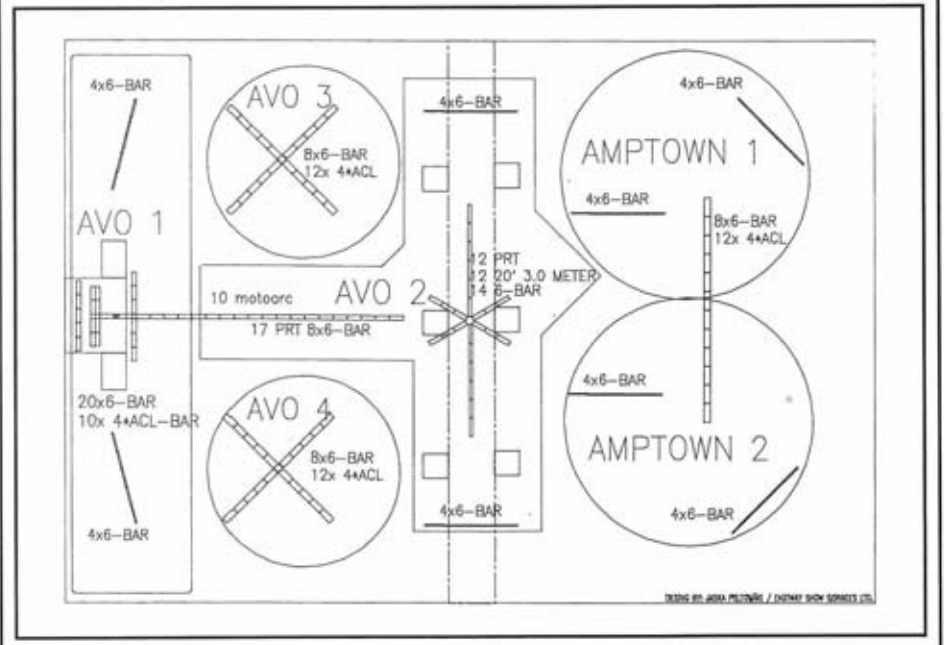
Designed by Jaska Peltomäki, this Coca-Cola sponsored discotheque was produced by Eastway for SVUL (athletics association).

Equipment:

30 × Verlinde 1000 kg
 16 × Buffalo 500 kg
 1 × 20-ch motor control
 1 × 10-ch motor control
 40 × pre-rigged truss
 40 × 20' truss 2.4m
 28 × 20' truss 3.0m
 30 × 12' truss 3.0m
 1 × pre-rigged 6-way
 5 × 20' 4-way

1 × pre-rigged 4-way
 6 × 20' hinge
 1 × pre-rigged hinge
 1 × pre-rigged/20' adaptor
 8 × outrigger
 2 × Avolites 72
 2 × Amptown 36
 2 × Avolites 30
 2 × Celco 60 Major
 2 × Celco 30 Major
 98 × 6-bar Par 64

46 × 4*ACL-bar
 42 × Par 64 CP60
 12 × Raylite
 12 × MotoArc
 2 × Pani followspot
 2 × Orbiter followspot
 4 × followspot chair
 6 × ClearCom
 20 × 8*ACL-bar
 5 × smoke machine LTM
 5 × wind machine LTM



The VL4. Smaller. Lighter. Faster. Brighter.

Vari-Lite Inc.'s new VL4™ wash luminaire is the latest addition to the Series 200® system — with superior response and the latest in technological advances.

Smaller. The compact size of the VL4 luminaire (14 3/8 inches X 20 3/8 inches) makes it ideal for versatile placement, particularly in limited spaces.

Lighter. At a mere 38 pounds, it is easy to handle and requires far less truss support.

Faster. The VL4 luminaire can pan and tilt as fast as 240° per second or as slow as .75° per second. With smooth continuous motion.

Brighter. The HTI® 400 watt source produces an extremely bright beam of 2000 foot candles at 20 feet.



The new high-speed shutter douser provides instantaneous blackouts, bumps, and strobe-like effects — in less than 0.1 seconds.



The crossfadeable dichroic color tuning system allows you to achieve the precise color you desire. With 240 pre-programmed colors and independent cyan, magenta and amber color panel control, you can create a custom palette. Color crossfades can be programmed to last for hours. Or

you can change a color in less than 0.3 seconds.

The beam angle of the VL4 luminaire can be programmed to vary from spot (as narrow as 4°) to flood. Textured glass panels intercept the beam to provide a continuous range of diffusion — up to a 28° field angle.

The VL4 luminaire is an extremely versatile instrument. And is ideally matched to Vari-Lite's VL2B™ spot luminaire. Both instruments use a 400 watt arc lamp and can be color corrected to 3200° tungsten.



Vari-Lite is the leader in automated lighting technology. We will help you create the look you want — with our new VL4 wash luminaire or any of our other wash and spot luminaires. Back you up with experienced operators. Reliable service. And support that's unmatched throughout the world.

VARI*LITE — the finest automated lighting system for concerts, television, film, video, theatre, industrial shows, and conferences — a system that offers you total control of the full spectrum of lighting possibilities.

DALLAS OFFICE 214/630-1963	LAS VEGAS OFFICE 702/795-4766	MADRID SUB-DISTRIBUTOR 34/1/470 23 30	ORLANDO REPRESENTATIVE 407/855-8060	SYDNEY DISTRIBUTOR 61/2/317-5200
BUENOS AIRES DISTRIBUTOR 54/1/566-4846	LONDON DISTRIBUTOR 44/081/450-8955	MEXICO CITY DISTRIBUTOR 905/660 38 82	PARIS SUB-DISTRIBUTOR 33/1/45 07 97 09	TOKYO OFFICE 81/3/446-0041
HONG KONG DISTRIBUTOR 852/7550145	LOS ANGELES OFFICE 818/709-7779	NEW YORK REPRESENTATIVE 914/942-0075	SEVILLA SUB-DISTRIBUTOR 34/5/418 30 66	TORONTO DISTRIBUTOR 416/367-8707

VARI*LITE
The Automated Lighting Company

Vari-Lite Europe Limited
112 Cricklewood Lane • London, NW2 2DP
Tel: (081)450-8955 • Fax: (081)450-7921

THEATRE IN HUNGARY

by Mihály Vargha

Special L+SI feature compiled by John Offord

Exactly two hundred years has passed since the first professional Hungarian theatre company gave its opening performance on the 25th of October, 1790 in the castle Theatre in Buda. A recent meeting of the International Organisation of Scenographers, Theatre Architects and Technicians (OISTAT) Publication and Information Exchange Commission held in Budapest and other venues throughout the country gave L+SI a chance to visit five major theatres and the State Opera House in Budapest. We asked architect and theatre consultant Mihály Vargha to set the scene on the occasion of this bi-centenary.

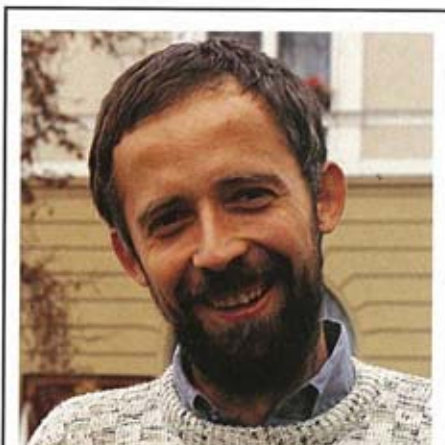
“Over the past two hundred years there have been few occasions for ‘overseas’ Europeans and the rest of the world to get acquainted with the best productions of Hungarian theatres, and our past 40 years have been especially unsuitable for advertising our cultural merits in spite of the world-wide development of the information society around us.

“The ice was broken last year when Hungarian cultural weeks were organised in the Barbican Centre in London, but I understand that this event made less impact than was hoped for by our press and TV commentators. Hungarian theatre life might be virtually unknown but I am sure our film industry is known in Great Britain as it is generally well-known in the western part of the world. And this fact may well be a good start towards theatre as the following passage from a recently published book suggests: ‘Almost all the leading roles in the productions at the top theatres, such as the Katons József, were taken by actors and actresses who were also Hungary’s most popular film stars. There was no evidence of the division of talent between film and theatre common in Western Europe. In a small country, versatility is *de rigueur*.’ (Stephen Brook: *The Double Eagle*, Picador 1989).

“It’s interesting to note that the Katona József Theatre was mentioned as an example where the author had seen two performances: Shakespeare’s ‘As You Like It’ and Harold Pinter’s ‘A Kind of Alaska’. Many people are of the opinion that it is one of the best theatre companies in Hungary, and they have made several successful tours abroad and have been members of Strehler’s Europe Theatre since 1989. Their latest premiere of Chekhov’s *Platonov* took place in Paris in the Spring of 1990.

What’s On

Leafing through the weekly magazine of cultural information about Budapest, Pesti Műsor, Stephen Brook was surprised to see how many of Shakespeare’s plays were running in Budapest theatres. According to an old Hungarian joke, Shakespeare is the best Hungarian dramatist! Many of his plays were excellently translated into Hungarian in the last century but his popularity had been established earlier through German trans-



Mihály Vargha, the author of this article, is an architect and theatre consultant, beginning his work in theatre technology in 1979. He soon became assistant editor of *Színháztechnikai Fórum* (Hungarian Review of Theatre Technology), and at the same time produced technical plans for the reconstruction of various theatres and cultural centres. From 1986 he has been the editor of *Magyar Epitevészet* (Hungarian Architecture) and is currently acting editor. In 1989 he was technical consultant for the second place prize in the competition for Budapest’s new National Theatre.

lations. Hungary had been under Habsburg rule for a long period so the language of the theatres at the turn of the century was German.

“To counterbalance this influence, and to start the development of Hungarian theatre was the aim which brought our first national theatre company into being two hundred years ago. But this company, owing to the lack of a permanent building and financial aid, couldn’t take root and 50 years had to pass until the first Budapest theatre performing in Hungarian opened in 1837. In this building of acceptable but not too original architectural quality, both plays and operas were performed, and the first attempts to write plays and operas in

There are two main legacies handed down from the former communist government of Hungary: one major asset, one major problem. The assets are in real estate and people. An excellent structure of theatres has been set up right across the country, with the majority of major venues having received considerable rebuilding and renovation programmes through the eighties. And they have the technical staff, management and acting companies to go with them.

On the debit side there is the tremendous problem of how to fund operations that up to now have relied on state subsidy of around 90%. With ticket prices at under £1.00, attendances have been good, but box office income accounts for only 10% of the necessary funds. In addition the staff numbers, both technical and acting, are large by Western standards.

As Hungary’s economy moves into a market-based system, there will be a difficult period of change ahead. Ticket prices will have to rise, and the timing and pacing of change will have to be delicately handled.

The outlook has to be good, with a period of at least unsettled weather, possibly stormy, in between.

Hungarian can also be ascribed to this period.

“József Katona, whose name was taken up by the successful company, was one of our first important dramatists, and a few decades later Imre Madách, author of ‘The Tragedy of Man’ won international fame for Hungarian drama though mostly among the professionals and to a lesser extent among the public. The play itself was produced first in 1883.

“In the second half of the 19th century, coinciding with the boom of theatre building in Europe, several theatres were built in Hungary. The starting point of this period was the Hungarian-Austrian compromise of 1867 and it ended in 1914, at the beginning of the First World War. (This interval can be clearly followed in the data of the theatres presented in accompanying tables). Pest and Buda were united in 1873 and the first theatre opened in 1875 which was the Népszínház (Popular Theatre) built by the Austrian company Fellner and Helmer which built more than 50 theatres all over Europe in the following decades.

“It’s a great shame that this theatre and the first Pest theatre built in 1837 couldn’t be included in the tables but they have been demolished. I’m sorry not only for the loss of the buildings themselves but also for their historic importance, as they became the first National Theatres in Budapest (the old one between 1840 and 1908, the Népszínház from 1908 till 1964).

“The building which houses the National Theatre today was built at the turn of the century and totally reconstructed in the early 1960s. Several attempts to build a ‘real’ National Theatre, have been made but none has been successful so far. Six design competitions have taken place this century and it gives little comfort that it also took a long time to build the National Theatre of London, especially if we count it from the birth of the British theatre! So I hope we won’t have to wait for another two hundred years in Budapest. But there’s one thing I’m sure of: we mustn’t again fall into the error of wanting to build a grandiose theatre with a huge stage-system as the former regime did.

“The ‘Opera’, designed by Miklós Ybl, opened in 1884 and was a much more successful building. It has remained the glittering jewel among the Hungarian theatres ever since. It was one of the most up-to-date buildings of its age, and the first to have understage machinery and flying system operated by water-hydraulics. It was the last theatre to use this invention of the Viennese Asphaleia company. The stage lifts, which had been out of use for many years were started once again for the last time in 1981 when the reconstruction of the building began. Later they were changed for a new electro-mechanical system of East German manufacture following a ‘political decision at high level’. In fact it was the cheapest on the market. Since then Sziki, the leading Hungarian staging and engineering company, has worked on the gradual replacement of



The most delicately beautiful of the theatres visited in Hungary, the Katona József Theatre (above and right) in Kecskemet was originally opened in 1896 with an auditorium capacity of 943. It has had a permanent company since the fifties and various renovations with a major reconstruction in 1986-1987 under architects Gábor Farkas and Pál Boros. Consultants for the project were Tónus GM (Judit Csanadi, Sándor Máté and Mihály Vargha). The theatre now seats 596 and was re-opened on December 18, 1987. It has a revolving stage.

KECSKEMET: Katona József Theatre



The auditorium, showing Tungsram/Pani lighting instruments.



The OISTAT/PIEC group pictured at the State Opera House in Budapest. Representatives came from Chile, Czechoslovakia, Great Britain, Hungary, Germany, the Netherlands, Norway, Poland, the Soviet Union, Sweden, Switzerland and the USA.

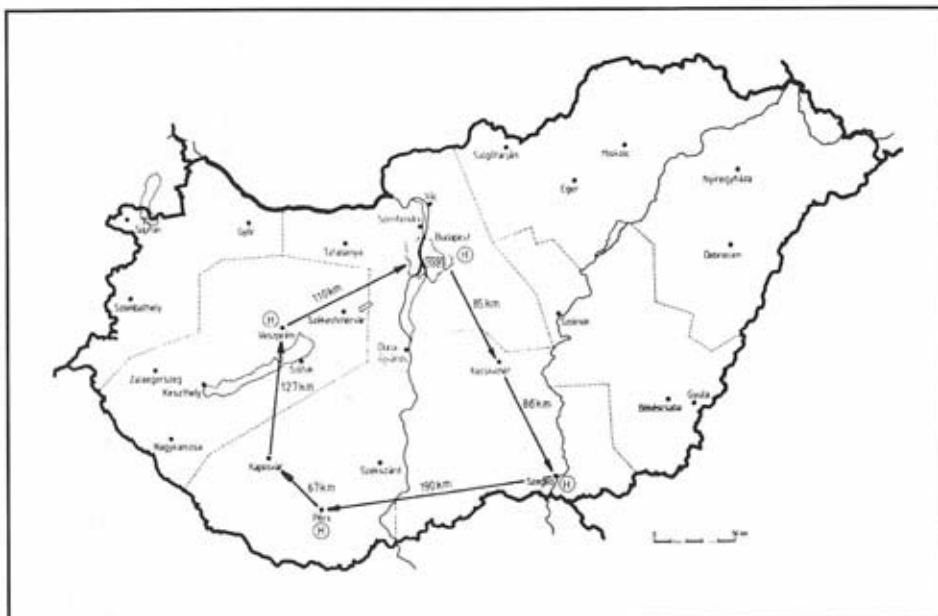


Lighting and sound control at the Katona József Theatre.

the controlling mechanism every summer and we are hoping for reliable machinery very soon!

"The period between the two world wars didn't produce much in the field of building but it brought a great deal of achievement in Hungarian theatre life. Apart from the two state-owned theatres (the National Theatre and the Opera) several private companies appeared both in the capital and across the country. Cabaret venues and music-halls opened – and closed – mostly in Budapest. Of course, this didn't mean it was an exciting era free from worry; it's enough to remember the world-wide economic crisis of the 1930s and the catastrophic peace treaty of Trianon, in consequence of which two-thirds of the Hungarian territory was annexed to other countries with one-third of the Hungarian population becoming an ethnic minority within new boundaries.

"The contradictory influences of these



Map showing location of theatres visited during the OISTAT/PIEC tour.

years are proved by the great number of artists and scientists who emigrated from Hungary, the internationally famous dramatist Ferenc Molnár among them.

Decades in the Eastern Bloc

“The achievement of the period between the two world wars – though it wasn’t unclouded – came in very useful for the people’s democracy proclaimed in 1948. The new regime nationalised all private theatres and the artistic management of the state-owned ones as well. The extremities, considered improper by the authorities, were ‘clipped away’ and a centrally directed ‘socialist-realistic’ style of art was soon introduced. The Kádár-regime first only slackened this rein a little but in its last years it simply gave up all kinds of artistic control. And this is where we are now . . .

The Buildings

“But let us return to the subject of the theatre venues. In the last 40 years only two new theatres have been built in Hungary – in Győr and in Mátészalka – but a lot of other events have taken place. Several theatres have been reconstructed or modernised and this process has gathered speed in the last five years. The theatres of Szeged, Kecskemét, Kaposvár, Veszprém and two theatres in Budapest, the Játékszín and the József Attila Theatre, were completed and the reconstruction of the theatres in Pécs and Szolnok and that of the Arany János Theatre in Budapest has almost been finished.

“And we mustn’t forget about the cultural centres either. Most of them are suitable for taking in productions of travelling companies, and some of them located in the bigger towns can house temporarily a permanent company too, where the theatre is being re-built. The cultural departments placed a great emphasis on building such centres all over the country between the fifties and seventies. In the 22 districts of Budapest 24 such cultural centres can be found and about two-thirds of them can be used for theatrical performances. But it’s a pity that few of these buildings have architectural quality worth mentioning. Some

SZEGED: National Theatre

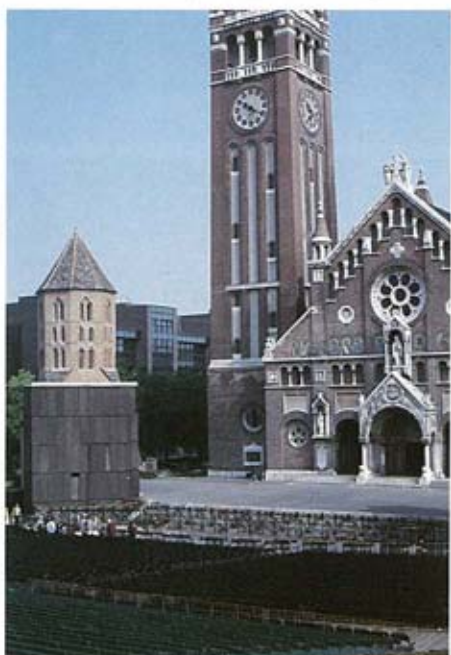


The National Theatre at Szeged has had a chequered history. From 1800-1847 there was a theatre-hall in the town hall and then a summer theatre (1856) later re-built for winter use. Destroyed by a great flood in 1879 the reconstruction of the town dictated the building of a new theatre.

The theatre now standing opened in 1882 (architects Ferdinand Fellner and Hermann Helmer) but it suffered a fire and was rebuilt soon after with insurance funds, eventually re-opening in 1886 with an audience capacity of 1018. It was reconstructed in 1948-49 with a major overall reconstruction from 1978-1986. It now seats 856. Architect for the latest reconstruction was Márton Maár with theatre technology from Színháztechnika Kiszövetkezet (Sziki). The front of house facilities, in marble, brass and gilt are of special note.



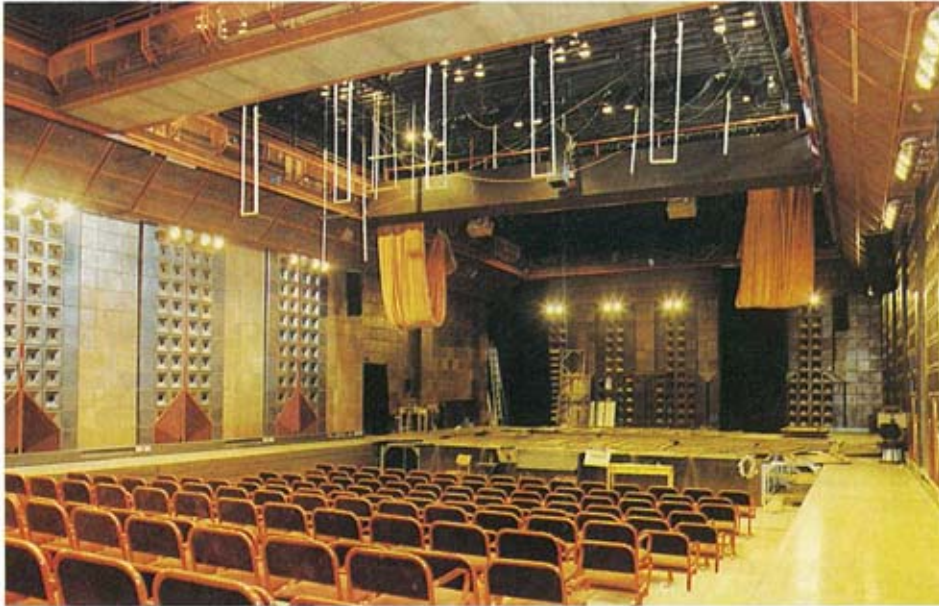
Sound and lighting control at the National Theatre, Szeged.



Pictured above is part of the massive open air theatre at Szeged.



PÉCS: National Theatre



The National Theatre at Pécs in southern Hungary is currently undergoing a major reconstruction, now reaching its conclusion. It was originally opened in 1985 (architects Antal Steinhardt and Adolf Láng) and had seating for 1150. When it re-opens it will have seats for 590. The Intimate Theatre (shown left) is a popular venue and seats 276-340 depending on format and was opened in 1986. There is also a Studio Theatre (95 seats) and the Room-Theatre with 90 seats.

of them operate as small theatres or can be turned into theatres by making small alterations. The theatre of Zalaegerszeg was built this way and the new cultural centre of Mátészalka was designed to house a permanent company though only the lower part of its completed fly-tower has been used.

"I must stress the point that several new companies were founded during this time — four new state-owned ones in the 1980s — and many companies gained additional small or studio theatres. And in the last few years some new private companies were also founded, self-supporting ones or sponsored

by different trusts. Quite a few new initiatives are taking place in the theatrical world nowadays as well, such as performances in English during the tourist season in summer.

"It will be interesting to take another 'snapshot' of Hungarian theatres in a few years time in order to record the changes that are now taking place.

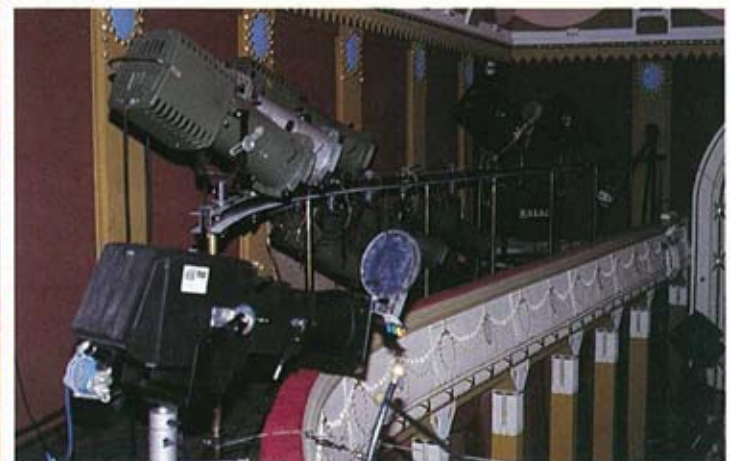
Other Activity

"I haven't yet mentioned summer theatres in Budapest and other performing arts. It's a very complex matter, but let's look at a few examples.

Among the summer theatres in Budapest the two most notable are the Dominican Churchyard of the Hotel Hilton and the Open-Air Theatre on Margitsziget (Margaret Island). The former provides intimacy and a beautiful view of the town as a background, the latter a unique atmosphere owing to its location in a big, hundred-year-old park.

"The oldest and best concert hall in the capital is the Academy of Music with excellent acoustic and interesting art-nouveau interior. This building, which is an early example of the use of reinforced concrete framework, was completed in 1907 to the

KAPOSVÁR: Csiky Gergely Theatre



The traditional style Csiky Gergely Theatre in Kaposvár was built in 1911 as a summer theatre — without heating! Architects were Ede Magyar and József Stahl. It has a horseshoe-shaped auditorium with boxes on three levels plus gallery and originally seated 1500. It re-opened in March 1988 after major reconstruction and the auditorium now seats 547 in comfort. It has had a permanent company since 1955 and also supports a studio theatre. Architects for the reconstruction were Éva Czuppon and Zsuzsanna Novák with theatre technology from Színháztechnika Kiszövetkezet (Sziki).

designs of Flóris Korb and Kálmán Giergl. Only concerts likely to attract a large audience are given in the Budapest Convention Centre which has a large, air-conditioned hall.

"I don't want to become entangled in the programmes of the different night clubs, jazz, pop and folk music clubs or discos, as one can find information about them weekly in **Pesti Műsor**. For those who want to spend a longer time in Budapest and those who are especially interested in the capital I recommend a book by **András Török: Budapest, A Critical Guide** which has been published both in English and German.

Shakespeare again

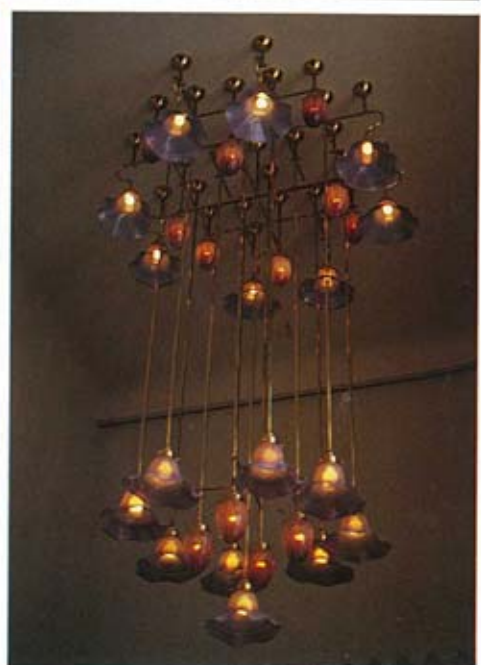
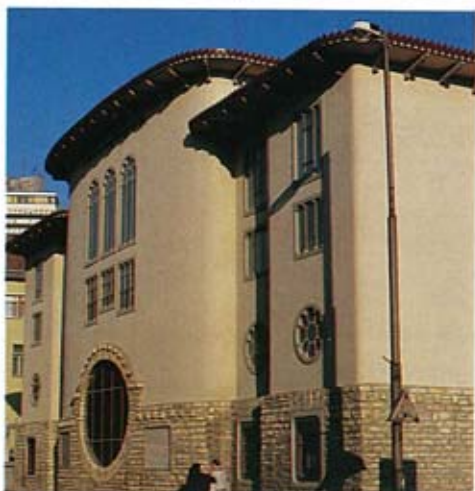
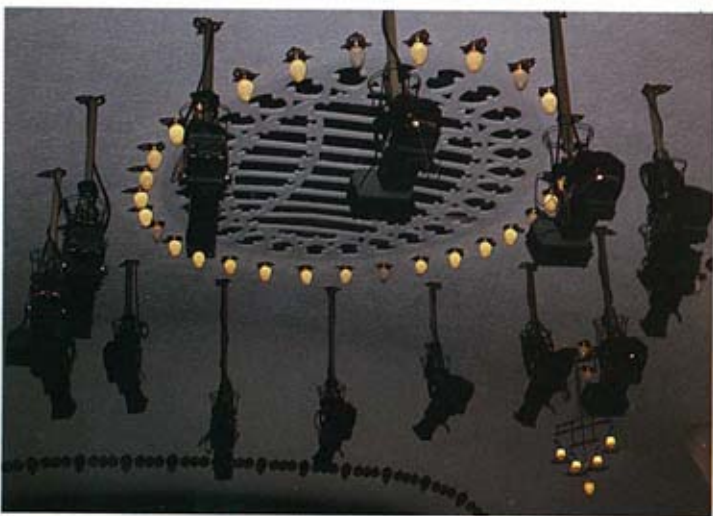
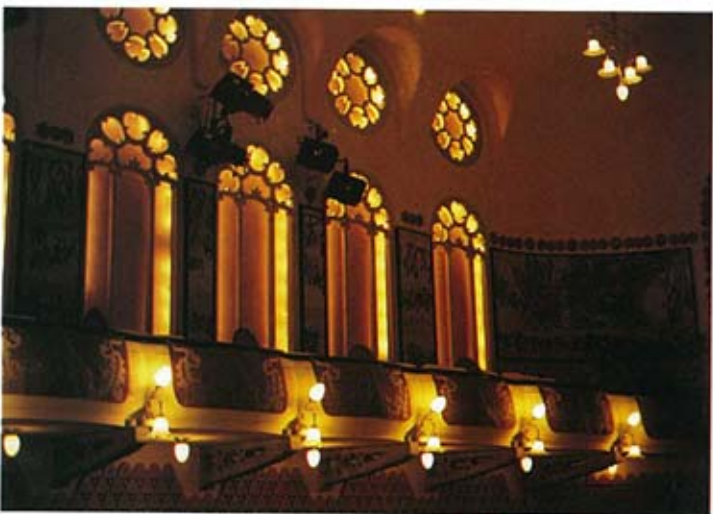
Hungarian author György Dalos wrote his book '1985' in 1981 and it was first published illegally. The title is a kind of reminiscence of Orwell's novel 1984, and here is a passage from it: 'At the last scene of the play, when Fortinbras ordered his men to give Hamlet a soldier's funeral in state, the audience stood up as one and demanded similar funerals for the three revolutionaries. Those sitting in the pit were shouting together with the students in the gallery. The members of the SZVH (Authority for the Protection of the Intellect) present were trembling with rage and fear as they watched this grand protestation. It

looked as if two theatres met here: a colourless copy of the old National Theatre (for the performance was rather immature) and the 'Real Theatre' which performed without script or staging.' Such demonstrative 'performances' of the audience have actually happened in Hungarian theatres.

"A good example of this was a production of the Csiky Gergely Theatre in Kaposvár: Peter Weiss's 'The Persecution and Assassination of György Szegő' as the stage designer. This was 'Real Theatre' in Hungary and I have hope now there will be much more.

Mihály Vargha

VESZPRÉM: Petőfi Sándor Theatre



The Petőfi Sándor Theatre at Veszprem was easily the most unusual theatre visited. Opened in 1908 it is an early reinforced concrete building in which architect István Medgyaszay wanted to create a special Hungarian style taking into consideration the characteristics of the new building material and methods. Various improvements were carried out in the eighties with a major reconstruction completed in November 1988. It has housed a permanent company since 1961 and now seats 449 (originally 550) and has been listed as an historical monument. Architect for the reconstruction was Peter Szendrő and designer István Szenes (both of Kőzti) and technical consultants were Sziki.

THEATRE ● REGULARLY ○ RARELY	POPULATION OF BUDAPEST 2,102,000	BUILT ORIGINALLY RECONSTRUCTED (REFURBISHED)	SEATS (STUDIO)	COMPANY				STAFF (TECHNICAL)	LIGHTING C = CONTROLS L = LANTERNS (H) = HUNGARIAN	SOUND M = MIXER A = AMPLIFIERS LS = LOUDESPEAKERS (H) = HUNGARIAN	NOTES
				DRAMA	OPERA	BALLET	MUSICAL COMEDY				
MAGYAR ÁLLAMI OPERAHÁZ H-1061 Budapest, Andrássy (former Népköztársasági út 22 (361) 1312550		1875-1884 1912 (1900-1984)	1261		●	●		1964 (357)	C = Strand Galaxy L = Niehammer, ADB, Pani, Strand, CCT, Narva	M = BEAG (H) A = Agolotechnic (H) LS = REFLEX (H)	
ERKEL SZÍNHÁZ H-1081 Budapest, Kőrösi Sándor tér 4 (361) 1330108		1911 - (1990)	2188		●	●		with Opera	C = Spaceton LC200 (H) L = ADB, Pani, Strand, Adelschöffer	M = UNIEL (H) A = Agolotechnic LS = REFLEX (H)	
NEMZETI SZÍNHÁZ (National Theatre) H-1077 Budapest, Nevezi Sándor tér 4 (361) 1413849		1957 - 1966	671	●			○		C = Tunggram FVE 180E L = Tunggram, ADB, Pani	M = Soundcraft A = ElectroVoice LS = ElectroVoice (DigVoice system) (H) Microport = Sennheiser, Micron	Total rebuilding in 1966
VÁRSZÍNHÁZ (Castle Theatre) H-1014 Budapest, Színház utca 1-3 (361) 1738011		1787 - 1978	758 (99)	●			○	with NT	C = Tunggram 90 manual L = Tunggram, Pani, ADB	M = Soundcraft A = ElectroVoice LS = ElectroVoice (DigVoice system) (H) Microport = Sennheiser, Micron	Total rebuilding in 1978
MADÁCH SZÍNHÁZ H-1073 Budapest, Erzsébet (former Lenin) krt 29-33 (361) 1220677		1908 1953-1961	811				●		C = Spaceton LC 150 (H) (with Tunggram dimmers) L = ADB, Strand, Tunggram, Pani	M = Soundcraft 32 A = Agolotechnic (H) LS = ElectroVoice Microport = Sennheiser	
MADÁCH KAMARASZÍNHÁZ H-1075 Budapest, Malacka tér 6 (361) 1225442		1941 1979-1982	390					with MADÁCH THEATRE	C = Strand DUET II L = Strand, ADB, Pani	M = BEAG (H) A = BEAG LS = BEAG Microport = Sennheiser	
KATONA JÓZSEF SZÍNHÁZ H-1052 Budapest, Petöfi Sándor utca 6 (361) 1185599		1916 1976-1981	353	●					C = Tunggram FVE 96E L = Pani, Strand	M = BEAG PKP 18 A = BEAG LS = BEAG	Total rebuilding in 1976-1981
THÁLIA SZÍNHÁZ H-1065 Budapest, Nagymező utca 22-24 (361) 1124230		1923 - (1971)	648 (92)	●					C = Tunggram (from early 1970s) L = Tunggram, Pani	M = Soundcraft 800 A = Zenelektro (H) LS = ElectroVoice Microport = Sennheiser	
VÍGSZÍNHÁZ H-1137 Budapest, Szent István krt. 14 (361) 1119650		1895-1898 1951 (1970s)	1079 (70)	●			○		C = Tunggram FVE 193 E L = Tunggram, Pani, ADB, Narva, Strand, HMV (H)	M = Soundcraft 800 A = Agolotechnic (H) Zenelektro (H) LS = ElectroVoice, Altec	Felner and Helmer
PESTI SZÍNHÁZ H-1056 Budapest, Váci utca 9 (361) 1185255		1911 1964-1967	544	●			○	with VÍGSZÍNHÁZ	C = Tunggram FVE 96 E L = Tunggram, HMV (H), Narva	M = Polyphon (H) A = Agolotechnic (H) LS = REFLEX (H)	Total rebuilding in 1964-1967
JÓZSEF ATTILA SZÍNHÁZ H-1134 Budapest, Váci út 63 (361) 1208238		1953 1985-1988	593 (70)	●			○		C = Tunggram FVE 96 E (+ Staccato Effect) L = ADB, Tunggram, Pani	M = Soundcraft 600 2A/B/2 + Peavey 18 A = METALPLASZT ELEKTRONIKA (H) LS = ElectroVoice	
FŐVÁROSI OPERETT SZÍNHÁZ H-1065 Budapest, Nagymező utca 17 (361) 1126470		1923-1924 1966-1970	967 (86)				●		C = Tunggram FVE 127 E L = Tunggram, Pani, Strand, HMV (H)	M = Soundcraft 600 A = Agolotechnic, Twin (H) LS = OBL, ElectroVoice Microport = Sennheiser, Micron	Felner and Helmer
MIKROSKÓP SZÍNHÁZ H-1065 Budapest, Nagymező utca 22-24 (361) 1327700		1967 - (1983)	162	●					C = Tunggram FVE 64 E + Effect L = CCT, Strand (Pati), FITE, Pani	M = BEAG PKP 21 and 35 A = BEAG LS = BEAG	Political Cabaret
VIDAM SZÍNHÁZ H-1065 Budapest, Révay utca 18 (361) 1328916		About 1900 1968-1970	483 (18)	●			○		C = Zenelektro L = Pani, Strand (old types), HMV	M = Soundcraft A = LS =	
RADNÓTI MIKLÓS SZÍNHÁZ H-1063 Budapest, Nagymező utca 11 (361) 1210000		1937-1941 1973-1976	230	●					C = Tunggram Lucifer (Reduced by the staff) L = Pani, Strand, ADB, Narva, HMV (H)	M = Yamaha M16 A = Zenelektro (H) LS = REFLEX (H)	
ARANY JÁNOS SZÍNHÁZ H-1061 Budapest, Puslay Éde utca 35 (361) 1226056		1907-1909 - (1988-1990)		●			○				Youth Theatre (before finishing)
ÁLLAMI BÁBSZÍNHÁZ I H-1062 Budapest, Andrássy (former Népköztársasági út 69 (361) 1215200		- 1971-1976	356	●					C = Tunggram Manual L = Pani, Strand (from 1976)	M = BEAG PKC A = BEAG LS = BEAG	Puppet T In an old building
ÁLLAMI BÁBSZÍNHÁZ II H-1061 Budapest, Jókai tér 10 (361) 1534853		About 1928 1969-1979	223	●				with ÁLLAMI BÁBSZÍNHÁZ I	C = Tunggram FVE L = Tunggram (SOOW E27)	M = BEAG A = BEAG LS = BEAG	Puppet T
NÉPSZÍNHÁZ, JÓZSEFVÁROSI SZÍNHÁZ H-1059 Budapest, Kalich Gyula tér 6 (361) 137718		About 1930 - (1987)	333	●	○		○		C = Tunggram FVE 96E L = Tunggram, HMV	M = BEAG PKP A = BEAG LS = BEAG	Centre of a travelling company
ROCK SZÍNHÁZ H-1132 Budapest, Visegrádi utca 3 (Office) (361) 1125648									C = (H) (Individual)	M = SoundMaster A = ElectroVoice, Peavey LS = ElectroVoice Microport = Micron	Established 1980 Has no building
JÁTEKSZÍN H-1062 Budapest, Teréz (former Lenin) krt (361) 1325532		1907 (1980) 1988	278	●					C = Zenelektro (H) L = Tunggram, Pani		Has no company
ÖRÖK SZÍNHÁZ H-1088 Budapest, Vas utca 2/c (361) 1188111			337	●			●		C = Tunggram FVE 90 E L = Strand, Pani, ADB, Tunggram, HMV	M = Soundcraft A = Zenelektro LS = REFLEX	Theatre of the Theatrical High School
SZKÉNY SZÍNHÁZ H-1111 Budapest, Műgyűjtemény k/p 2 (361) 1864011/2309		- - 1970	100	●					C = Zenelektro Analogic 24 L = Tunggram, HMV (H)	M = DOLAND A = DYNACORD LS = DYNACORD	University Theatre (Technical University)
R.S.G. STÚDIÓSZÍNHÁZ H-1073 Budapest, Rumbach Sebestyén utca 9 (361) 1428578		1990	100	●			○		C = Zenelektro Analogic 24 L = Narva, Tunggram	M = UNIEL A = Zenelektro LS = REFLEX	Alternative theatre in a cellar
PINCESZÍNHÁZ H-1003 Budapest, Török Pál utca 3 (361) 1176390			99	●					C = Tunggram Manual	Old fashioned	Alternative theatre in a cellar
EGYETEMI SZÍNHÁZ H-1056 Budapest, Péter Bemáth utca 1 (361) 1183311		About 1916 About 1962 (1980)	460	●					C = Tunggram Manual L = Tunggram, HMV	M = BEAG PKP 19 A = BEAG LS = BEAG	University Theatre (University of Sciences)
MAGYAR HÖNVÉDSÉG MŰVELŐDÉSI HÁZA (MHMH) H-1406 Budapest, Néptáncos út 34 (361) 1217850		1979	480						C = RÁVISOZ Menolux 2 L = Strand	M = BEAG PKP 19 A = BEAG LS = BEAG	Has no own company Cultural Centre of The Hungarian Army
SZEVEDI NEMZETI SZÍNHÁZ H-6720 Szeged, Deák Ferenc utca 12 (36-62) 11211	(Population: 185,500)	1882-1883 1886 (after a fire) 1978-1988	699	●	●	●	○		C = Tunggram FVE 224 E L = Tunggram, Pani, ADB	M = Soundcraft A = ElectroVoice LS = ElectroVoice (DigVoice system) (H) Microport = Sennheiser	Felner and Helmer Intimate T with 368 seats in another building
PÉCSI NEMZETI SZÍNHÁZ H-7621 Pécs, Színház tér 1 (36-72) 26286	(Population: 170,200)	1895 - 1987-1990	590 (80)	●	●	●	○		C = ADB Tenor L = ADB (50%), Tunggram, Pani	M = Soundcraft A = ElectroVoice LS = ElectroVoice (DigVoice system) (H)	Intimate T with 261 seats in another building
MISKOLCI NEMZETI SZÍNHÁZ H-3525 Miskolc, Déryné utca 1 (36-46) 44711	(Population: 211,200)	1857 1956-1959 1983	785 (70)	●	○		●		C = ADB Tenor (240) 171 L = Pani, ADB, FITE	M = BEAG PKP 24 A = BEAG LS = BEAG Microport = Beyer Dynamic	Intimate T with 156 seats in another building
DEBRECENI CSOKNAY SZÍNHÁZ H-4024 Debrecen, Kosuth utca 10 (36-52) 17811	(Population: 212,300)	1862-1865 - 1978-1982	554	●	●	●			C = Tunggram FV L = Tunggram, ADB, Pani, Strand, FITE	M = BEAG PKP 18 A = BEAG LS = BEAG	Intimate T with 408 seats in another building
KISFALUDY SZÍNHÁZ H-4022 Győr, Gerék utca 34 (36-98) 12044	(Population: 129,400)	- - 1978	691 (140)	●					C = RÁVISOZ SMI 256 (H) L = Pani, Strand (old types)	M = Polyphon 20-4/E/4 (H) A = BEAG, Zenelektro LS = BEAG, REFLEX	Intimate T with 499 seats in another building
CSIKY GERGELY SZÍNHÁZ H-7400 Kaposvár, Rákóczi tér 1 (36-82) 20833	(Population: 71,800)	1909-1911 Early 1990s 1986-1988	548 (65)	●			●		C = Tunggram FVE L = Tunggram, Pani, ADB, Strand	M = BEAG PKC 115 A = BEAG LS = BEAG	
GÁRDONYI GÉZA SZÍNHÁZ H-3300 Egér, 60-as emelet (former Lenin) tér 11 (36-36) 11984	(Population: 62,000)	1904 1960-1964 (1982-1983)	549 (76)	●			●		C = Tunggram FVE 128 E L = Tunggram, ADB, Pani	M = Polyphon (H) A = Zenelektro (H) LS = REFLEX (H)	
NEVEZI SÁNDOR SZÍNHÁZ H-6900 Zalakeresztúr, November 7. tér (36-92) 14405	(Population: 62,300)	1983	464 (80)	●			●		C = Tunggram FVE 90 E L = Tunggram, Narva, Pani, ADB	M = BEAG A = Robson LS = Robson	

THEATRE	POPULATION OF BUDAPEST 2,105,800	BUILT ORIGINALLY RECONSTRUCTED (REFURBISHED)	SEATS (STUDIO)	COMPANY				STAFF (TECHNICAL)	LIGHTING C = CONTROLS L = LANTERNS (H) = HUNGARIAN	SOUND M = MIXER A = AMPLIFIERS LS = LOUDSPEAKERS (H) = HUNGARIAN	NOTES
				DRAMA	OPERA	BALLET	MUSICAL COMEDY				
JÓKAI SZÍNHÁZ H-5600 Békéscsaba, Tanácskörtársaság útja 1-3 (36-66) 26777 (Population: 67,700)	1878-1879 1912-1913 (1990)	435 (100)	•				117 (53)	C = Tungram FVE 98 E and Zenelektro effect L = Tungram, Poni, FITE, Altman, Narva	M = BEAG, A = BEAG and Zenelektro LS = REFLEX, Dynacord		
KATONA JÓZSEF SZÍNHÁZ H-6000 Kecskemét, Katona József tér 5 (36-76) 21000 (Population: 102,600)	1895 1984-1988	598 (126)	•				211 (98)	C = Tungram FVE 98 E L = Tungram, Narva, HMV (H)	M = BEAG PVP 21 A - BEAG LS = BEAG	Feller and Helmer	
MÓRICZ ZSIGMOND SZÍNHÁZ H-4400 Nyíregyháza, Besenyey tér 13 (36-42) 32481 (Population: 114,200)	1893-1894 1923 1955-1960 (1980-1981)	495 (80)	•				153 (91)	C = Tungram 90 Manual L = Tungram, Poni, Strand (Cadenza)	M = Allen HIT 24/4/2 A = Agatech (H) LS = REFLEX (H)		
PETŐFI SZÍNHÁZ H-8200 Veszprém, Dózsa György út 2 (36-80) 25444 (Population: 64,000)	1907-1908 1984-1988	449 (80)	•				195 (78)	C = Tungram FVE 98 E L = Tungram, Poni	M = METÁLPASZT ELEKTRONIK (H) A = METÁLPASZT ELEKTRONIK (H) LS = ElectroVoice		
SZIGLIGETI SZÍNHÁZ H-5000 Szolnok, Lenin park 1 (36-56) 42633 (Population: 78,400)	1909-1912 1927 1989-1991	575 (82)	•				180 (84)	C = ADB Tenor L = ADB (50%), Poni, Tungram		Under reconstruction	
VÖRÖSMÁRTY SZÍNHÁZ H-8000 Szekesfehervár, Mártius 15. utca 10 (36-22) 11296 (Population: 109,000)	1874 1962 (1983)	677						C = Tungram 90 Manual L = Tungram, HMV, Altman	M = Zenelektro A = Agatech LS = Zeck	Has no own company	
PETŐFI SZÍNHÁZ H-9400 Sopron, Petőfi tér 1 (36-99) 32261 (Population: 55,300)	1908-1909 1970-1975	488						C = Tungram 98 Manual L = Tungram, HMV, Altman	M = AEG A = AEG LS = AEG	Has no own company	
SZÍNHÁZ ÉS MŰVELŐDÉSI HÁZ H-4700 Mátészalka, Szabadság tér 2 718 (Population: 9,300)	1987-1988	480						C = Tungram FVE 72 E L = Tungram, HMV (H)	M = BEAG A = BEAG LS = BEAG	Has no own company	

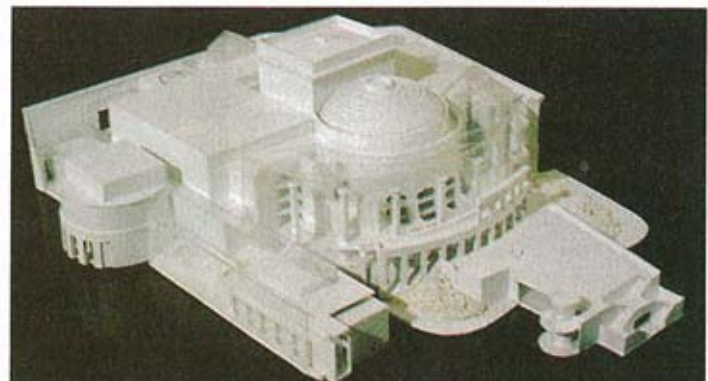
BUDAPEST: Hungarian State Opera House

The Hungarian State Opera House in Budapest was opened in 1884. Architect was Miklós Ybl and seating capacity 1175 with a horseshoe-shaped auditorium with boxes on three levels and a gallery. It has had various renovations over the years and it was closed in 1980 for major reconstruction, re-opening in 1984 on its centenary.

Of historical note, the stage machinery designed by Asphaleia of Vienna was the first-ever operational system constructed of iron and moved by hydraulic power. It finished its working life in 1970. At the same time the flying system proved defective and was replaced by electric hoists. After 1984 and its re-opening, the new stage and flying systems, imported from the GDR, did not live up to expectations and in March 1987, the small cooperative of Sziki was commissioned to rebuild the flying system (shown above) which is now operating satisfactorily. The lighting control system is a Strand Galaxy.



Cover of a recent issue of SZÍNHÁZTECHNIKAI FÓRUM showing newly installed machinery and control system and the State Opera House.



Above (from top): first, second and third prize projects for a new National Theatre building in Budapest.

CULTURAL CENTRES IN BUDAPEST	SEATS	THEATRE	CLASSICAL MUSIC	JAZZ	POP/ROCK	FOLK	DISCO
● REGULARLY ○ RARELY							
I. KERÜLETI MŰVELŐDÉSI HÁZ H-1011 Bem köz. 6 (361) 1150807	170	○		●	●	●	
MARCIZBÁNYI MŰVELŐDÉSI KÖZPONT H-1022 Marciánypark tér 5/A (361) 1151208	400	●	●	○		●	
ÓBUDAI IFJÚSÁGI KÖZPONT H-1032 San Marco utca 81 (361) 1887370	325	●	●	●		●	
BÉKÁSMEGYERI KÖZÖSSÉGI HÁZ H-1038 Csehbánya tér 5 (361) 1802433	240	●	●	●		●	
ADY ENDRE MŰVELŐDÉSI KÖZPONT H-1043 Tavasz utca 4 (361) 1895251	500		●		●	●	●
ÚJPESTI IFJÚSÁGI HÁZ H-1042 Bajcsy-Zsilinszky út 17-19 (361) 1891283	285		●		●	●	●
KÁPOSZTÁSMEGYERI ÁLTALÁNOS MŰVELŐDÉSI KÖZPONT H-1048 Hajó utca 2/B (361) 1808188	200	●	●			●	
BELVÁROSI MŰVELŐDÉSI HÁZ H-1056 Molnár utca 9 (361) 1175928	80			●		●	
FÁKLYA KLUB H-1067 Csengery utca 68 (361) 1324560	286	●	●			●	
ALMÁSSY TÉRI SZABADIÓ KÖZPONT H-1077 Almássy tér 6 (361) 1424144	360	●	○	○	●	●	
KÖSZTÖLÁNYSI MŰVELŐDÉSI HÁZ H-1085 Török Pál utca 3 (361) 1180193	150			●		●	
PATAKY ISTVÁN MŰVELŐDÉSI KÖZPONT H-1022 Pataky tér 7-16 (361) 1570712	480	●	●				
KÖRNYAI GYERMEK ÉS IFJÚSÁGI SZABADIÓ KÖZPONT H-1035 Eszter utca 1 (361) 1573090	350	●				●	
LÁGYMÁNYSI KÖZÖSSÉGI HÁZ H-1107 Károlyi utca 17 (361) 1864627	300	○		●		●	
BUDAPESTI MŰVELŐDÉSI KÖZPONT H-1118 Szekessy Árpád út 55 (361) 1889444	200	●	○	○	●	●	
SZAKSZERVEZETEK FŐVÁROSI MŰVELŐDÉSI HÁZA H-1119 Fehérvári út 47 (361) 1811060	488	●	○	○	●	●	
MOM MŰVELŐDÉSI HÁZ H-1124 Czóbel utca 18 (361) 1752648	757	●	○	○	●	●	
JÓZSEF ATTILA MŰVELŐDÉSI KÖZPONT H-1131 József Attila tér 4 (361) 1208278	380	●	○		●	●	●
PETŐFI CSARNOK H-1148 Városliget, Zichy M. utca 14 (361) 1224434	830 (2900)						
KASSÁK KLUB H-1145 Úrszói utca 57 (361) 2513689	100			●			
RÓZSA MŰVELŐDÉSI HÁZ H-1181 Városház utca 1-3 (361) 1787507	335	●			○		
CSILI MŰVELŐDÉSI KÖZPONT H-1201 Nagy György L. utca 4-6 (361) 1278630	600	●	○		●	●	
RADNÓTI MIKLÓS MŰVELŐDÉSI HÁZ H-1214 Vénusz utca 2 (361) 1583774	220		○		●	●	●
XXII KERÜLETI MŰVELŐDÉSI KÖZPONT H-1222 Nagyföldényi út 35 (361) 2265317	480	●	●				

CONCERT HALLS IN BUDAPEST	SEATS	NOTE
ZENEAKADÉMIA - ACADEMY OF MUSIC H-1061 Lazi Ferenc tér 8 (361) 141 4786	1200	SMALL HALL 430
RÉGI ZENEAKADÉMIA - OLD ACADEMY OF MUSIC H-1064 Völgymező utca 35 (361) 122 9804	150	
PESTI VIGADÓ H-1051 Vigadó tér 1 (361) 118 4127	680	CHAMBER ROOM 320
BUDAPEST KONGRESSZUSI KÖZPONT - BUDAPEST CONVENTION CENTRE H-1123 Jägerló út 1-3 (361) 188 8588	1823	
BARTÓK EMLÉKHÁZ - BARTÓK MEMORIAL BUILDING H-1025 Csátsán utca 29 (361) 178 2100	80	

NIGHT LIFE IN BUDAPEST	SEATS	NOTE
BÉKE ORFEUM H-1067 Teréz krt. 97 (361) 132 3300	160	
MAXIM VARIÉTÉ H-1072 Akácfa utca 3 (361) 142 0145	200	
MOULIN ROUGE H-1065 Nagymező utca 17 (361) 112 4482	150	
SAVÓY H-1061 Andrássy út 48 (361) 153 1258	108	
THERMAL STAR NIGHT CLUB H-1138 Hotel Thermal Margitsziget (361) 132 1100	200	
HOROSZKÓP NIGHT CLUB H-1013 Hotel Buda Penta, Kristalina krt. 41-43 (361) 156 6333	100	

OPEN AIR THEATRES IN BUDAPEST	SEATS	NOTE
MARGITSZIGET - MARGARET ISLAND H-1138 Margitsziget (361) 111 8468	2994	
BUDAI PARKSZÍNHÁZ H-1112 Kosztolányi Dezső tér (361) 188 9916	2318	
VÁROSMAJORI SZÍNHÁZ H-1122 Városmajor (361) 175 5822		DOES NOT EXIST
HILTON SZÁLLÓ, DOMINIKÁNUS UDVAR DOMINICAN CHURCHYARD OF HOTEL HILTON H-1014 Vissz Anórák tér 1/3 (361) 175 1060	338	
ZICHY KASTÉLY H-1033 Fő tér 1 (361) 180 4920		
KÖRSZÍNHÁZ H-1146 Városliget (361) 122 3858	820	SUMMER THEATRE IN A PAVILION
HILD UDVAR H-1027 Frankel László út 17/19 (361) 115 4680	778	
KARMELETA KÖZÖSSÉGI UDVARA H-1014 Színház utca 1-3 (361) 175 8011		COURTYARD OF THE VÁROSHÁZ

OTHER VENUES	SEATS	NOTE
PLANETÁRIUM/LÉZER SZÍNHÁZ LASER THEATRE IN THE PLANETARIUM H-1101 Napfénytér (361) 134 1164	420	MULTIMEDIA SHOWS
BUDAPEST SPORTCSARNOK - BUDAPEST SPORT HALL H-1148 Istvánmező út 1/3 (361) 251 1222	12,000	ROCK CONCERTS
FŐVÁROSI NADYKIRKUSZ H-1146 Városliget Alkotók krt. 7 (361) 122 9630	1,780	CIRCUS

Tungram – Hungary's own lighting company

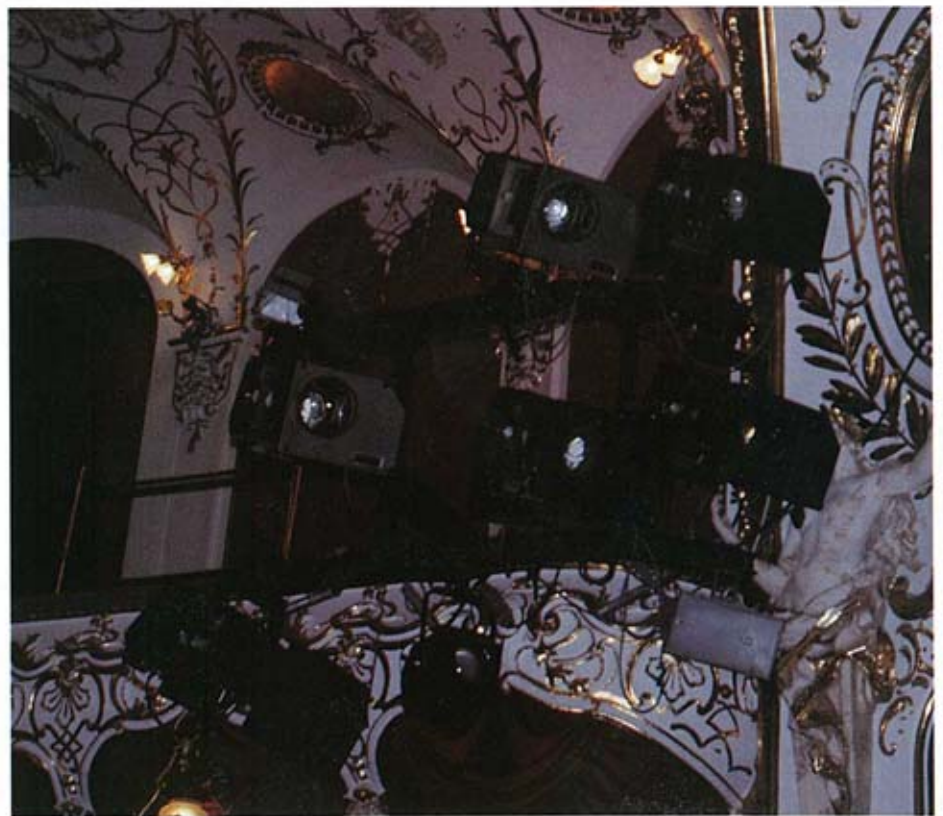
Tungram was one of the first companies in the world to manufacture electric light sources, with many innovative introductions to its credit over the years. It was established in 1896 and now has 20,000 employees.

In March this year, General Electric of the USA purchased a majority of the shares when the Hungarian government invited investment from the West. Most of Hungary's theatres have Tungram equipment in both control and luminaires and last year the company installed 30 systems: 15 within the country and the remainder within the former eastern bloc, the majority in Czechoslovakia. They are now moving into the discotheque area in conjunction with other business. Tungram has offices in over 30 countries in five continents.

Tungram and Ludwig Pani

A common sight in Hungarian theatres is a cluster of Tungram-Pani lighting units, many with motorised colour changers. Reflecting the links with the past when the countries of Austria and Hungary were part of the same empire, the Vienna-based Ludwig Pani organisation has had a strong presence in Hungary for many years.

In the later sixties Pani was invited to participate at the national theatre exhibitions of Hungarian theatre professionals to show their latest equipment and Austrian stage lighting methods. The HV 650 and HV 2000 spotlight series were soon manufactured in line with Pani plans and drawings and this



A cluster of Tungram/Pani units at the Katona József Theatre, Kecskemet.

arrangement allowed Pani to export projectors and followspots together with their whole spotlight range and also Strand equipment from the UK. This arrangement has continued through the intervening years.

Hermann Sorger of Ludwig Pani told L+S that although the iron curtain has disappeared the closeness of the countries' capital cities (they are only 260km apart) offers excellent opportunities for the future.

AN AVITEC OFFERING, WITH RICE ON THE SIDE

Tony Gottelier

I have just one piece of advice for those intrepid travellers, who like myself at the time, are intent upon driving to Hull for an evening's entertainment. Don't do it on a Friday night and don't expect to find Hull on a map, or on Autoroute.

For Hull only exists on road signs, everywhere else it goes by the grander name of Kingston-upon-Hull (as in Hull and Kingston Rovers, the local rugby league side). To confuse matters even further, the two places apparently sit on opposite sides of the Humber estuary and have only fairly recently been joined together in wholly gridlock by the famous suspension bridge. So, how one came to be 'upon' the other remains one of life's little mysteries.

Hull, as I shall continue to refer to the place from now on, is a grim monument to the aftermath of the collapse of the shipbuilding industry in the North East, with unemployment amongst the highest in the land as the result. The local paper is full of sad tales of the local youth trapped inescapably in the jobless maze — surely the downside of Thatcher's post industrial revolution.

Yet, there is another side to this city of sooted Victorian back-to-backs, which is found in evidence that the enterprise culture is getting to grips with these problems and that out of this may emerge, one day, a more dynamic and exciting environment. Witness what has already happened to the old quays

and associated warehouses. Something more appealing and more attractive to tourists than even some of London Dockland's best efforts.

Take, for example, the hotel in which we stayed (£25 for a large room with bath!). The Waterfront Hotel, is a stone and timber converted warehouse and very nicely done. It has its own successful restaurant in the basement and a very popular wine bar semi-detached. On Friday night there was a queue of young people round the block from eight o'clock and the door required supervision to handle the crush. So things can't be all bad.

And according to Leisure Week, there are no less than five new venues opening in Hull this autumn alone: proof beyond all doubt of the validity of the suspicion that, when times are hard, Northerners carry on spending, at least, when it comes to drinking. They had better, or a few people are gonna catch a cold! A town full of Hull and Kingston ravers?

It was for just one such new venue that I had been enticed to the wild and woolly wastes of Humberside on a drizzly October evening. Studio Circus is the result of an unlikely union between an ex-synagogue and local property entrepreneur Stewart Dixon, a catharsis which has yielded a significant place of worship at the altar of pleasure. And its presbytery is a feeder fun bar called Sound City. Be advised, only the clumsy choice of nomenclature conceals the quality of the interiors of these two 1300 and 400 capacity joints.

Straddling Anne Street, on the edge of the erstwhile red-light district (as erstwhile as no less than five ladies of the night were spotted on the three minute journey by car between main road and the club; well at least some gainful employment still exists thereabouts) the twin venture was not realised without a struggle. Tales of planning-do and pitch battles with First Leisure are of less interest to L+SI readers than the fact that Dixon had a less than rewarding experience at the hands of his original lighting designers. It is a serious matter for the rest of us in this unlikely profession that a rare client, who was prepared to entertain the employment of a lighting designer, should be left with a jaundiced view of the art. Happily, the in-house service provided by Avitec seems to have saved the day in the final analysis, although this in no way gets the rest of us off the hook. Clients should not have to rely on suppliers for the correct design advice, or there is no validity in independent advice. So-called designers who cannot deliver the goods, should pack their bags and find another pool to fish in, rather than spoiling the water for the rest.

Nevertheless, their failure was Avitec's gain, and there is no doubt that they made the most of it. Indeed through the skill of a young man, and this has to be emphasised as he reminded me of my fast fading youth in a previous article and, to add insult to injury, he has since been pictured elsewhere in receipt



Nuclear fusion. An abstract view of Rice's sci-fi silos.

Photos: Vincent Rice

of 'fatherly advice' of which more later, called Vincent Rice they may even have achieved something of substance. So it is a little sad to record that this first lighting (and sound?) design by Vince, the result of years of frustration as a lighting operator, may also be his apotheosis as he has swiftly moved on to become sales manager of Xylo, the award winning video systems people.

In any event, his scheme for the ex-eglise was certainly a refreshing solution to the client's brief, which was problematic in that it required that the lights form a link between the old viewing gallery and the ground, despite the absence of a load bearing ceiling. So, suspended from the intervening balcony floor are the Trilite constructions reminiscent of missile-silos, or like some science fiction nuclear reactor, emphasised by neon rings stacked to form coiled springs. Immediately, I was reminded of Terry Gilam's Kafkaesque movie *Brasil*, to which Rice admits to being partial, although the neon hoops are fast becoming an Avitec icon. Remember the Hammy Pally ascending columns?

While the neon yielded continuous colour sequencing above and below the balcony line, 16 of Avitec's new Litemovers (yes, another waggling mirror) mounted on the silos, provided multi-level animation. For colour washes and sequencing, several Lightwave Research ColorPros were employed, the last of the line for Avitec, who have subsequently ceded the distribution to Lightfactor, under protest.

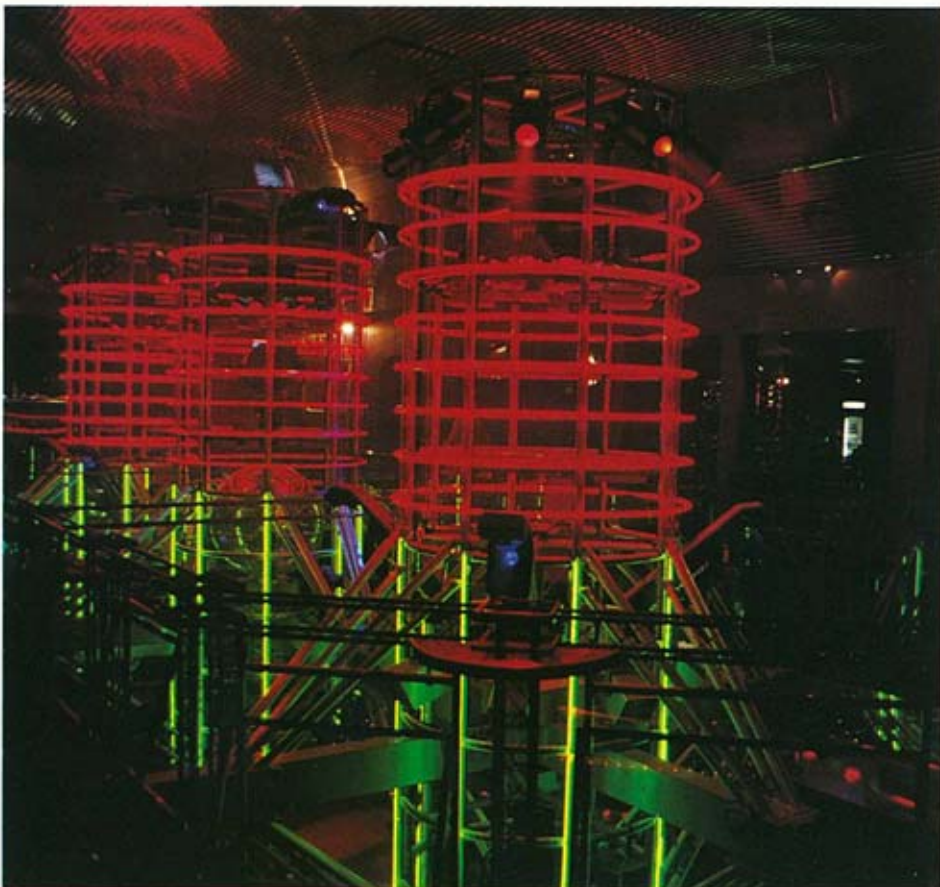
Dedicated directional lighting onto the dance floor was provided by nearly 200 halogen pinspots, with the circular structures giving an ideal home for such devices as Kremesa helicopters, 'dentist' lights and Tangos. And to blow them all away, no less than 16 Optikinetics Superstrobes. So, while the structures themselves don't move, they lurk in sinister suspended animation above the dance area, this impressive array of lighting equipment creates all the movement which could possibly be required in what is really quite a tight space and successfully achieves this in such a way as to emphasise the three dimensional quality of the aluminium shapes forged by the designer.

Any negatives? Well Rice admits to personal doubts as to the wisdom of Avitec's policy which eschews the use of centralised cueing and which has resulted, in this instance, in the active use of no less than ten different controllers. This clash of cultures comes from Vince's prior experience as a lighting operator where he learned the benefits of using an Oska in such a multichannel set-up, as against Paul Dodds' predilection for frenetic hands-on production. Anybody who has any doubts about the effectiveness of the latter in Paul's hands, hasn't yet seen the maestro at work (as witnessed at LDI last week, where he was awarded best light show for his interpretation of music and light). The man's a virtuoso of the lighting keyboard. But the point is, how many more are there like him out there? Answer: very few. So, while Paul can make it all look great on opening night what happens afterwards? We all know the answer, skilled ambidextrous individuals with the stamina to withstand a six hour arm twisting marathon are in short supply, whereas integrated microprocessor-based controllers can give the closest interpretation of the designer's cues night after night in almost anybody's hands.

As Vincent Rice says: "To programme a



Bottoms up! What you see from the dance floor.



The iconoclastic neon rings: shades of Hammy Pally?

simple co-ordinated effect on the Studio Circus system requires the knowledge of up to six different lighting protocols and the arms of an octopus." As we know, such amphibians cannot survive on dry land.

Moving along swiftly to the sound system, no complaints here at all. Although Vince had gone to Avitec as a sound designer, and his role was reversed in Paul's absence to lighting design, I heard the input of Tony Kingsley in the audio system. Based on Cerwin-Vega B119s and D32Cs for thump and voice and JBL2404s for the sizzle, the dance floor system, with sub-bass below the stage, certainly had them jumping. While the background system, carefully arranged according to the required angle of dispersion using Ramsa A200s and A70S, allowed plenty

of room for reasonable conversation within reach of the dance floor. Indeed without measuring, one had the impression that this was a system which would satisfy the new regs and still do the job intended.

So, to close with the aforementioned fatherly advice. For those of you who are curious to know what I was saying to Vince, it was: "Never use green washes in a discotheque, it makes the people look sick!" Having got that little tease out of the way, I feel sure that Vince's still untried, but evident, skills will be a loss to the lighting industry and a substantial gain to video. It all goes to show that despite extreme youth and irreverence, talent wins through every time. (Personal note: Vince, can we call a truce on the age front now?).

An airtight case for ACR

THE MATERIAL FACTS

CASE NO: SPECTRON 3

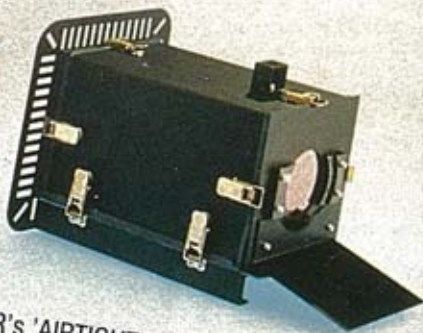
The stylish Spectron 3 from ACR Switzerland offers intelligent light without the 'wagging mirror'! This provides a markedly different and pleasing effect, and the housing of all optics, gobos and colours in ACR's patented sealed 'Optical Clean Room' gives a consistency of performance that is unmatched by any competing product.

Considerable attention has been paid to ensuring long term reliability, and the superb optics give a precise beam coupled with optimum beam output from both lamp options. Beam movement is 180° in both planes, another significant advantage over mirror driven devices, and six superb dichroic colours plus white are available, as are six gobos.

The Spectron Processor offers comprehensive versatile control, directly addressing up to sixteen heads, with extension to forty eight possible.

Spectron 3- the cost effective alternative to the wagging mirror - it's an airtight case.

Spectron head options:
HTI 250 lamp version
ENX 82v 360w lamp version



ACR's 'AIRTIGHT' OPTICAL CLEAN ROOM



AVITEC

THE ATMOSPHERE CREATORS

ORLANDO'S TOURING THEME SHOW

Lighting Dimensions International goes to the capital of the Theme Park Industry

Tony Gottelier sets the Scene
John Offord compiles the News

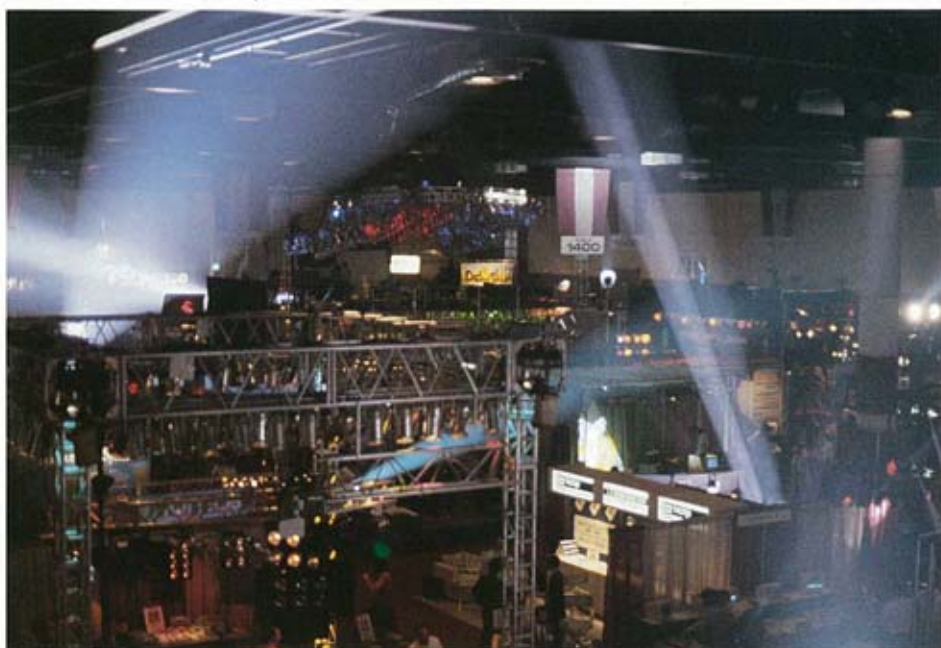
Orlando is the place where the art of the possible reigns supreme over the incredulous and where achieving the impossible is the state-of-the-art.

It starts en route from the airport, where to the eternal shame of Theme Park City USA, and omission on Disney's otherwise immaculate implementation, there are no personal baggage carts. Subsequently you arrive at the first of two toll gates on the express way. Immediately you are made aware that, despite all efforts to persuade to the contrary, these are not the Pearly Gates and that paradise may not exactly lie beyond. Notices appended thereto proclaim, in 60 point Bodini Bold, exactly what the procedure is, if and when, one is apprehended by the police while in the progress of committing a heist. One: 'When instructed by the police officer to do so, you must drop your weapon.' and so on . . . Having just come from NY, where we had become the filling in a cop-felon sandwich while sitting in a stationary cab, and where large rewards are being offered on the back of City buses for those with the temerity to shop a cop-killer, this all had a rather hollow ring to it.

Next, to the convention hotel, where, we had been warned in advance, there was a managerial treat awaiting us with which even the famous Diving Horse of Atlantic City could not compare. (I know all about the latter unfortunate animal, since losing my shirt a few summers ago attempting to compete with its hypnotic ability to draw an audience, by providing an hourly laser spectacular in a stadium on the same pier. So anything, even the knackers yard, which did the creature down was going to be OK with me).

The story goes that the owner of the Peabody, for so the place is called, was a keen hunter. Of ducks to be precise. Unwilling to rely on wooden replicas and simulated quacking, the bloodthirsty hotelier used live decoys, that is slightly more fortunate ducks with clipped wings. And so much notoriety did these birds achieve in the hotel that they fast became a tourist attraction. So every day at 11 o'clock the wretched creatures are marched from the elevator, along a red carpet to the fountain in the middle of the lobby, where they spend a happy few hours paddling about and making rude noises at the guests. Come 5 o'clock, the entire process is reversed. And God help the unfortunate who produces guano on the carpet!

This performance of such flabbergasting banality



The 'quiet' hall at LDI 90, Orlando, Florida.

is so successful that the duck emblem is firmly planted on all hotel literature, the building itself is similarly emblazoned, the restaurant is calle Dux (sic), the butters are moulded into ducky shapes and everyone locally, with typical American wit, refers to the place as the Duck House. But no toy ducks in my bath! What a shame.

And so, following dinner with those honorary Rolling Stones Mark Fisher and Jonathan Park (no duck on the menu, thank God) and a good night's sleep, to the splendid Orange County Convention Centre, where I was to mediate the sequel to the control protocol discussion started in London at PLASA's Light and Sound Show in September. As this will be the subject of a full report and in-depth piece in the January issue of L+SI, and I don't wish to pre-empt that, I shall confine myself to the more amusing bits.

Unlike the PLASA session, it was decided to eliminate formal presentations from the platform and to turn the whole period over to a debate



Orange County Convention Centre.



The Control Protocol seminar with Tony Gottelier (right) in the chair.



LDI director Pat MacKay gets a pre-award briefing.

involving members of the 400-strong audience. Of course, Americans are far more receptive to this kind of thing than we reticent Brits and, in no time at all, everyone was getting in on the act. Strand's SMX protocol came in for a great deal of flack. Described variously as 'dogmeat' by one panelist, perhaps he is more up-to-date with the diving horse saga than I, and a 600lb gorilla by another, (Jesus, the Yanks have an animal analogy for everything), it was resolutely defended by Strand's Dave Bertenshaw. The revelation that the SMX document was not the final be-all-and-end-all was shock to everyone, especially when it was made known that issue two was in the pipe.

However, a consensus seemed to have been achieved following definition by Charlie Richmond of the current status of the MIDI standard, which was generally considered ideal for desk-to-desk communication, and Bertenshaw's promise to seriously consider taking MIDI on board the SMX transporter. One advantage of SMX not yet having been set in stone, perhaps.

A previous suggestion that DMX could be tweaked to perform its existing role somewhat better, also seems to have been well received as it's certainly not going to go away. And a suggestion from the chair that PLASA should play an active role in resolving these issues in consultation with US and other non-UK bodies was well received. If you are still confused over the roles these various acronyms play, look out for a major article in next month's issue when all will be revealed.

The workshops at LDI were extremely well organised as always by Ellen Lampert and Paula Harris, and extraordinarily well attended throughout. Subjects as disparate as 'Unusual solutions to mind boggling problems', with focus on Mirage in Las Vegas, and 'Moving lights on parade', were covered. The latter, billed as a shoot-out, turned into a minor disappointment when three of the major protagonists refused to participate. Other sessions received the benefit of Fisher Park's great Wall and Steel Wheels experiences. Still others went behind the scenes at Disney-MGM and Universal to see how their own particular brands of fantasy were achieved.

And these same locations became the focus of the evening activities, which play such an essential role in making these shows successful industry social events. At the High End Systems party on the Universal lot on the first night, at which we had our first taste of simulated space travel on the Hanna Barbera 'ride', in cars which rocked and yawed in sync with the high speed graphics animation on a giant screen, but actually went nowhere in a forward sense at all. Nevertheless, it didn't do much for my recently consumed pizza, I can tell you.

It was also our first experience of meeting up with the essential Disney-type experience — the 'real life' characters. Of course, at first you all stand around casting tribal assertions at the mental capacity of the average Yank. Grown adults talking to legless pygmies dressed up as cartoon characters! But by night two, when we had moved on to the Disney-MGM Studios courtesy of a splendid party organised by Pat McKay, publisher of Lighting Dimensions and LDI's sponsors, we were all at it. I saw several grown men of European extraction hugely enjoying opening painted boxes which generated sound effects as soon as the lid was lifted. Belches, farts and farmyard noises, all were relished by all, including myself.

I was also greatly impressed by Disney's attempt to capture the night business with its hugely vaulted Paradise Island. Nobody in Orlando could be unaware of its existence, brahly proclaimed from nightfall by a vast battery of tracking Xenons stretching towards the heavens. I had often wondered what happens to the apparent over-production of such items in the US, so now I know. Paradise Island is a collection of venues, cheek-by-jowl, including an open air stage, three discos, two of which were excellent, and a selection of themed bars, eateries and shops. Where every night is proclaimed New Year's Eve, and every night at midnight there are fireworks and dancing in the streets. What I found extraordinary was, that considering all were built from greenfield sites within the last two years, the authenticity of the atmosphere in each area was truly astounding.



Award winner: Coherent Laser.

You could almost eat it! I hugely enjoyed it and would recommend the Adventurer's Club, Mannequins and The Cage to anybody.

Enough of the frivolity and back to the serious work at hand, what about the exhibition side of this now established show? Well yes, serious enough. There were 210 exhibitors this year, and a clutch of highly innovative products to show for it. Among those which caught my eye, and not previously shown at the Light & Sound Show, or Rimini, or refined since then, together with some other highlights of the show were: A programmable neon transformer which flows the gas along a neon tube for up to 65 feet from Bertonee of Canada, represented by TEC of Jacksonville; Lytemode's Tivoli competitor, which uses the simple technique of notching a tube to generate high-lit points at set intervals; the Technasound music reactive video system; Lightwave Research's much improved Emulator and their excellent looking 1200MSR Intellabeams; Laser Media's 3-D demo which certainly works impressively now; John Lindsell and Carl Dodds' new show for Clay Paky; only marginally eclipsed by Paul Dodds hands-on craft, for which he was deservedly rewarded later on; Dinner with Ellen Lampert; Ron Bourque looking fit again after his pacemaker operation in London; Beaming Bob Dagger and his Harlequin booth (if only because

he promised me a drink if I gave him a mention).

British interests were well served by the DTI group of stands and Elektralite, who seem to have formed a UK trading group all on their own.

LDI came under a lot of flack for promulgating the idea of introducing a limited number of awards this year. The problem being that there is every chance of upsetting far more people than you please. In the event, this all seemed to go off rather well and, apart from the aforementioned, awards were handed out to Kleigl for their MOSFET dimmer; Coherent for the Purelight mixed gas laser, which has proved such a hit in Laser Grafix' hands in the UK; ex-pat Brit, now Canadian resident, Jonathan Deans for sound innovation, and Coemar for best stand design. Hoffend were awarded 'Gizmo of the show' for their extraordinary self-erecting column, which unfolds from a portable base and was previewed last year.

So there you have it, apart from the mandatory visit to EPCOT, which was, at the same time, exciting and extremely boring dependent on where you were at the time, a potential victim of its own technological innovation if ever there was one, it was now time to wing one's way out, in order to avoid premature servings of traditional Yuletide fare in aid of Thanksgiving Day, spoiling our own annual anticipation of the seasonal feast to come.

Tony Gottelier



Silverbeam into Production

Phoebus Manufacturing of San Francisco gave pride of place to their 4000W Silverbeam searchlight, and director John Tadesco is pictured above with the unit on demo at LDI. It comes as a single head unit with a 1000W quartz single head static unit and a 1K Silverbeam PSL9 searchlight. Six of these units have just been delivered to Kurosawa film studios in Japan. Phoebus products are distributed in the UK by Arri GB, in Denmark by Kunelco, in Switzerland by Power Light of Basle, and in Germany by Rock Light. The company is inviting distributor enquiries from other Countries.

US: 415 550-1177



Thomas debut Par 64 9 Lite Unit

With a 9000W capacity, the new Thomas 9 Lite unit affords maximum output in minimum space. Each lamp is independently mounted for focusing and can be wired to separate switches. On stand at Orlando were Michael Carl and Frances Thompson from the American operation based in Tennessee and John Hickinbotham from the UK. The 6 Lite unit can also be seen in picture immediately above the 9 Lite.

US: 615 690-5397 UK: 0386-553002



Roboshop Dry Fogger

Roboshop is one of those highly specialised special effect and entertainment technology outfits that thrives on producing amazing effects at theme parks, right through from sculpting and model making to fog, projection and water technology. Of special interest to the performance industry was their Dry Fogger. The output is composed entirely from nitrogen and water vapour, with no chemicals, oils or alcohol. Two versions are available: stationary units for permanent installations and a portable unit for touring shows.

US: 805 295-8263



Camelont Expand Worldwide

Camelont AB, the Swedish manufacturer of the highly successful Rainbow colour changer system, has announced an expansion drive into the US and Europe with the opening of a new London office. This will be headed by Michael Goldberg, who has distributed the Rainbow in the UK for the past two years, and all sales and marketing for the Rainbow range of colour changers worldwide will be centralised from London. Pictured on the Camelont stand at LDI is Magnus Anuell (centre), designer of the Rainbow system.

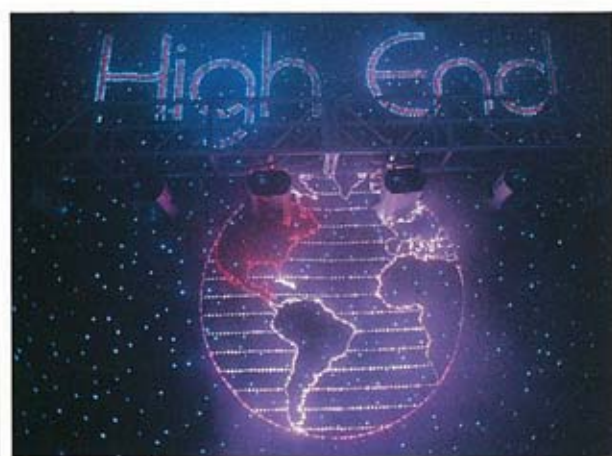
UK: 071-722 6032



Power Light Production Partners

Nicholas de Courten (right) and Felix Riva of Power Light, Basle, Switzerland came to LDI equipped with smart new promotional literature in an endeavour to make their name known amongst American designers and production companies. "We have everything available in the centre of Europe for all aspects of production, from television through to concert touring and industrial presentations," de Courten told L+SI. "Power Light's equipment list is international," he continued, "with Avo, Celco and Thomas equipment, etc. We have come to the US to meet the market and prove we can meet their requirements." Power Light made their name on the international scene with the lighting design and production for the successful 1989 Eurovision Song Contest in Lausanne.

Switzerland: 61 701-8228



RoboShop of Los Angeles, California was used for the lighting concerts, utilising liquid nitrogen combined with hot water vapour (see separate news item).

Used for controlling the lighting systems were the Lightwave Research controllers enabled by a QM-500 96 channel console courtesy of Avolites and the band U2. 12 of the F-100's were externally enabled by 12 channels from the QM-500 for variable flow presets. Additionally, a 108 channel memory console 'The Masterpiece' from Pulsar could also be employed for external enable for all the lighting systems.

The exhibit's audio system was supplied by Electro-Voice of Buchanan, Michigan. The system consisted of two MT2 cabinets for high/mid range and two MTL-4 sub woofer cabinets for low end. The system was powered by EV 7800 amplifiers.

High End Systems Inc (Austin, Texas)

Exhibit manager: Anthony Monday; Technical director: Don Pugh; Light programming: Tim Grivas; Music programming: Rocky Rodd

Equipment/Services

Truss frame and concert roof: TomCat, USA (Midland, Texas); Audio system: Electro-Voice (Buchanan, Michigan)

Liquid nitrogen fog: RoboShop (Los Angeles, California); QM-500 lighting console: Avolites; Xenon followspots: Ushio U-Tech (Tokyo, Japan)

Transportation: Stage Call (La Habra, California); Fibre optic curtain: Main-Light Industries (Wilmington, Delaware)

Intellabeam, ColorPro, Dataflash, Emulator: Lightwave Research (Austin, Texas)

US: 512 836-2242

BIGGEST STAND AT THE SHOW:

L+SI gets the technical background

High End Systems Inc. of Austin, Texas constructed a 3,500 sq ft stand consisting of a fully draped 40ft by 66ft truss frame and concert roof. Manufactured by TomCat Inc. of Midland, Texas the 2,400 square feet ceiling platform was raised to a bottom trim of 20ft by six truss pillars. The heavy duty aluminium framework supported lighting systems by Lightwave Research from angled truss sections below the superstructure. The High End Systems expanse also contained an additional 1,500 sq ft for hospitality suites and a display stand for the Viper dual beam laser system from Laser Chorus.

Making its debut on the main stage was the Intellabeam 700 HX animated moving light system from Lightwave Research. The system features a more powerful 700 watt lightsource, new selections of gobo patterns, multi coloured pattern effects and full range of dimming. 24 of the moving beam fixtures were mounted in various configurations and were a featured attraction during the choreographed lighting concerts by High End Systems programming director Tim Grivas.

A superior version of the Emulator high intensity laser simulator was also presented. 12 Emulators were horizontally flown at the stand's back wall from a 30 ft span of square truss. Displaying their enhanced pattern capabilities and vibrant colour changing, the system executed precise synchronised manoeuvres. The system's narrow beams create static and revolving shapes with user positioning and function parameters over large areas and for long throw effects.

Two 10ft x 10ft pipe frames supported 16 Color Pro and 25 Dataflash units and were hung upstage on both sides of the booth. An additional 32 Dataflashes were hung in a three-sided arrangement at the booth's centre. A 150ft long by 20ft high fibre optic curtain manufactured by MainLight Industries of Delaware enclosed the exhibit on three sides.

The custom-made 2-circuit backdrop also revealed the High End Systems logo containing over 10,000 fibre tips. Illuminated by 24 Color Pro luminaires, the fibre optic logo was able to produce individual control of letters in dual colour combinations and to outline areas of the globe logo in multi colours. High End also displayed two xenon follow spots from Ushio U-Tech which were outfitted with dichroic colour filters. 14 F-100 Performance smoke generators were used for the arena stacked vertically in upright truss units. A low flying fog effect devised by

RoboShop of Los Angeles, California was used for the lighting concerts, utilising liquid nitrogen combined with hot water vapour (see separate news item).



Solving Interface Problems

ETC (Electronic Theatre Controls, Inc.) have a wide range of interface products, and new at LDI were their 32 Out which allows conversion of 32 DMX-512 dimmer signals to Analogue, the A32 Out allows 32 channels of DMX-512 or AMX-192 dimmer signals to be converted to Analogue, and the Converter interface allows conversion from DMX-512 to AMX-192 or vice-versa. Pictured above is one of the headlines in the ETC control range, the Expression, a 250 channel control system for studio, theatre and road show use.

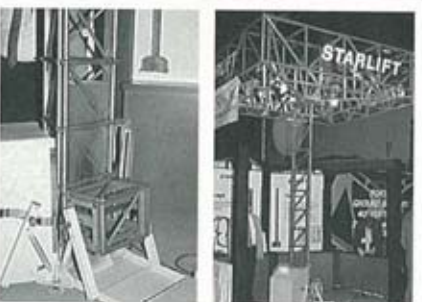
US: 608 831-4116



Command Cue from Richmond

Pictured above is Command/Cue Plus from Richmond Sound Design of Vancouver running on the Strand Lighting stand with an MX control board. "Powerful multitasking software and brand new Command/Cue microprocessor-based hardware modules work together to create the ultimate in show technology," says the blurb from Richmond. The result is centralised real time command of up to 128 independent cue lists controlling up to 16,000 devices concurrently . . .

Canada: 604 732-1234



Hoffend and Starlift Again

An expensive, but highly effective lifting system is provided by Hoffend and Sons with their Starlift, first seen (to much amazement) at LDI in Nashville last year. What you pay for is mobility, manoeuvrability and space saving. A complete system of four columns has a load capacity of 80,000 lbs and can be raised 40ft vertically. The triangular columns are composed of three separate hinged links, raised by a rack and gear system and locked together by patented interlocking hooks.

US: 716 229-5998



Stateside Special from Golden Scans

With a little help from designers and master programmers Carl Dodds (left, above) and John Lindsell, Pulsar's OSKA control produced another stunning Clay Paky Golden Scan display with an appropriately patriotic American theme on the music track. In the picture (left), Pulsar's Ken Sewell is pictured with Ralph-Jörg Wezorke of Lightpower Germany and Julio Savoldi of Clay Paky. From January 1st the three elements join forces for a new Clay Paky and Pulsar GmbH for Germany. Wezorke will be its managing director (see lead news story in L+SI November issue).

On the UK home front Ken Sewell reported an all-time sales record for Pulsar UK in October. And he has high hopes for their new Masterpiece control board as the first production comes off the line. "We'll have to share them out at first," he told L+SI.

UK: 0223-66798



Vaudeville launched by Dawn Trader

Dawn Trader from Cranleigh in Surrey, England launched two new dimmers and control units in their DT ranges, but the highlight was their new Vaudeville control desk, available in DMX/Analogue in 24 and 48 way versions. Director Clive Carley is pictured above (right) with Peter Edwards and their new product line-up.

UK: 0403-752775



Kliegl Scoop Award

Rufus Warren (left) and John Gorman, designers of the K2000 VVO dimmer, pictured with the LDI 'Product of the Year - Lighting control' award. This Kliegl Brothers unit is the first non-SCR-based solid-state dimmer to be brought to market. The use of high-power Mosfet technology makes possible a dimmer which uses no choke, is short-circuit proof, and has automatic current limiting.

US: 516 937-3900



Tomcat Inc. Win Stand Award

The LDI award for best exhibition stand design was shared by TomCat USA Inc, who teamed up with their California-based distributor TMB, and Coemar of Italy. The TomCat/TMB stand was designed by British designer Neville Lee, and held sway over the 'quiet' hall at LDI.

The structure gave TomCat ample scope to show their larger load-bearing truss components. A 50' x 20' BFT grid supported on four heavy duty towers created a mezzanine level accessible only to serious customers and fun-loving people like L+SI editor John Offord (who wrote that? ed.)

Flown above all this was a huge articulating 'butterfly' built from pre-rigged truss with a 40' wingspan, and movement of the butterfly was choreographed by Neville Lee, Dick Ollett and Alan Martin of Skjonberg Controls, Inc. who provided the computerised motor control system. Pictured above are TomCat USA boss Mitch Clark (left) with designer Neville Lee.

US: 915 686-7029



Still No 1

It's been some time now since the GE Pinspot became the world's best selling disco lamp. Since then sounds have come and gone. Discos have appeared and vanished.

But the Pinspot is still on top.

Which brings about an interesting question. In such a volatile world how can one lamp reign supreme for so long?

The answer is surprisingly simple.

It's simply that no other disco lamp comes close to matching its qualities. No other lamp is as sturdy or as easy to handle or made to the exceptionally tight tolerances that GE demands. And being a sealed beam unit is also a big advantage. Because it means that dirt, dust or smoke don't stand a chance of getting inside.

Finally, the Pinspot is an honest lamp (which is more than you can say for some). It delivers what it claims to deliver.

The GE Pinspot.

Even after all these years, it's still spot on.

The GE Pinspot, Still Spot-on.

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



USA

GE Lamps United Kingdom & Eire





The GE Pinspot

The World's No.1
Disco Lamp



THERE'S ONE THING YOU'LL APPRECIATE ABOUT OUR COLOUR CHANGERS MORE THAN THE APPLAUSE.

THE SILENCE

Ever since their launch late in 1988, Rainbow Colour Changers have been impressing lighting designers with the quietness of their operation.

Capable of scrolling through 11 different colours in one second, the Rainbow offers totally inaudible dramatic lighting effects for the theatre, opera, ballet, dance and television - anywhere silent operation, fast effects and proven reliability are imperative.

Rainbow Colour Changers have been used in

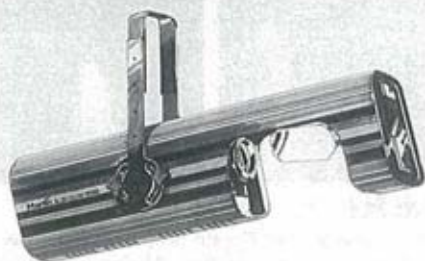
Miss Saigon, Starlight Express and M Butterfly in London and Phantom of the Opera and Les Misérables in Stockholm - in addition to many other shows and tours throughout the world.

Our Broadway debut in Aspects of Love is to be followed by other major shows later this year.

If you would like further information on the full Rainbow range including 1K, 2/5K 8 lite and light curtain contact our London office for our latest brochure - you won't believe what you don't hear.

rainbow

COLOUR CHANGERS



Roboscan on Tracomar

On possibly the noisiest but still one of the busiest stands at LDI, Tracomar of Miami were showing Martin (Denmark), Lamp (Italy) and Studio Due (Italy) products. The 'big brother' of the Roboscans, the 1020 was launched, which can be used with either an MSR 700 or MSR 1200 lamp. This unit has 2 colour wheels with 9 colours each plus white and can mix across all colours. Similarly there are 2 gobo wheels with 9 gobos each, and primary secondary ones can be mixed to create unique patterns. It has a fully adjustable motorised iris and focus and a high speed strobe facility of up to 9 flashes per second.

Also new from Martin is the Magnum 12,000 smoke generator and Smoke System for computerised control of up to 8 Martin Foggers at once.



From Lampo came the Derby and Double Derby effects units and from Studio Due a range of their current effects including Fly Rays and Top Scan. US: 305 591-5991



Lenses from Scotland

First time at LDI, John Moncrieff Limited of Perth, Scotland, were represented by Ken Rae and Jeanette Ray (pictured above). Part of the PLASA group, they displayed various items from the lens range under the 'Monax' brand name. Standard sizes are available for pebble convex and fresnels. Custom-made lenses are a speciality.

UK: 0738 22311



Astralloy take on Optec

Astralloy of Leeds announced at LDI that they will handle UK distribution of Optec products from the Ness of New Jersey. Pictured above on the Astralloy stand are (left to right): Graham Thomas, Andrew Broitman of Optec, Adrian Brooks (managing director of Astralloy) and Ronnie Rees, advertising director of Disco Mirror who shared Astralloy's stand. UK: (0532) 465331

New from the Meteor Armoury

The Meteor Sound and Light Company from Madison in Alabama had numerous new club and mobile pieces, but one of the nearest innovations came in the form of a giveaway plan of the lighting effects you'd seen on demo. Note the effect, mark it off on the plan as a favourite, and (hopefully) order it next week.

There was interesting stuff with some even more interesting names, notable amongst which was a 'must see' in Meteor's 'Gatling Gun'. It has eight mirrors with sound animation of both beam movement and colour change. The beam source is a 360W MR type projection lamp through a matched lens train. Automatic control with manual override is provided in the remote control unit, plus variable audio level sensitivity.

US: 205 461-7708

Words but no Pix

Lee Colortran Inc. announced that it has decided to change its name back to **Colortran, Inc.** On stand they were showing the Prestige control system (for which there are upgrades on the 3000) and introduced the new 5/50 Series Ellipsoidals. Also new was Scene Master 60 Plus control console which has been enhanced to include up to 120 channels with 120 submasters.

Leprecon/CAE Inc. of Hamburg in Michigan announced a 'Cue Plus' for its control systems which provides expanded console memory of 1000 cues, comprehensive manual or automated colour changer control with 1000 colour scene memories, fully proportional softpatch and complete cue scripting with playback facilities (US: 313 231-9373)

Dove Systems launched three new products. TechPro is a low-price memory control with a host of facilities. Linked with it at the show was the Controlmaster Two Scene 24/Single Scene 48. This unit offers two scenes of 24 channels with AMX and DMX outputs both active at once. As more dimmers are added, the TS-24 jumps to 48 channels of single scene control with the flip of a switch. Also making its first appearance was the Dove Solid State Transformer with built-in dimmer (US: 805 541-8292)

Abstract of Leicester, England, showed a range of effects under the tutorage of Steven Watts and Dane Fleetwood. New was their Syncro Scat 100 C.W. which has an on-board A.G.C. unit and mic. The servo head mirror will move in perfect sync to the beat of music and can be linked up to the SS4 controller to make up a system (UK: 0455-823188)

Secoa had their 'Climber' — the newest innovation in rigging systems (US: 612 546-6313)

In the field of linear optics, **Lumenyte** of California had four new optics and two new illuminators. Latest is the 'Starburst'. Small cuts are spaced all along the length allowing a burst of light to shine at regular increments (US: 714 556-6655)

For your colour scrollers **Luminaire** of Hollywood make them for HMI, Xenon and Quartz fixtures. All components are modular and the all-digital system can be operated with any one of 16 basic protocols. Dousers are available as are robotics (US: 213 461-9220)

marquee AUDIO PROFESSIONAL SALES AND SYSTEMS

JBL DDA HH

YAMAHA ESS FOSTEX

Soundcraft COURT ADAMS-SMITH

RANE Drawmer SENNEHEISER

Tel: (0932) 566777 · 041 941 3785
Fax: (0932) 565861

UNUSUAL RIGGING LTD

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

4 Dalston Gardens, Stanmore Middlesex HA7 1DA
081-206 2733
Fax: 081-206 1432 Telex: 945470 Riggin G

THE PROFESSIONAL CHOICE IN LASER VISUAL EFFECTS

LaserMagic

- Stunning Beam Effects
- Animated Graphics
- Logos
- Fibre Optic Effects
- Custom Modules
- Full Colour Effects

Telephone: (0323) 890752 Fax: (0323) 898311
Unit 39, Cradle Hill Industrial Estate, Seaford, BN9 3JE

A PLASA Member



Theatre Magic's Haze-Master

The HR-3 works on the principal of 'cracking' lightweight oil and was first used on the Siegfried and Roy Show at Las Vegas in late 1989, and developed from there, with an introduction to the market at LDI. The 'machine' is a 24" cube weighing around 125lbs, with castors and extendable handle. The fluid tank holds approximately 2 pints of Nuhaze, which lasts up to approximately six hours of full operation. Theatre Magic are looking for worldwide distributors for this and their full range of products.

US: 614 459-3222



Swirling Colour from FLY

FLY of Mantova, Italy, were showing their Dream projector and 'Brain' control system, but visual attraction was in their Hydra and Midas effect units. Both units are shown above, and the spinning arms of the Hydra have endless permutations, depending on speed and colour. An indoor 'firework' display for the future?

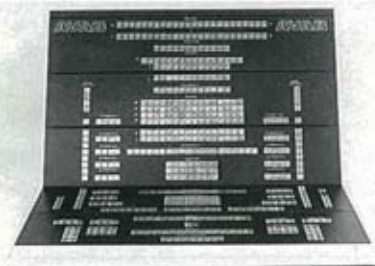
Italy: 376 372975



Electrol Introduce ProPatch

Electrol's new DMX ProPatch decodes 48 channels of DMX-512 for output at 0-10vDC Analogue. It enables assignment of any of the 512 DMX channels of any of the 48 output channels at proportional (0-100%) levels. Other introductions included a 6 channel solid state relay pack (ND1200) and a 36K, 3 channel power dimmer with load distribution (312KLD).

US: 301 247-4875



Macro Panel for Expert

The MacroPanel for AVAB's 'Expert' lighting control system is a geographical channel selector option. Pushing one key selects the corresponding channel in the Expert, and selected channels are indicated by a green LED in the button. Actual light on stage is indicated by a red LED in the button. A highlight of the system is the possibility of using every key as a Macro key. Further news released is confirmation that MIDI is now fully operational and a track ball available for moving lights — both additional 'Expert' features.

Sweden: 31-179240 US: 415 421-3562



Altman's Explorer

Universe Stage Lighting of New York had Altman's Explorer on demo, which utilises a 1200 HMI lamp, and two adjustable lenses giving variable beam range. Spot focus is 5.7" and flood focus 7.0". Other equipment on the stand included the Robo Search, shown left in the picture above.

US: 212 246 0597



The Short Option from Uni-Par

Uni-Par, the guys with the plastic Parcans, have come up with a short option: their UP-1 and UP-2 units are now available in a short version. Being lighter and smaller they make for great floor lights, and are easier for the mobile DJ to handle. Also recently introduced is their Super 2. It involves a 'Super Module' consisting of a low voltage 75W Halogen MR-16 lamp, and MR-16 socket, an adaptor plate, a combination power supply dimmer and a control jack.

US: 502 898-8962



Strand Lighting's Mantrix MX

Simply MX to the rest of the world, and first seen at the PLASA Light & Sound Show at London in September, Strand launched Mantrix MX in Orlando for the North American market. It is lightweight, portable, and comes in 12, 24 or 48 channel versions operating 512 dimmers. It offers a full variety of features including instant record and playback memories, two scene preset manual control, plus menu selectable DMX-512, SMX, AMX-192 or D54. There are numerous additional options available.

Also on stand was the re-designed and re-packaged Impact console for the mid-range market, the top-end Light Palette 90, and a Taskmaster controlling Parscan II's. Command/Cue Plus is featured elsewhere.

US: 213 637-7500



Laser Productions Dualscan XP

According to Laser Productions they were the only company taking part in LDI who were given the opportunity to demo their products for the Walt Disney Corporation. Four Variscans and a Performer controller were installed at their Pleasure Island complex in the Mannequin Club.

Launched at LDI was the new Dualscan XP laser simulator — two Variscans in one projector. The company bills it as a unit that has two scanner sets, two colour systems — without any appreciable light loss — at much less than double the price.

US: 305 754-6885 UK: 0527-510281



Major Goldscan Keyboard

Distributed by Lightpower of Germany, the Major Goldscan Application is a customised control system for Clay Paky Golden Scan projectors. It is billed as the most efficient graphical user interface for the control of Golden Scans and runs on IBM compatible PCs. Oliver Rump (left) and Ralph-Jörg Wezorko of Lightpower show the system at Orlando.

Germany: 05251-4184

QUESTION



How do you make this one lantern do the work of eleven?



Wybron Inc. have the Answer

Exceptional value

Will fit most
luminaires (5 sizes
available)

Range of mounting
plates

220v/240v mains
operated, no
additional power
supplies needed



11 colours end to end
in 2.2 seconds (16
colour version
available)

Heat management
system (ensures
proper cooling of gel
string)

Easy to control from
most lighting consoles
(0-10v or DMX 512
input)

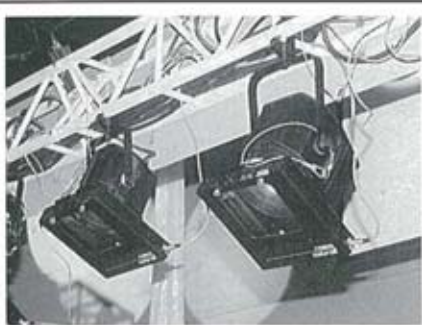
THE SCROLLER

For further information or European dealer opportunities, contact

A.C. LIGHTING LTD



UNIT 3, SPEARMAST INDUSTRIAL PARK, LANE END ROAD, SANDS
HIGH WYCOMBE, BUCKS HP12 4JG, ENGLAND
TEL (0494) 446000 FAX (0494) 461024



Rosco show their Coloroll

In addition to announcing over 80 new gobo designs, a complete update of the range, new paints and colour and a video on scene painting, main talking point of the Rosco stand was the prototype showing of their new Coloroll colour change system. 16 different protocols will be catered for and the units will be fully available world-wide from early February, company president Stan Miller reported.

US: 914 937-1300 UK: 071 580-6334



White Light highlight Projection

London's White Light, fresh from a successful PLASA showing, saw considerable interest in their VSFX variable speed effects units. Bryan Raven (above left) reported many trade houses showing interest and this will be boosted by the fact that eight units will be busy at work on Miss Saigon when it opens on Broadway. Strand are also pushing sales along by urging its use on their Cadenza EP projectors. The CCT Starlette is also an excellent source unit.

UK: 071-371 0806



Jands launch an Event

Jands Electronics of Australia have now been in the business for 20 years and came up with an 'Event' in Orlando. It appeared in the form of a new lighting control console, available in either 24, 36 or 48 channel versions, with DMX-512 output, a MIDI input, plus a range of peripherals such as a VDU, memory card, and analogue outputs. Jands' Paul Mulholland is pictured above (right) with Marshall Blissett of TMB Associates, their US distributors.

Australia: 02 516-3622 UK: 0494-446000



Strong International and their Roadie

Strong's spotlight product manager Jack Schmidt had a representative selection of the company's famous followspots, but totally new was their 'Roadie', which utilises an Osram 400W HTI single ended bulb, with separate metal reflector. It has Strong's own variable focal length lens system and a six filter boomerang is available. It is light in weight for ease in touring situations and has an optional floor stand. There is a pattern slot for gobos and mounting clips for scrolling colour changers.

US: 402 453-7238 UK: 0494-446000



Spotlight's new Vedette 2500

The product drawing the most attention on the Spotlight of Milan stand was their new Vedette 2500 variable beam spread followspot, which utilises an MSR 2500W lamp. It is the bigger brother to the 1200, first seen at the PLASA Show in London in September.

UK: 0494-446000



LSC Latest Precept

LSC of Melbourne, Australia had a major line-up of their control products but centre of attention was their new Precept 48 lighting desk. It follows on from their 12, 24 and 36 channel versions and incorporates extra facilities such as enhanced memory capacity - 192 programmable scenes - and timed cross fades. Pictured above, LSC's managing director Gary Pritchard demo's the board.

Australia: 613 836-9111



Joe Tawil (left) with Robert Iodice.



Explaining the Access updates.



The always busy stand of The Great American Market.

More Improvements for Access

First stand in the 'quiet' hall, the usual bright display from The Great American Market had Access control consoles front of stand.

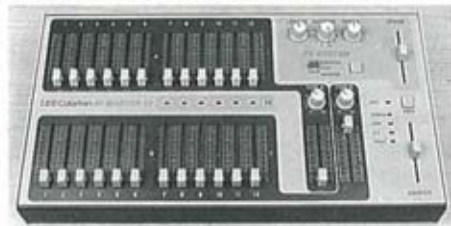
Software improvements for Access include Halt/Back for the 48 channel models providing the ability to stop a fade and go back to the previous cue. It is a very useful feature during rehearsals. There is also an upgrade package to convert the 48 channel model to 96 channels. Another addition is the ability to change a dimmer setting in a given cue and have the change track through subsequent cues until that dimmer appears at a different setting from the original one. Finally, there is now the ability to print a cue sheet.

On the staff side, GAM have announced that Robert J. Iodice has been appointed director of sales. "Bob's experience ranges from regional theatre to the theme park and leisure industry, so he is well able to relate to our diverse clientele," said general manager Joe Tawil. "In just a few short months with us his energy, enthusiasm and expertise have become important assets."

EQUIPMENT *News*

Lumo Lighting launches New Ranges

At the recent Photokina exhibition in Cologne, Lumo Lighting launched a range of new products. Alongside the new Status control console, the company showed the BiMaster range of lighting control desks. The two-preset control desks are specifically designed for the smaller venue and are available in 12, 18 and 24 way versions.



The company has also developed a new Universal electronic ballast, which can drive any of the company's 575W, 1.2kW or 2.5kW Super Daylight fresnel heads. Like all Lumo electronic ballasts, the new Universal model is entirely flicker-free but also includes Power Factor Correction. Further details contact Lumo in Bolton on (0204) 73373.

Farrahs Supply Yamaha

A new 24/4/2 Yamaha sound console, the Yamaha PM 1200 has been supplied to the Marlowe Theatre, Canterbury as part of a major refurbishment contract awarded to Farrah Sound.

The PM 1200 was developed by Yamaha specifically for theatre use and includes dedicated applications such as master mute function which permits instantaneous punch ins and outs. The unit, available in a 16 to 32 channel format and its companion, the PM 1800 in a 16 to 40 channel format are available exclusively from Farrahs. Both units are also available for hire. For further information contact Farrah in Kingston, telephone 081-549 1787.

Nexon Starflex



'Starflex' the new lighting effect from Swiss-based manufacturers Nexon, is a powerful and tight sealed lightbeam which is projected over rotating mirrors, with position and colour changing in time to the music. Dichroic filters provide intensive light colouring. The discharge lamp is switchable over an external 10 volt signal and a second 10 volt signal controls the shutter. The Starflex does not require a special controller. For further details please contact Nexon Elektronik in Bad Ragaz. Telephone 085-96 96222.

Tecnation drop Bit Bopper

Tecnation Digital Atmosphere have announced the immediate mothballing of the Tecnation Bit Bopper computer graphics sound-to-light and multimedia entertainment system.

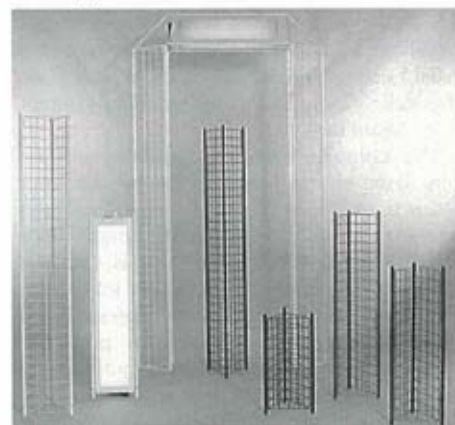
Tecnation say that the decision will enable them to further their ambitions in the field of multimedia based Personal Information, Communication and Organisation technology. The financial cost of maintaining the Bit Bopper project has been preventing research and development in this area as well as being a huge personal strain on all team members.

Kaleidovision, who own one of the only two Multimedia Bit Bopper systems in the world, offer the complete world-wide hire service for all musical events. Tecnation, whilst continuing to support Kaleidovision, will be concentrating on developing the PiCO REVO project. For further details contact Tecnation in Oxford on (0831) 260370.

Designer Colour From Clip

Industry leading space and light frame systems, Trimesh and Trilight — from modular display system company Clip — are now available in five colours as standard. Exclusive to Clip, Trimesh and Trilight are designed to light up any display area — from office and shop interiors to full scale exhibitions and point of sale.

Trimesh provides an integral framework for high level lighting. The only structural spaceframe system to be triangular in shape and with a square mesh 'body', Trimesh's multi-purpose design provides the framework to support additional, point of sale shelf and racking systems as required. Graphics can also be hung from or stretched across the frame.



Complementary Trilight features its own, built-in fluorescent lighting system which shines through opalescent perspex. For further colour, a tinted acrylic sleeve — in stock red, green or blue — is simply slipped over the fluorescent tubing. Designed to integrate with Trimesh sections, message-making Trilight is also suitable for displaying banner-style graphics which are automatically illuminated from the inside out by the integral lighting system. Further details on Clip's full product range are available from Clip Ltd, in Wick. Telephone 027-585 2636.

Strand Homes in on the Range

Strand Lighting, through its range of dimmers, control stations and luminaires claims to provide everything needed for architectural and display lighting schemes. Suitable for domestic, office and retail display uses they are, from left to right. Back Row: 20 amp Unidim; 5A Microdimmer; fluorescent Multi-dimmer (manual); 20A Microdimmer; tungsten Multidim (preset) and the Stalk spot, with saucer attachment. Middle Row: Finesse dimmer; 3-gang fader; 1-gang rotary; 1-gang preset; 6-gang fader and master; 6-gang preset; Microdimmer preset and 4-fader; take control and infra-red receiver; and an infra-red transmitter. Front Row: preset select and bargraph; Minicube; Bullet; Minispot profile, with an example of a dichroic 12V lamp; Minispot 'Barndoor'; Eyeball spotlight; Cube spotlight, and a 'Wall-Washer' downlight.

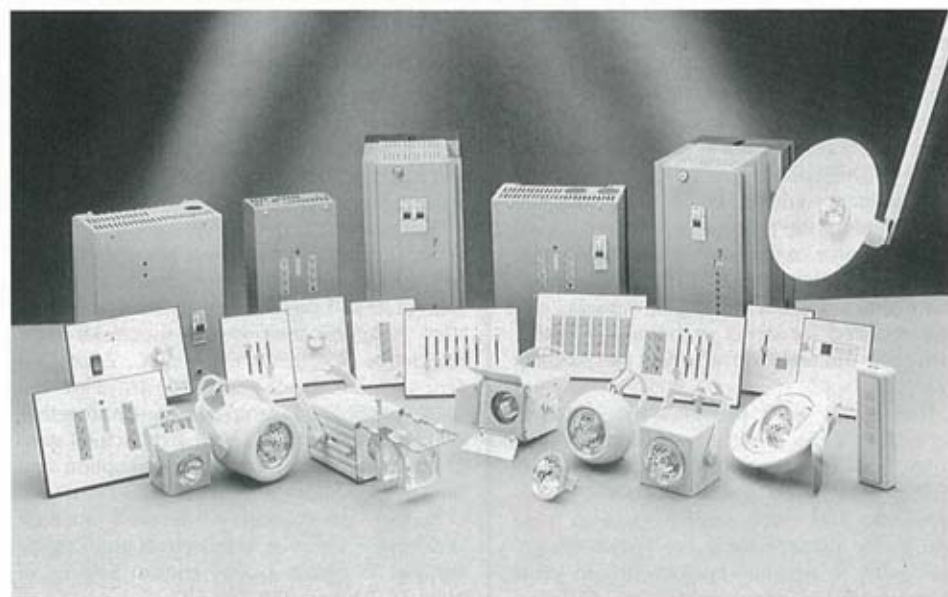


Image by Definition



The laser image above is produced from The Definitive Laser Company's multi-coloured laser system, feeding a 20 beam position optical effects head. Graphics, animation and all spatial effects are controlled by Definitive's Imagen computer system, enabling an entire laser production to be pre-programmed in advance. The Imagen can be cued manually, from tape or via a pulse signal from any external source, i.e. Dove or Eagle controller.

By utilising the beam table technology, over 180° of beam coverage can be achieved. Full 360° effects are also possible by a simple modification, prior to arrival on site. After the initial beam alignment, all beam positions are physically 'locked off', eliminating troublesome beam drift.

The company also has available remote mini laser effects heads, whereby the laser beam is fed from the main system via high efficiency (80%), transmission optical fibre cable. This 'shoe-box' sized unit is ideal for back projection of blanked (no join lines) graphics or can be used when a presentation necessitates the laser effects to be projected from an unusual or confined position — maybe from inside a car or washing machine! We have recently utilised a remote scanning head to front project an animation sequence for the Prudential new identity.

The company also has permanent demonstration facilities at their premises near Hatfield. For further details contact Definitive Laser Company in Hatfield on (0707) 266778.

Fostex and the Pink Pig

A Fostex D20 DAT recorder and the Fostex synchroniser package are key to the concept of the new Pink Pig Mobile, the only mobile of its kind, designed specifically for TV and film sound recording.

The Pink Pig Mobile is unique in that it is probably the smallest dedicated multitrack mobile recording unit. Centred around a D20 digital mastering machine, a Tascam 24 track recorder, and an Allen & Heath 32 channel Saber, the studio is installed in an 18ft American Econoline truck, and can run off a single 13 amp socket.

One major criteria when specifying the equipment for the mobile, was the need for a master source of timecode, in order that sound could be locked to the cameras on multi-betacam shoots. A digital recorder was also required for direct mastering to stereo, especially desirable for recording live classical music.

Due to its size, the Pink Pig is totally accessible, it can even be parked in a regular meter bay. The equipment was supplied by 2001, Surrey-based specialist consultants in pro audio and video equipment, who were also highly instrumental in the system design. For further information contact Richard Wear at Fostex UK Ltd, telephone 081-893 5111.

R & W Catalogue

The third edition of Raper & Wayman's Professional Audio Catalogue, is now available. People will notice a difference — the cover is now in glorious colour — but its logical, signal path format and comprehensive information on a wide range of audio products have been retained, and it has been expanded to 88 pages to include two new sections covering Audio Furniture and Problem Solvers. The Raper & Wayman price list is now up-dated on a quarterly basis and sent to all recipients of the catalogue. For further information contact Raper & Wayman in London, telephone 081-800 8288.

Compact Transformers

Lighting Components Limited new generation of toroidal units ranges up to 500vA starting with 20, 35 and 50vA units.



Other than for those units specifically built for connection to low voltage track systems all Lighting Components transformers over 75vA have been designed with individually wound secondaries for each lamp. This has the effect of smoothing the regulation problem of multi-output units and offers an achieved increase in lamp life of around 35%.

All the transformers are constructed using the highest quality materials with each encapsulated in epoxy resin within a case moulded in glass-filled nylon. Where primary and secondary windings are provided these are individually fused and there is an in-built automatic re-settable thermal overload. Connecting terminals and fuse holders are mounted externally on the top of each transformer with a removable transparent cover plate to shroud all live parts. Individual terminal connections are provided for each secondary thus removing the need for additional splitters.

For further information contact Lighting Components Limited, Eastbourne, telephone (0323) 410105.

Selecon's Low Voltage

The New Zealand luminaire manufacturer Selecon have extended their product range and market with the introduction of their Accent low voltage and metal halide display lighting range.

The low voltage range comprises the Demi-spot and Accent Spot housings for the MR16 lamp and the Accent Profile, a variable beam (26-45°) profile ideal for pattern projection. Adapting their highly successful New Star range of Minifresnel, MiniPC, Zoomspot 650 and Zoomspot 650 Wide to utilise the 150W metal halide lamp has brought together theatrical performance with architectural standards of lamp life, energy consumption and heat output, claim Selecon.

Further information is detailed in their brochure — Creative Architectural and Display lighting. To obtain a copy contact Selecon in New Zealand on (09) 792 583.

SkyLight Laser from Coherent

Coherent (UK) Ltd has launched a new family of ion laser systems — the SkyLight series — designed specifically for laser entertainment and display applications.

The systems have been developed to meet the demands of the light show industry — reliability, long-life, ease of maintenance, high brightness and beam quality, claim the company. The system utilises optics that provide very low beam divergence. They also incorporate Coherent's sealed mirror technology and long life Innova plasma tubes, guaranteeing reliability and requiring minimum maintenance.

The systems are available in two different models — SkyLight 70 and SkyLight 200 — providing blue-green output powers from 5W to 30W or red output powers from 1.5W to 6W. The lasers are ideally suited to larger indoor use or to outdoor displays where they can literally 'light up the sky'. According to Richard Gleeson, of Coherent, the SkyLight series also meets the financial demands of the laser market: "By designing this series specifically for display and light show use, high cost components required by other markets are not needed. As a result, SkyLight lasers meet the needs of the market place at a highly competitive price." For further information contact Coherent UK in Cambridge, telephone (0223) 420501.

Delaire M Series



Delaire the European division of Deltron Inc have announced the launch of their all new Moduflex range of power supplies, available in power ratings from 400-750 watts. The Moduflex has a power density of 6 watts per cubic inch, which is currently twice that of the nearest competitor, and nearly five times the power density of a conventional power supply.

The 500 watt model measures only 63mm(H) x 128mm(W) x 228mm(L) with the 750 watt model only marginally larger. The compact size has been achieved using ultra high efficiency magnetics and advanced manufacturing techniques. All of these new products feature 120kHz Mosfet switching, current mode control, fully isolated and regulated outputs, and comprehensive overload and overvoltage protection. Pricing will be very aggressive say Delaire as they intend to secure a major portion of this mid range market.

For further information contact Delaire in Co Dublin, Ireland, telephone 353 1 851411.

Super Scan: here is the show!



In the middle of the stage a Beam of Light attains perfection in playing his part:

■ *an unequalled brightness,* ■ *the purity of colours and their unlimited tonalities,* ■ *a fast and smooth moving,* ■ *an high precision positioning,* ■ *the thousand and one new, astounding effects,* ■ *the reliability of a professional technology.*

Super Scan: the new automated fixture, supporting light designers' imagination in professional show lighting

CLAY PAKY s.r.l. - Via G. Pascoli, 1 - 24066 PEDRENGO (Bergamo) Italy - Telefono 035/663965 - Fax: 035/665976 - Telex 305242 CLAYPA I
PULSAR Pulsar light of Cambridge - Henley Road, Cambridge, CB1 3EA. - Tel. 0223/66798 - Telex 81697



The Professional People

Slick Truss, Golden Scans, Rainbow Colour Changers, Flexi Flash, Supermoons, MA Desks, Mains Cable, Scanners, Teatro Lanterns, Snow Machines, Bubble Machines, Major Lighting, Golden Scan Control

Whatever your requirement it is worth a phone call.

New price list now available



MUSHROOM LIGHTING

76 Tenter Road,
Moulton Park Industrial Estate,
Northampton NN3 1AX
Telephone: (0604) 790900
Facsimile: (0604) 491118

Nik Milner

LOCATION
PRODUCT
PEOPLE
& SOUND

STUDIO B9, 164-180 UNION STREET, LONDON SE1 0LH

071 633 0963 0836 599 233

P h o t o g r a p h e r

RB lighting Ltd FOR

STOCKISTS
OF CCT
LANTERNS
& SPARES



CCT

If you have difficulty in obtaining CCT equipment ring us first for service

081 977 9665

RB Lighting Ltd, PO Box 34, Teddington, Middlesex TW11 9EU
Fax: 081 943 4375

NEW for the 90's from CCT...



SILHOUETTE 90 1000/1200W

A completely new design of this popular range with even more features.

- Smaller lamphouse.
- 3 new octagonal interchangeable lens tubes with fast internal access.
- New gate and shutter system.

Plus Silhouette 2000/2500W lamphouses.



STARLETTE FX PROJECTOR 2500W

- Efficient general purpose effects projector (can also be used with a 2000W lamp.)
- Designed to give excellent performance with standard disc and box effects.
- Ideal for static and senic slides, when a turntable and universal front slide carrier accessory is required.

DISCHARGE FOLLOW SPOT 1200W

4 lamp options all hot restrike :-
Philips MSR 1200W, Thorn CSI 1000W,
Thorn CID 1000W, Wotan HMI 1200W.

- Built in iris/blackout.
- Trunion balancing.
- Mechanical dimming.
- Rotating stripping shutters.



ON TOUR

Catrina Forcer

In last month's issue I featured an article written by Louise Stickland and, unfortunately, we made an error in the copy. The sound engineer for last year's The Cure 'Prayer Tour' was not, as we printed, called Chubby but rather Cubby! Again, I stress the fault was ours and not Louise's.

Autumn in London appeared to be a Roy Bennett solo season with four major shows designed by him. I didn't manage to see the Sinead O'Connor show but I did catch the Depeche Mode 'World Violation Tour' and the Janet Jackson 'Rhythm Nation 1814 Tour', both at Wembley Arena. Jane Spiers and John Featherstone are acclaimed designers in their own right and I couldn't help wondering why they were working as operators for someone else. It seems to be rather like giving an artist a paint-by-numbers kit! However, both designers stressed how content they were and why they were particularly happy to work with Roy Bennett. Next month I hope to feature the man himself with his designs for INXS.

This month I've also spoken to Jerry Reinhardt who is operating for the Cher 'Heart of Stone Tour', a show designed by Jeff Ravitz. It was a very theatrical show complete with videos, special effects, brilliant choreography, plenty of scantily clad male dancers and, I'm glad to say, exceptional set design and lighting.

Janet Jackson

'Rhythm Nation 1814' World Tour
Wembley Arena

Lighting Designer: Roy Bennett
Lighting Director:

John Featherstone

Vari*Lites: Gary Westcott

The Rhythm Nation 1814 stage set is an industrial structure comprising of aluminium towers, platforms, staircases, ladders and ramps. The towers support industrial cranes filled with lights, beneath which are platforms carrying followspots. The 12m high towers, in many arenas reaching almost to the roof, are decorated with fluorescent lights set behind metal grilles and contain other lights which rise and fall on tracks. The stage set includes an 8m long telecaster board set beneath a dance platform.

Although the stage is always located at one end of the arena, the set is designed to be seen 'in the round' and the band play, partly hidden, under a central platform. Janet and her six dancers move above, behind and in front of them in a sequence of complex choreographed performances. The open towers and staircases are alternately backgrounds and foregrounds through which the performers move. Most of the lighting is built into the stage set, and it is arranged so that it can be focused on both the artists and the structure.

The first half of the show features songs from early albums and the lighting underplays the stage set but features Janet and her band strongly. The second half features songs from the 'Rhythm Nation' album and the lighting

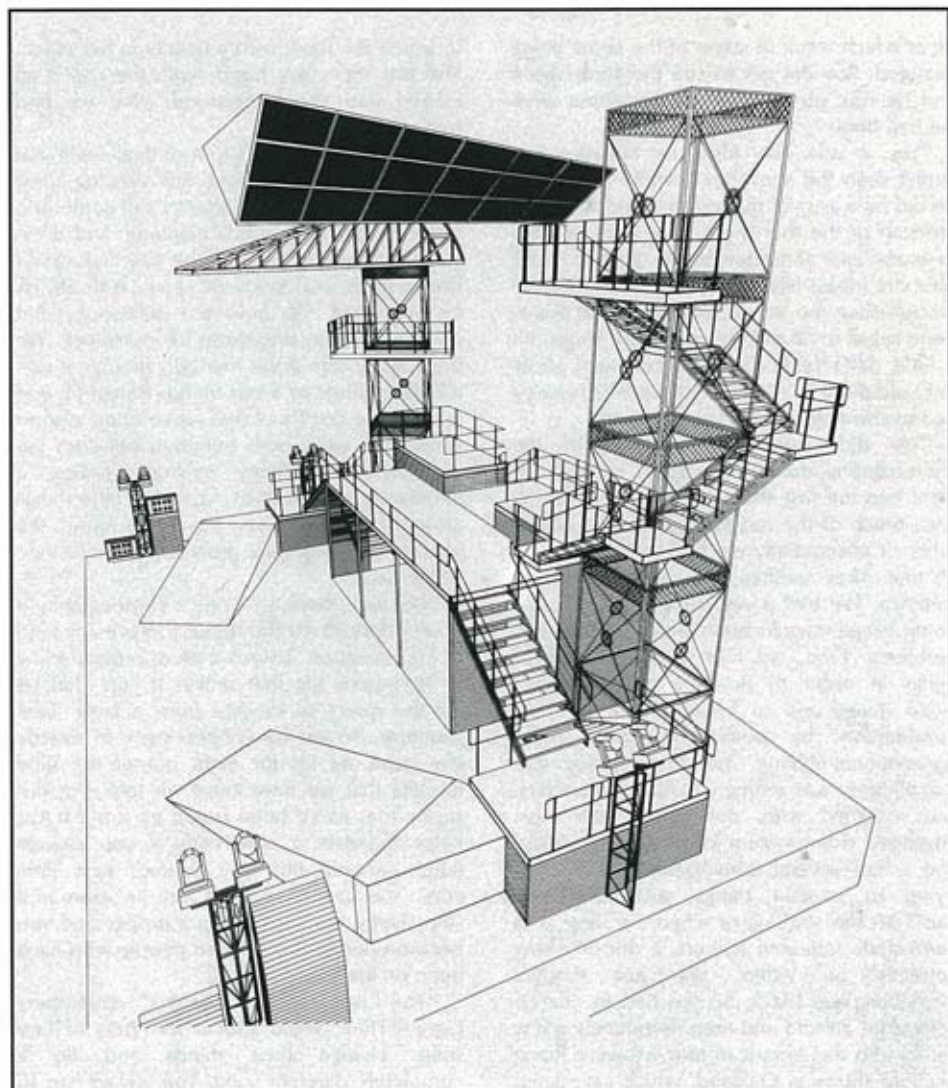
turns onto the aluminium structures which become menacing cityscapes, factory interiors or funky discotheques. Janet and her dancers move through this moody twentieth-century landscape in a series of dazzling costume changes, lit from unexpected directions by lights concealed behind the grilles or buried in ventilator shafts and revolving cowlings. The telecaster board is used to present abrupt slogans from the 'Rhythm Nation' lyrics.

"Roy got the account through Patrick Woodroffe who was busy with The Stones and Tina Turner at the time," explained John Featherstone. "He then approached Gary and myself. It became apparent fairly quickly that it was going to be an unconventional system because there isn't really a lighting rig. Everything is encompassed in the set itself. It was interesting for me because it was the first time I had been involved directly on the same project as Roy. He works in a very democratic way when he is programming. He has a definite theme and idea of the way he wants things to go, but if you've got any ideas or suggestions he is more than willing to hear them. Also, if he suggests an idea which you think is really rough then he'll abandon it. Roy hasn't any ego problems when he's

programming. It's very refreshing for Gary and myself as well as for Shaun our Telescan guy to a certain extent. He didn't know Roy at all before so it took him a while to get used to the idea that Roy really likes to work as a team."

"It's a case of brainstorming together, picking out the best ideas and then bouncing them back," added Gary. "It's similar to what happened on The Cure where we passed ideas backwards and forwards."

"It's better than someone coming in and saying 'this is the way I want it, this is the way it's going to be whether you like it or not', which is an unrealistic situation," continued John. "Roy places a lot of trust in Gary and myself in as much as he set the show up and was around for only the first couple of weeks and at that stage it looked like he wasn't going to get to see the show ever again. So that was why he wanted to make sure we had input because we needed to be happy with everything otherwise there would be a tendency to change things after he had gone. It's best to achieve something that everyone is happy with even though it might not be exactly what you want because then you know the show will actually stay consistent. Obviously, we're working on and developing



Janet Jackson 'Rhythm Nation 1814' world tour: a computer visualisation of Fisher Park's set design.



Janet Jackson Rhythm Nation 1814 World Tour 1990.

Photo: Mark Fisher, courtesy Fisher Park Ltd.

ideas which result in some of the show being changed. Roy did get to see the show again and he was very complimentary about what we had done."

"Yes, it was very fortunate because Roy hadn't seen the show for a while and when he did he was over the moon," said Gary. "At the start of the tour there were a lot of back to backs and consequently no time to work on extra ideas, filling in spaces and generally embellishing the songs. Basically what we've done is just to fill out the rest of the songs. It's a little different from a standard rock show because there is a lot of dancing which we've had to choreograph the lights around."

"We didn't get to see a lot of the choreography during rehearsals, in fact, we went into the first show without really having seen much of the run through at all," admits John. "Consequently we had to change a lot for that. Also, another element raised itself in America. We had a video system which was doing image magnification which gave us two problems. One, we had to change certain things in order to produce an acceptable video image and to brighten the show up considerably by putting in some more conventional lighting. The other problem was that all Janet was seeing was that video which was recorded with, not exactly, the most advanced video system known to man. Gary and I had several conversations with Janet trying to explain things such as when Vari*Lite's are strobing or when the stage is in particularly saturated colours, it doesn't show correctly on video. She just thought everything was black. So we had to change quite a lot around and then, fortunately a few weeks into the American tour we were doing multiple shows at Oakland, which gave Janet the opportunity to come in every afternoon

to watch the show with a dancer in her place. She was then very happy with the way it all looked and she understood what we had been talking about.

"When you are on a tour of this length you can say 'right we've got this running now, we're going to leave it exactly the same and we're not going to touch anything' and there are certain merits to that. The way Gary and I like to work, and Roy's the same, is to always be improving. We have the philosophy that we tend to run the show for ourselves. We don't really care if the manager thought it was a brilliant show or if our friends thought it was great, if we don't feel that we've done a good show then we're both bummed out after the gig. We're constantly striving, making it interesting for ourselves, changing little things around and finding new bits in the music. We want to be constantly progressing rather than sitting back.

"Because there is so much choreography it is very difficult for the music to have any kind of improvisation. There's a lot of programming to keyboards etc that makes it very difficult for the music to deviate from a fairly fixed structure. So we have been stuck in exactly the same set list for eight out of the nine months that we have been on tour. I'm not saying that we've been bored by it but it just helps maintain a little edge if you change things around and give yourself new little cues. You have to keep it fun. As soon as it stops being fun it turns into a drudge and you become one of those jaded people who have been on the road too long."

"The Cure was very different," remembers Gary. "They would start a few bars of one song, change their minds and do a completely different song. You always had to be on your toes. With this show you have to

keep yourself interested. We play off each other a lot, swapping cues and swapping boards every now and then.

"The tour began with three months in the USA and then three weeks in Japan followed by another three months in the USA. We've just spent a month in Europe and tomorrow we are returning to Japan. Whilst there we will go over to Hong Kong for three shows picking up a completely new system. John has done a totally fresh design and we are going to do a more conventional show without the major part of the set."

"We've been very fortunate with a production of this magnitude and the amount of money Janet is generating," added John. "We've taken, with the exception of the Vari*Lite's, the entire set and lighting rig everywhere. That's a great luxury that you don't usually have unless you're working with an artist of this size. However, it means that when they get into the situation where they want to drop in three shows in a different country very quickly we're faced with either trying to recreate a very unique and large stage set using local scaffolding or going for an industrial type, normal rock and roll show which is more run of the mill. In this case we've gone for the latter. There are also limitations to the equipment available in Hong Kong, they have European desks and dimmers but lamp wise all they really have are Par cans. Vari-Lite Hong Kong only holds VL1s so Gary is going to be thrown from a system of 90 VL2s and 4s into a system of 24 VL1s."

"From using a thousand plus cues over the whole show I'm going to a limit of 256 cues so there will be some fast finger work!" Gary said. "It'll be a more basic show but hopefully still satisfying. After that we go back to Japan for a week of shows."

"I think it was a very wise decision not to try to have a conventional lighting system because the set itself, designed by Fisher Park Ltd, is generating such a strong theme on its own," said John. "I think if you had a normal type lighting system hanging there it would detract from the set. We only have 14 Par cans, 60 or 70 8-lites with gel changers and the usual complement of strobes and those kind of devices. The bulk of the system is the 8-lites with colour changers. There are also 36 VL2bs and 49 VL4s. 12 Telescans and 16 spots. I was fairly apprehensive about the number of spots in the beginning because I've never called so many and I knew the difficulties you can get into calling spots on so many dancers. If you are dealing with a band situation it's fairly easy to describe to the operator what you want him to do. When you've got dancers, who for the majority of the set, dress identically and also race about the stage like people possessed, it's extremely difficult to maintain all the spots. I'm glad to have the Edwin Shirley guys running the spots here but in America it was nightmarish dealing with the union crews. Also, in America we were using regular house spots which wasn't really satisfactory with such a high set. In Europe we've got a spot bridge and the video screen has gone."

"We must say thanks to Clair Brothers because they've been very helpful," stressed Gary. "Wherever possible they've raised the PA as high as they can. It's unusual for sound crews to be aware of the whole picture and they understood our problems with spot placement."

The Janet Jackson tour finished on November 16th and in January 1991 Gary Westcott is scheduled to join Roy Bennett on the forthcoming George Michael tour. John Featherstone has designed the rig for Living Colour who are currently touring with Greg Cunningham as the operator. In the new year, John will again be stepping into Roy's shoes and taking over INXS for their American tour. Over Christmas Roy and John will put their heads together to work on Roy's current designs for INXS which will include a much larger system than in Europe.

Stage Design — Fisher Park Limited
 Lighting Design — Roy Bennett
 Set Construction — Tait Towers, Inc.
 Lighting — Light & Sound Design Ltd,
 Vari*Lite Inc.

Video — Nocturne Inc.

Audio — Clair Brothers Audio Enterprises Inc.



Janet Jackson World Tour.

Depeche Mode 'World Violation' Tour at Wembley Arena

Lighting Designer: Roy Bennett Lighting Director: Jane Spiers



Depeche Mode.

Photo courtesy Mute Records

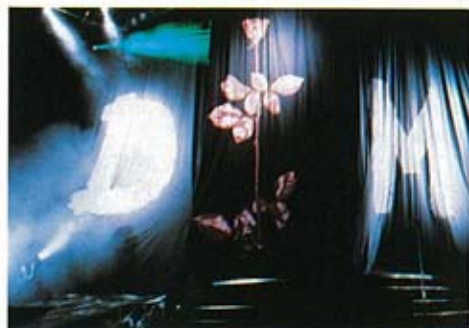
The obvious question to ask Jane was why, after many years as Depeche Mode's lighting designer, was she back on the road with them as an operator for a show designed by Roy Bennett?

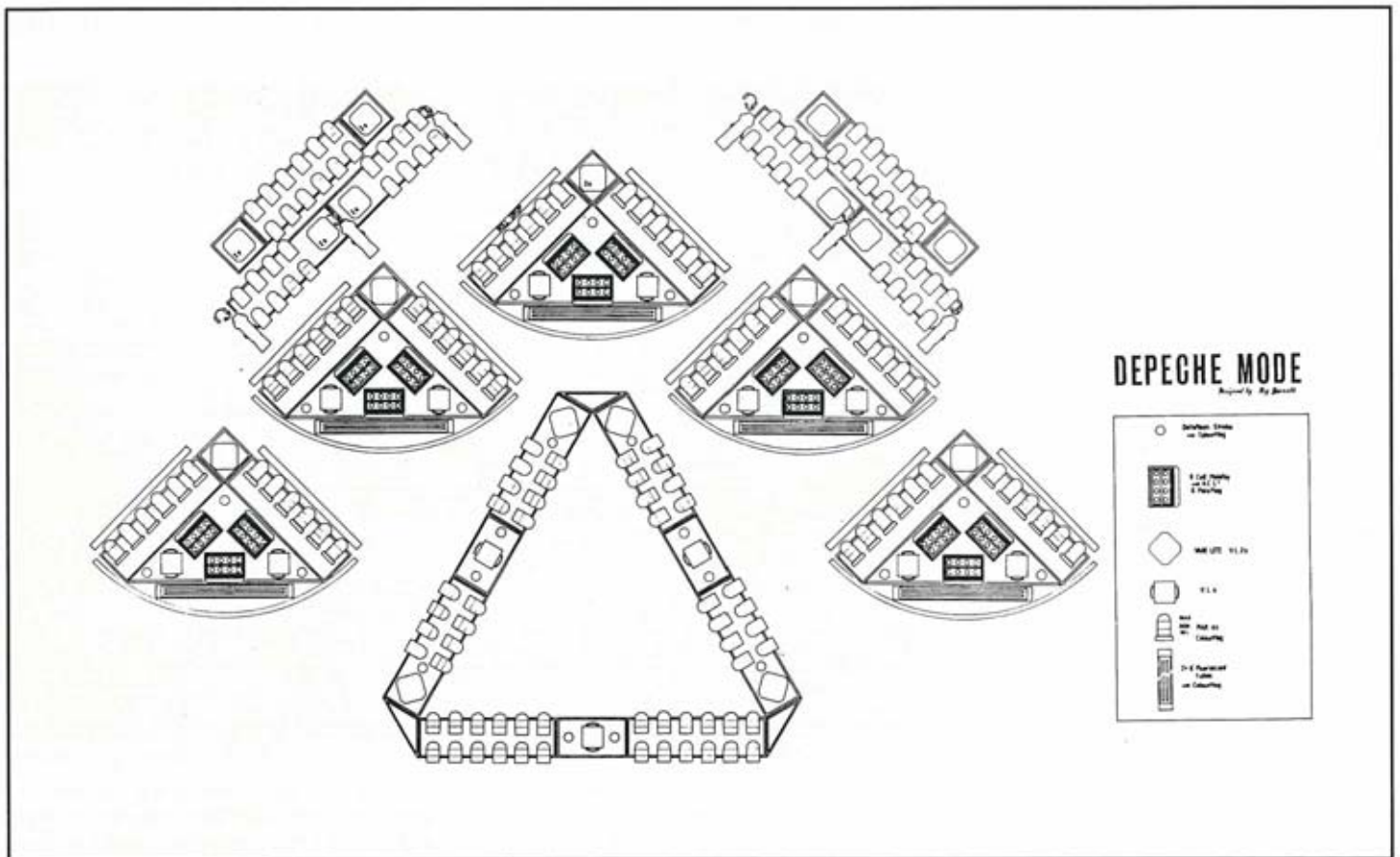
"I've been away for two years and you do lose touch. You need to see shows and keep abreast of new ideas as things change so quickly. I wanted to work with Roy anyway so I was totally happy with the idea. We put our ideas together to get the Depeche Mode look and, although I would have done it differently left by myself, new ideas are good mixed with your own. It's a great way of working. It's a new type of job this whole idea of people designing and other people operating. It's about getting a team together and I think it works well but you have to have the right people. I was very nervous at the beginning that I'd feel as though I was having my toes stepped on or vice versa but it was great. The first week of rehearsal we were both very worried about upsetting each other!

"The whole design revolves around five

Pods which move individually. In each of them we've got Vari*Lite and their raylights and fans. It's nice and sparse, really quick to put up and take down. Each of the pods travels completely with all its colour changers and lamps on. So you put a basic grid up, without any lamps on it and you think all the crew are going to get annoyed because you've got tons of lamps! Instead you wheel the pod units in, put them on motors and they all just disappear up there. It has worked really well especially with the stage set because the whole lighting plot is a mirror of the stage set. Originally, the band were going to get someone to design the stage set and I was going to do the lights but it has worked better with someone doing the whole thing because you get the continuity.

"It's also been really good doing this with Roy because there are a lot of Par lamps and Molefays that I'm in charge of, so it's not as if the Vari*Lite are doing all the work although they are a major part of the show. Warren Flynn, the Vari*Lite operator, played a large





Part of Roy Bennett's lighting plan showing the five moving 'pods'.

part in getting it all together. That's a new side of this whole thing of working together because previously on the last tour I operated the Vari*Lite desk, the colour changers and the normal desk. Now there are three people doing it, including Kathy Ellis on the colour changers. It works fine. It's a new way of thinking and it's quite hard working on a tour to get used to a show and working a show if you're not doing it all yourself.

"The projection is all done by Anton Corbin who has been with the band for years. I was nervous about it at first but I think it makes a nice break. You can't have a lot of lighting on at the same time.

"I certainly don't have to work so hard on this tour. I don't know if it's usual for designer/operators not to do as much physical work. I've been with the band so long, I've got to the stage where everybody has been telling me for years that I shouldn't spend all my time doing both. I've found that the show has been better, consequently, and I haven't been exhausted all the time. It makes a big difference.

"I don't think I'd cope very well working with a designer saying 'you do this, this and this'. It has to come from yourself really and Roy knows how to work with people. It's a help to him if you take a lot of the responsibility because he's got a lot of work going on. There seems to be a stigma thing about being the operator because people don't quite know what your position is. It's quite hard with the people you work with as well. I think they get confused and think 'are we meant to change this, this is someone else's design?'. Whereas normally I've always been boss so anything I say goes.

"I can honestly say I care about the show as much as if I had designed it myself. After rehearsals it still took about a month for the show to really get polished up. Once on the road you start adding all the really nice bits and specials and so it becomes very

personalised. I've never felt cold about it or as if I was just pressing buttons. It's never felt mechanical. The last time we spoke I was saying how tricky it was to operate the Vari*Lite desk because that's quite mechanical, you don't get as much emotion out of it."

The World Violation Tour started seven months ago in the USA and was incredibly successful due to the band's immense popularity there. It then travelled to Japan and Australia which Jane describes as diabolical. It was the first time Depeche Mode had played Australia and the gigs were particularly small and, with Roy's show being designed on a grand scale, things were obviously difficult. Jane attempted to produce the same sort of show scaled down but unfortunately it ended up looking like a 'migraine'. To add to Jane's embarrassment her husband, friends and family flew over from New Zealand to watch the show. Fortunately, a very successful tour of Europe followed culminating in three Wembley shows and three NEC shows.

"The first night at Wembley we had quite a quiet audience but other nights were very good," explained Jane. "There were a lot of technical problems to start with but I won't tell you about them! To give you an idea it started off with the curtain not opening at all and it sort of went downhill from there.

"I returned to this business partly because I ran out of money but also because I don't want to totally lose touch with everybody. I was very nervous about coming back and starting again having been totally away for so long. It took me quite a while to settle in. There isn't any work in New Zealand, where I come from and now live, although I did work in theatre there. I could have stayed but it would have meant working seven days a week so I wouldn't have seen much of my family. (Jane retired temporarily to have a baby - Lawrence - who is now 18 months old). I'm hoping to move to America next

year with my family. That way I'll try to get as much work as possible in the States and air flights are so cheap there my family will be able to fly about to see me. I'm not ever going to go away for a long period of time and not see them at all. I'll fit them into it. In New Zealand it's too expensive to fly anywhere, whereas in America it's easy to fly to places like England. Hopefully, it will work because I don't want to give up for five years and then suddenly think I can't go back to it because I've lost contact with everything. Even being away for two years I've found I've moved away from all that.

"Lawrence, my son, is totally happy with me being away, I'm the one who gets upset! I've been on tour for seven months and I've only managed to get home twice. The first time he acted as if I'd only been down to the shops and he didn't double take when I left. I'm going home next week and I'm getting more excited by the second. So many people on this crew have children the same age so we all feel the same way and everybody loves getting their photos out."

Depeche Mode Crew
Steve Rusling, Graham Osborne
Tommy Booth, John Bull
Firmin Moriarty, Cathy Ellis

For details of
advertising in
Lighting + Sound
International
ring Alison Hunt
on (0323) 642639



The illustration opposite is taken from part of a CAD analysis of Coventry Cathedral, where Bose have just supplied an entirely new speaker system.

The CAD Modeler programme is a proprietary Bose programme that enables Computer Aided Design of purpose-built sound installations and audio systems.

This unique programme means that Bose can offer a unique service; an accurate analysis of the acoustic properties of any building, (whether existing or as yet, un-built) before a sound system is specified.

And a Bose Approved Contractor will carry out a CAD analysis for you for free.

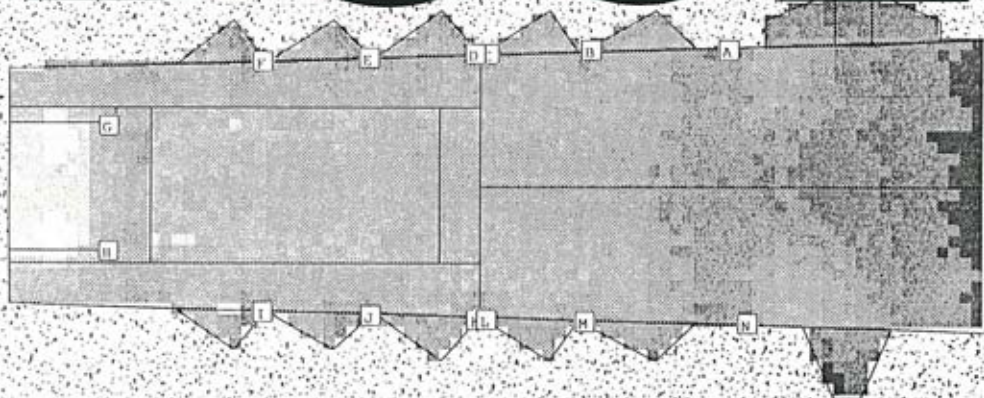
How does CAD help?

The advantages of a CAD audio programme are obvious.

For a start it means that exactly the right speaker for the job can be installed in any given location in the optimum operating position.

It means that wiring and amplification can be hidden away on a permanent basis (vital in a building like Coventry Cathedral, or in a new design where the visual appearance of an audio system is every bit

FREE FROM BOSE

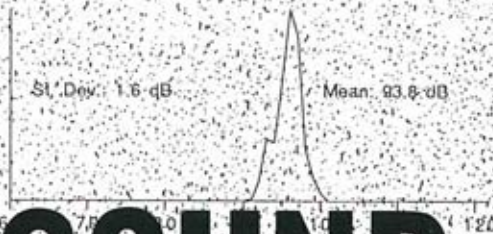


Sound Consultant:
Ken Dibble of The Sound Practice, Rugby.

BOSE

Sound Systems
Software

Coventry Cathedral (Direct and
Reflecting SPL) 3/128 - 1' 0"



SOUND ADVICE

as important as the sound quality).

And it means that the whole process of upgrading or installing audio equipment is made as cost effective as possible.

Speak to a speaker expert.

Write to us at the address below and we'll give you the name of your

BOSE
Better sound through research.

nearest Bose Approved Contractor.

As well as offering CAD he will prove to be a mine of information and practical knowledge when it comes to getting the most out of any audio installation. He'll probably also try to sell you some Bose loudspeakers, but as an audio expert, he wouldn't he?



Cher 'Heart of Stone' Tour Wembley Stadium

Lighting Director: Jerry Reinhardt

Jerry Reinhardt grew up amongst the casinos and cabarets of Reno and Lake Tahoe, USA where his father designed slot machines for a living. He then went to college to study theatre because he wanted to be an actor. Deciding that he was allergic to starvation he then went to graduate school to study design and after that he was a college professor for three years. Wanting to make a little more money he began working for a lighting company where he met people who liked his work. Eventually Jerry began to get his own accounts and now he is a freelance lighting designer/director for a number of different people.

"I took the academic road as opposed to working my way through the clubs," explained Jerry. "I had a lot of experience doing operas and legitimate theatre before my first rock act which was Englebert Humperdinck. I think that it's important to bring a lot of theatrical conventions and emotional, dramatic qualities from theatre to rock and roll. Rock is the last, large avenue of live audiences as we're so jaded by TV and video. The emotional response you get from a live audience is tremendous, you're not separated by some other medium.

"Jeff Ravitz is officially the lighting designer for the Cher show although he tends to think of me as a co-designer because of the collaborative effort throughout the programming process. He relied heavily upon my input and we seem to have a rapport that works very well. Jeff is fabulous to work with, in fact, he was only at one show before turning the entire project over to me.

"This is not a typical rock show — it's a spectacle of sorts with lots of dancers and video clips. The way we approached it was more like we were lighting vignettes and we separated each number as its own little act with its own little story. We also tried to make the look glamorous and very spectacular. Any design depends on the music, some of the music demands that things look very symmetrical, some demands asymmetry. It was just a matter of going through the music and breaking it down structurally to see where, musically, there should be a visual enhancement or embellishment. Certain tunes and certain notes will give you a feel for what type of colour you use, what type of direction and movement. It was a long process of sitting down and dissecting the music. Music is like an abstract language which people respond to emotionally. Lighting is an abstract language as well and if used appropriately it can either enhance or detract. I think we've come pretty close to appropriateness with this.

"It's a Morpheus Lights rig with a combination of moving lights and fixed lights. Basically, we have 26 PC spots, 75 PC beams, 20 Lekos and over 1200 Par cans. We're utilising some colour faders and some ministrips for lighting the set and far cycs. It's a pretty basic rig with a combination of conventional equipment and Pan Command equipment and it's quite versatile. The main difficulty we encountered was trying to adequately light all the areas on the stage because of the multi-level set. There were physical obstructions from the set itself which made our job a lot more difficult.

"Originally Cher went on tour last year with a different set and lighting designer but they were not happy with the results so they scrapped it. They then hired Jeff and myself along with Kim Kofack who designed the set which was constructed by Show Staging of Los Angeles. If I had designed the show myself I would love to say that I would do the same but I wouldn't. However, there are certain portions of the production that demand a type of look and I'm sure I would come up with a lot of similar things.

Jeff and I coincidentally use a similar palette in our colour choices.

I lean towards Pan Command because I'm familiar with it. I was contracted by their company to write their operators manual. I like Telescans and, whilst doing a TV show in Holland, I used a new instrument called a Superscan which works on a similar basis. It has a nice 1200 HMI lamp source and I was very impressed with the way it looked.

"I've been lighting designer for people like Al Jarreau and David Sanborne and, more recently, Wendy & Lisa whose music I really enjoy. I think that they are very up and coming and they give me the opportunity to work with an avant garde act. I've also worked as board operator/director on a number of different acts — Neil Diamond, Huey Lewis & The News — which I co-designed. I've worked on various projects like the Liberty weekend in New York and The Marlboro Country Music Festival. Recently I worked with the superstars of the Bolshoi Ballet for about three months and it was a real treat. I love ballet

and I think it's a wonderful medium to utilise lighting because lighting is so sculptural. It was beautiful.

"I recently lit the opening ceremony of a new convention centre building in Portland, Oregon. It had two 320ft glass towers and I used lasers, strobes, moving lights and colour faders to the music. I paint a lot of watercolours and I consider working with lights is painting as well, and I find it very gratifying. I'd love to do more theatre if I had the opportunity and there was a way to make a decent living. It's difficult to get theatre jobs. I don't really separate opera from ballet from rock and roll because I think the same approach should be taken for all. Whatever the foundation is — the libretto or the music or the movement — it all needs embellishing."

The Cher 'Heart of Stone' tour started last March and will finish on December 4th in Las Vegas. Six days later Jerry Reinhardt will be on tour again as lighting director for Debbie Gibson, a show designed by Peter Morse. Next summer he will be designing a touring jazz festival.

19 Pin Connectors socapex compatible

Aluminium die casting and black electroplated.
Max. rated current: 20 AMP
24K gilding pins.



DOUGHTY

Doughty Engineering Limited

CROW ARCH LANE, RINGWOOD, HANTS, BH24 1NZ
Telephone: (0425) 478961 Fax: (0425) 474481

S o f i s c o t e c h

ROBOSCAN

Martin

NJD

MODE
ELECTRONICS

Acoustech

Numark

TEAC

HARRISON

OHM

STANTON

Tranlec

LAD
LONDON ACOUSTICAL
DEVELOPMENTS (LTD)

PROGRAMMING & RE-PROGRAMMING OF ALL
COMPUTERISED LIGHTING CONTROL SYSTEMS

1440 Leeds Road Bradford BD3 7AA
Tel: 0274 661405/6 Fax: 0274 666463

PAR 64 CANS

A NEW RANGE OF HIGH QUALITY
LANTERNS AT VERY COMPETITIVE PRICES

STANDARD FEATURES INCLUDE:

ANTI SLIP SEGMENTED YOKE LOCK WASHER
TO HOLD LANTERN RIGID WHEN USED
WITH COLOUR SCROLLERS

FOUR CLIPS TO TAKE STANDARD 250mm (10")
SQUARE OR OCTAGONAL COLOUR FRAMES

EXTRA STONG NOSE CONE

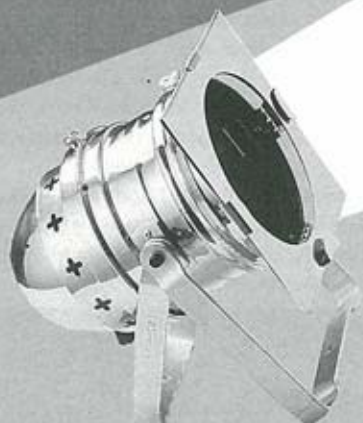


WIRED OR UNWIRED

BLACK OR POLISHED ALUMINIUM

LONG NOSE, SHORT NOSE, FLOORLITES

EARTH BOND FITTED BETWEEN BOTH HALVES



Doughty Engineering Limited

CROW ARCH LANE, RINGWOOD, HANTS., BH24 1NZ

TELE:(0425) 478961 FAX:(0425) 474481

AT INTEL 91

12th INTERNATIONAL ELECTROTECHNICS AND ELECTRONICS



Milan, May 25/29 1991



**I PADIGLIONI
DELLA LUCE**
- Lighting Show -

All the lighting technique products for the planning
and realization of the most modern lighting systems
for the industrial, civil and tertiary sector
presented by the most advanced Italian
and international companies.

DON'T BE KEPT IN THE DARK!

For information: Associazione INTEL - Via Algardi, 2 - 20148 Milano - ITALY
Tel. (02) 3264282-3-4-5-6-7 - Telex 321616 ANIE INTEL I - Fax (02) 3264212

Please send me detailed information about LIGHTING SHOW 91.

Name _____ Company _____

Address _____

DISCOTEC — DUSSELDORF

David Neale reports from Germany

With the economic and political map of Europe now re-drawn the expectations of Discotec 90, in Dusseldorf, which ran from 5-9 November were high.

The new markets of the East were lining up to attend an exhibition in the 'West' as equal partners. In the July edition of L+SI Freddy Lloyd told of the virtues of the new markets in an article headed 'Go East Young Man' (a point taken up by the Dusseldorf Fair authorities in a snappy press release entitled 'Overview of the economic situation in Germany's discotheque sector'). So it was with anticipation of better things to come that I made my way to the show.

The first news to break at the show was the announcement by two of the leading European players Clay Paky (Italy) and Pulsar (UK) that they were setting up a joint venture (covered in depth in the November issue of L+SI).

Meanwhile, on the **Clay Paky & Pulsar GmbH** stand it was very much business as usual. Carl Dodds and John Lindsell of Making Light Work were demonstrating a new light show, based on American composers. The show was, in fact, a dress rehearsal for the L.D.I. show in Orlando (see the review on pages 38 to 48).

AHA GmbH is another new company formed by two ex-members of Avitec

Germany, Joseph Lasek and Peter Danne. The two were proudly showing off their latest creation, in the form of a massive Green field development just outside Cologne — a discotheque called 'M'. At the show itself the company were displaying Trilite structural systems.

UK products could also be seen on the **Light Effects** stand who were representing Le Maitre, Optikinetics Adda Super Cases and Citronic. Light Effects launched a new controller for the Golden Scan. They claim the controller — Light Control System — is an easy to use, low cost controller.

Uli Petzold of **LMP Lichttechnik** spoke of the buoyant market in Germany reporting shipping 150 Intellabeams this year alone. LMP also represent Le Maitre and other UK manufacturers.

Zero 88's main display was on their German distributors stand — **Neuphone** — although their products were to be seen on a number of other stands including LMP.

NJD had a large presence on the **Steinigke Ton — Licht Effekte** stand (don't they have long names) with a display of controllers and disco consoles.

Zitrone had the most visual of stands, inside the Martin Pro Group and were catching a lot of attention with the 'baby' 804 projector proving the show winner.

Also on show for the first time was the new moving light effect, the 10/10.

With a comprehensive sound representation most major international names were on show including JBL, Bose, Toa and Hill Audio. The organisers were proud of the noise limitation, keeping sound levels around 70dB.

Overall the show was a success for the German market — but its timing is under some discussion. As a bi-annual show it falls in the same year as Showtech, Berlin and Photokina, Cologne — and there is always Frankfurt. One visitor suggested they move the whole show east to Leipzig. Whether this happens is up to the German industry — but looking long term they have without doubt a golden opportunity to expand out to a central European market.

Freddy Lloyd said it, and many more will repeat it before the decade is very much older: If you're looking for new markets 'Go East Young Man!'.



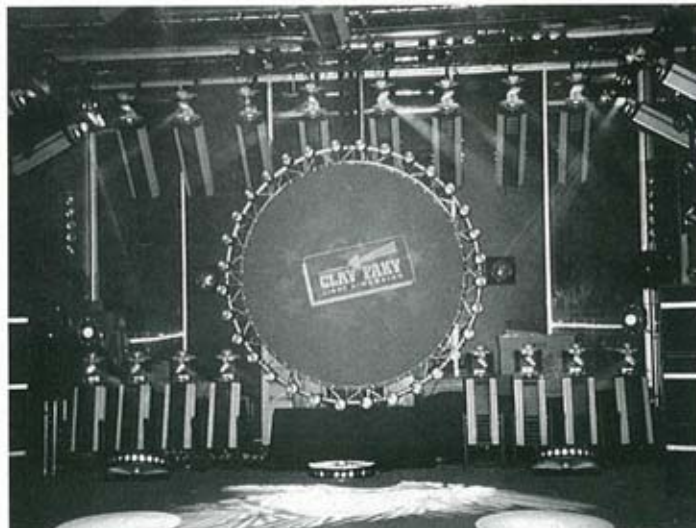
Carl Dodds and John Lindsell with long-time friend, OSKA.



The light control system from Light Effects.



Zero 88's David Catterall on the Neuphone stand.



Two of the leading players on the European stage, Clay Paky and Pulsar.



All systems go for the Clay Paky and Pulsar joint venture. Pictured left and far right are Julio Savoldi and Pio Nahum of Clay Paky with (second left) Ken Sewell of Pulsar and Ralph Jörg-Wezorke of Lightpower.

REPRODUCED SOUND

Ben Duncan reports on the sixth 'Reproduced Sound' conference, organised by The Institute of Acoustics (IOA) in association with SCIF, APRS, AES and ABTT

As is the norm, this year's 'Reproduced Sound' conference was held at The Hydro Hotel, overlooking Lake Windermere. Over 150 delegates were present, embracing audio equipment, manufacturers, broadcasting organisations, electro-acoustic consultants, installers and academics.

CADmongering

The first day was largely given over to talks on acoustic CAD (Computer Aided Design) software used to predict and plan the optimum location of speakers in rooms. The session was organised by SCIF under the provocative banner 'CAD — Tools or Toys?' The day's debate was kicked off by Fred Ampel, editor of the US journal 'Sound & Video Contractor'. In recent months, he'd allowed competing US purveyors of CAD software to conduct heated arguments in the magazine's editorial column. In his paper, he asked 'Can the industry viably support so many disparate programs, with mutually exclusive data sets and incompatible software? And is "this lack of unity . . . denying credibility to the whole universe of Electro-acoustic CAD programming? If no one can agree on standards for measurement, does this leave the results of all the programs in doubt?'

JBL were the first company to release CAD design software: their CADP-1 appeared in 1982. Henrik Staffeldt, technical consultant for JBL at their European HQ in Denmark, discussed the technical details behind JBL's new CADP-2 software, due for release early in the new year.

AcoustaCADD is Altec's program. First released in 1988, and revised this year, it's exclusive to the Mk.VI family of companies meaning it supports Altec, EV and University drive units. John Lanphere, manager of Altec's AcoustaCADD division alluded to the narrow dividing line between CAD as tool or toy. He illustrated how a given program is regarded as a tool until it's superseded by a competitor, whence it becomes a toy by comparison. And how in an effort to make a given program embrace other people's products, accuracy is likely to be degraded, because the accuracy of other maker's speaker data may not meet the

standards required. 'The larger manufacturers have data in 5° increments and the others only have 10° data. We modify our program to accept all three formats. We have diluted the accuracy of our simulations. The calculations are completed faster, but we find . . . (the results) . . . are only valid 50% of the time. We know it's correct 50% of the time — we think it is a tool. They know it is wrong 50% of the time — they think it is a toy.'

Unlike the other PC-based software, Bose's Modeller 3 program runs on Apple Macintosh systems. Bose's Ken Jacobs described how there were no functions in Modeller which favour the use of any particular manufacturer's products. Bose are happy to supply other loudspeaker manufacturers a copy of their utility program and a guide for measuring and preparing the data. The program goes on to respect users' individuality: unlike some others, Modeller allows you to control the program flow, rather than forcing you to follow the predetermined design strategy. You control what kind of calculation is made, where it should be made, and how it is to be viewed, when complete. The main calculation options are direct field, discrete reflections and statistical reverb. Calculations can be made at single points, groups of listener positions, or over arbitrary areas. The program also models STI (Speech Transmission Index), a measure of intelligibility.

John Prohs of Ambassador College, California, described the PHD program. It's intended for the design of systems where speech intelligibility and uniformity of direct sound coverage are the most important criteria. Accordingly, noise levels are considered and semi-reverberant sound levels are predicted, with consideration given to the absorption of direct sound at the first reflection. Being aware that it's often difficult to aim speakers correctly, PHD provides an original viewpoint. The idea is to look into the room from the speaker's position; you get a fish-eye view of the room, as if the speaker were a lens! The advantage of this scheme is that shadowing and overlap are immediately apparent. It also helps the designer to keep the sound coverage focused on the

audience, so knowledge of room reflections (places where you shouldn't be pointing) is less important.

European efforts were represented by NexoCAD and the work of an East German genius, Dr. Wolfgang Ahnert. Eric Vincent (from APIA, the acoustics consultancy who collaborated with Nexo) wasn't able to attend, so Sam Wise (a UK electroacoustic consultant) stood in. Nexo's program majors on the interactions of multiple loudspeakers. It employs advanced mathematics to compute room absorption using 3D calculus. Temperature and humidity are allowed for and the program can be oriented towards speech and music. But it doesn't presently allow for background noise.

Dr. Ahnert's program was developed over the last decade in East Berlin, using a Sinclair computer. The benefit of using an obsolete machine with so little memory is that the software writer has to work very hard; the lines of code have to be extremely slim and efficient. The upshot is a computationally efficient program which runs fast when it's converted and loaded into a modern PC. Today, Ahnert's work has become Renkus Heinz's EASE program. With the benefit of an explicit mathematical discussion, and very fast speaking direct translation, complete with all the verbs placed at the end of the sentence, Dr. Ahnert lived up to the stereotype of the Germanic scientific genius. His work allows loudspeaker data to be viewed in many different formats, from plain directivity charts, to Isobar graphs, and interference between drivers can be modelled. The program also supports exports and imports to and from AutoCAD.

The session finished with a discussion, where users and loudspeaker manufacturers were able to tackle the team of CAD designers. Peter Barnett was concerned about the implied accuracy which was sometimes false. He warned users to be wary of (for example) 1dB step viewing, when the program gave no warning that the real tolerance of certainty is far wider. In the ensuing discussion, all the programs were criticised for omitting tolerances on both the loudspeakers and (far worse) on the materials absorption data. JBL pointed out that



Malcolm Hawksford from The University of Essex spoke on advanced alignments for loudspeaker crossovers.



Richard Small (left) and Laurie Fincham of KEF described the Archimedes Research Project into psychoacoustics.





A seminar in progress in one of the smaller rooms.

their drive units had to be run-in before measurements could be made, whereas Dave Martin (whose famous PA enclosures have been employing JBL drivers for 18 years) disagreed. Tony Andrews of Turbosound made the point that without exception, existing drive-unit data bases were frankly fraudulent, as they all assume that drivers would then make a nonsense of predictions for clustered drivers. Some programs claimed to be able to model interaction, but their realism had yet to be proven. Other delegates raised the objection that diffraction effects weren't modelled at present.

The global conclusion was that acoustic CAD modelling is useful for presenting customers with easy-to-grasp pictorial representations of the proposed scheme(s), and was equally a useful tool, but only in the hands of expert acousticians and sound designers, and that a lot of caveats were in order.

Audio Electronics

David Birt, from the BBC's Design & Engineering Department discussed electronically balanced line interfaces, with an emphasis on their performance in complex installations. Measurements made on transformer and active ('electronically') balanced input circuits were compared. With both short and long (500m) input lines, the transformer coupled option displayed a significant hump above the audio band, enough to have audible effects. The transformer gave better common-mode rejection (to hum) at low frequencies, but the active circuit was superior for rejecting radio frequency garbage, above 100kHz. The inability of 'transformerless' circuits to cope with large common mode voltages, typically induced by mains cables running alongside signal cables, was highlighted. A modified balanced input stage, proven by the BBC over the past 12 years, overcomes the problem by presenting a low impedance to common-mode (noise) signals. David Birt then turned his attention to other practical requirements. First, suppression of RF garbage, picked up from adjacent video cables or nearby radio transmitters. And second, protective components for preventing damage to actively balanced input stages, when the equipment is turned off — the susceptibility of unpowered electronics to damage is a topic that's not normally mentioned.

Mark Sandler and Jim Goldberg of Kings College, London, reported on their ongoing development of a digital power amplifier, using PWM (Pulse Width Modulation) techniques. Such schemes involve opening Pandora's box; having settled on PWM, there are many

different ways of going about it. In the author's paper 'Comparison of PWM Techniques for digital power amplifiers', they looked at the differences in distortion that would be produced by the competing modulation schemes, using computer simulation, so no actual circuitry has to be constructed. The conclusions reached were that no one scheme was the clear winner, and much would depend on the kind of switching used. So all the potential schemes would need further, parallel investigation; and the work continues.

S.P. Leigh, B.M. Cheetam and P.H. Mellor at Liverpool and Sheffield Universities respectively, presented a contrasting paper 'The implementation and performance enhancement of a completely digital power amplifier'. The authors' paper began by highlighting the extreme switching speeds needed to resolve all the details, and pointing out that the introduction of extra distortion was inevitable. They then proposed a sampling process which would minimise the distortion products, as well as reducing the ideal switching rate for 16 bit resolution, from a monstrous 6GHz (i.e. 6000 million transitions per second) to a more reasonable rate of 90MHz, using ECL logic. The conclusion is that a low cost Class D 'digital' PWM power amplifier having a bandwidth and dynamic range that's suitable for vehicles and Public Address is feasible. But did the researchers not know that Peavey (in the USA) and Harrison Electronics (in the UK) have been making amplifiers of this kind since 1987?

Install Advances

Paul Doany of Dar Al Handash Consultants (based in London) presented 'A comparison of STI and ALcons applications in speech intelligibility analysis'. The aim was to compare two different kinds of calculation, which manipulate data on reverberation, time delays, S/N ratios and the like, to predict the intelligibility of speech. The author highlighted the absence of any agreement on the acoustic parameters that affect speech comprehension. ALcons (Articulation Loss of CONsonants) works in the 2kHz band, makes no allowance for early reflections while percentage values (%ALcons) mean different things to different practitioners. The AI method uses signal to noise ratios to predict articulation over the full audio band, but is only effective for noisy places. The S/N method relies on the room's impulse response at 1kHz. It's not reliable for predictions, but could prove useful for objective measurements. More information can be gained by crunching the information gained with HEDC (Hybrid

Energy Decay Curve), a heavy duty computer program. The STI (Speech Transmission Index) method takes the full speech bandwidth into account (250Hz to 8kHz), and is useful in measurements, but again not so easy to use in predictive analysis. It can employ computer simulation, using statistical ray-tracing. The conclusions reached were that the STI and ALcons methods only agreed with one another in the extreme cases of pure reverberation (T) and the presence of a direct soundfield (D/R). Moreover, the advent of computer simulation would enhance predictions with STI, but not so much for %ALcons, which is anyhow preferred for its simplicity.

Peter Barnett's paper 'A practical assessment of speech intelligibility' reiterated the fact that the predictability of speech intelligibility is uncertain. After reviewing the theory, the author demonstrated a direct contradiction, where the %ALcons was compared with a commonsense appraisal of a given system's signal to noise ratio. He also warned of the dangers of misinterpretation, again highlighting an example of a %ALcons calculation which opposed common sense. Overall, it was evident that %ALcons calculations are adversely affected by uncertainties and small percentage variation, in reverberation times.

Peter Mapp (freelance acoustics consultant) and Peter Barnett went on to deliver a joint paper entitled 'Audio power and dynamic headroom requirements for PA and electro-acoustic reinforcement systems'. Their discussion was mainly concerned with the prediction of power requirements for good intelligibility, amidst varying ambient noise levels. The computations have to take account of reverberation, loudspeaker efficiency, and the peak-to-mean ratio of the programme. The authors reached the conclusion that rules-of-thumb, stating X watts per person, were not unreasonable. And that the largest area of uncertainty is in the allowances for programme content, and the transient output capabilities of the power amplifiers. They also noted that it was common for 25% of the total amplifier power to be redundant.

Steve Jones of BJ Auditorium Design described the design criteria behind the installation of the new sound system at the Wembley Stadium complex. There was understandably a strong emphasis (after the Bradford disaster) on life safety evacuation announcements, reliability, and flexibility of the routing and zoning (for matches) and in the delay components, for concert sound.

For such a complex system, with 128 output channels spread across the stadium, it was clearly essential to have a user-friendly interface. In turn, the control centre has a touch sensitive graphical representation of the areas. The 55kW of amplification provided 95dB (over the full audio band, i.e. like 'C' weighting) in the main pitch area, up to 99dB in the main terraces (both with a variation of +/-4dB), and 97dB in the smaller executive suite, with just +/- 3 dB of variation. When a band played through the system during the FA cup final, the SPL was enough to quell the chanting of the supporters. The multiple, localised delay speakers were initially met with scepticism by some touring sound engineers. But tests with PA Rental companies proved that the engineers' fears were justified. Steve Jones attributed this to the use of horns giving controlled coverage, as well as the acceptability of a difference of up to 50mS between the arrival of the primary (local) and secondary (main PA) sources. It seems that the late arrival was just timed right to add a richness to the sound, rather than smearing it, or echoing. Overall, the delay system has reduced the need for such high SPLs from the PA on



Richard Walker of the BBC discussed sound absorption techniques.

stage. In turn, complaints from Wembley's inhabitants have reduced, from 189 in 1987, to 121 so far this year. In both cases, 11 concerts had been held.

David McAlpine, from the University laboratory of physiology, Oxford, updated our knowledge on the 'Biology of hearing and noise-induced hearing loss'. The slide show included pictures of damaged hair cells, and graphs, showing how a damaging stimulus (e.g. a 120dB SPL 3kHz tone!) caused loss of sensitivity from the frequency of the stimulus, to an octave or more above. McAlpine went on to question the validity of the Health and Safety Executive's 'noise' legislation, which is based on the 'Equal Energy Hypothesis' (EEH) and associated scientific data that's at least 25 years old, and not entirely in accordance with the latest research. In particular, irregular transient bursts of high level sound have been found to be far less damaging than continuous stimuli having the same total energy, in essence because the ear has time to recover between times.

This category clearly includes a good deal of music, and these findings back up the intuitive, common sense opinion of the majority of UK sound consultants, who can't see any justification for the present legislation and its failure to differentiate between industrial noise and entertainment.

Dave Bell (of Harris Grant Associates) and Ben Duncan described the design of a low cost SPL data logger. Using an advanced data compression algorithm, it's intended to store up to one year's worth of minute-by-minute SPL readings on a single floppy disc. Harris-Grant Associates initially proposed the equipment for recording studios, so that the studio managers can sleep at night, knowing that hard copy evidence of complying (or not) with the Health & Safety Executive's nearly one year old 'noise' legislation, is being collated automatically. Ken Dibble pointed out that the same equipment would be invaluable for club installations, as well as to PA rental companies.

Loudspeaker and acoustic developments for monitoring systems

At Southampton University's world renowned Institute of Sound and Vibration Research (ISVR), Philip Newell (whose past lives include stints as a top recording engineer, and owner of a seaplane taxi service), Keith Holland and F. J. Fahy have been studying how horn loudspeakers can be improved. They presented two papers. The first demonstrated the benefits of making horns of circular cross section, devoid of the abrupt discontinuities that plague horns used for installation and PA, which need rectangular and other complex profiles for directivity control. The 'Axi-symmetric' horn profile seems to obviate the sonic qualities that have given horn loudspeakers a characteristic



Balanced interface design was on the agenda for David Birt of the BBC.

sound, but its use would be limited to small rooms, notably for monitoring. In the second paper 'Do all mid-range horn loudspeakers have a recognisable characteristic sound?', Phillip Newell described a series of well designed tests, used to prove that the frequency response of a loudspeaker mattered much less than the loudspeaker's time response. With double-blind testing, using non-musical sounds, listeners were able to infallibly identify electrostatic speakers. The tests were also able to show that horn loudspeakers could be made to sound indistinguishable from direct radiator types — particularly if they were of the axi-symmetric kind. Also, the material that the horn was made from couldn't be disguised, although it could be made inaudible. So a metal horn would always sound metallic, if it was audible at all; it would never sound like a wooden or plastic flare. The research also produced the conclusion that while all the horns suffered air overload distortion above some 125dB SPL, the consequent hardening of the sound was plainly academic, as all the direct radiator speakers had burnt out or otherwise disintegrated before they reached such levels!

Keith Holland and Phil Newell also presented a workshop session, entitled 'Esoteric Loudspeaker Cables: Do they really deliver their promises?' This involved playing back R-DAT recordings of a mic'd-up speaker system, made with different loudspeaker cables in place. There were some obvious sonic differences. Still, the authors were keen to point out that one can't go jumping to conclusions. A specific, exotic cable may change the frequency response of the system, introducing a slight loss or gentle rise. As some of the cables cost up to £100 per metre, this represents a rather expensive form of tonal equalisation! As anticipated, the research confirmed that the differences between cables was much less marked in an active system, where each speaker cable passes a limited frequency range, and only has to interface with the complex reactance of the drive-unit. Newell's conclusions were at heart pragmatic. Esoteric cables may be justified in difficult installations, but bog standard cables of adequate cross sectional area will be fine so long as the amplifier is conventional and is located at most a few feet from the speaker(s). There is no guarantee that exotic cables will continue to sound good in the long run; makers and reviewers never discuss (nor test for) longevity. Cable direction had an effect in some instances, but nobody could explain why. The authors' further pointed out that some monitor speakers with complicated passive crossovers can draw maximum currents in excess of 100 Amperes, which would over rule Malcolm Hawksford's work, which showed that audio interconnects



Peter Mapp calculating PA levels.

should be around 0.6mm² (about the size of BT phone wire) for bass and treble frequencies to remain in synchronisation. Finally, the large number of different metal-to-metal contacts between the power amplifier's output transistors and the voice coil in a typical installation seemed like it would swamp out the benefits of exotic conductors and platings.

Malcolm Hawksford (Lecturer in Electronic systems at Essex University) considered new, advanced alignments for loudspeaker crossovers which would minimise lobing effects and also yield simpler circuits. In another paper, Malcolm Hawksford was joined by Richard Greenfield (an Essex graduate) to compare digital equalisation techniques for loudspeaker systems. Two Japanese manufacturers, TOA and Yamaha, have already launched Mk.I processors using digital techniques. The paper set out to compare FIR (Finite Impulse Response) and IIR (Infinite Impulse Response) techniques. They concluded that a hybrid FIR/IIR combination offered the best results.

Laurie Fincham, Richard Small and A. Jones of KEF described Archimedes, a co-operative psychoacoustics research project, funded by a European body, which involves KEF in partnership with the Acoustics department of the University of Denmark and B&O, the Danish Hi-Fi manufacturer. The objective was to quantify the subjective influence or 'feel' of room acoustics, to help speaker designers. The test set-up was predictably sophisticated, employing a computer controlled simulation of any kind of listening room, in an anechoic chamber.

R. Walker (BBC) and Courtenay Nicholas discussed diffusors and absorbers for recording studios and control rooms, respectively. Walker showed how the BBC had fabricated a low cost, wideband diffusor with random element lengths. The random lengths are generated using crafty formulae derived from prime number theory. Assuming they become commercially available, the panels, which are relatively low in cost, would be of interest to installers who are working with architects, particularly as the upside down, 'skyscraper model' effect would be aesthetically pleasing in a wide range of modern architectures. Courtenay Nicholas showed how his company, Acoustic Engineering Services (AES) Ltd., had developed modular sound absorbers, which were affordable by 'incremental' and community radio stations operating on tiny budgets. Not only did the hardware have to be extremely cheap, but also the installation time had to be cut to the bone.

Copies of the proceedings handbook are available at £40 (members) and £55 (non-members) from the Institute of Acoustics, PO Box 320, St. Albans, Herts AL1 1PZ

PLASA News



Chris Sogno (pictured above with PLASA Chairman Kevin Hopcroft) on the PLASA stand at LDI in Orlando last month is to leave the Association before the end of the year. Having relocated to London she will pursue other interests in the 'city'. She will be replaced by Jan Weir.

Quality Meet

PLASA is organising a seminar covering Quality Management Systems and the British Standard BS 5750. In addition to reducing costs, this standard is accepted as a symbol of quality by customers both at home and overseas, and is a very useful marketing tool. Linked with a tour around the new International Convention Centre, the seminar, at the Birmingham Repertory Theatre, is planned for January 22nd. The cost is currently set at £25.00 for a single ticket, and £40.00 for two representatives from the same company. This will include a buffet lunch. Further details will be available from the PLASA office shortly.

Exhibitors Update

Details of the DTI support for Sound and Light 91 taking place from July 10th-12th in Singapore have now been received at the PLASA office. The basic price of £106.00 per square metre leads to a cost of £1590.00 for a standard 15 metre square booth, to include space, shell, carpet and display aids. Travel grants of £1250.00 per company are available with the cut off date fixed for the 29th January, 1991. Please contact the PLASA office as soon as possible for an application form. The DTI have withdrawn their offer of sponsorship for the PLASA group to SIB/Magis in Rimini. The minimum number of companies was not reached before the publicised cut off date.

Exhibition Diary

SOUND 91

February 5-6, 1991

LONDON — Heathrow Penta Hotel. Enquiries: SCIF, 4b High Street, Burnham, Slough, Bucks SL1 7JH. Telephone: (06286) 67633

SIEL 91

February 16-19, 1991

PARIS — Bernard Becker Blenheim, 22-24 rue du President Wilson, 92532 Levallois-Perret Cedex. Telephone: 331.4753.5000. Fax: 331.4756.1267

AUDIO ENGINEERING SOCIETY

February 19-22, 1991

PARIS — Herman Wilmes, Zevenbunderslaan 142/9, B-1190 Brussels, Belgium

U.S.I.T.T.

February 20-23, 1991

BOSTON — 330 West 42 Street, Suite 1702, New York, NY 10036, USA

MUSIC FAIR

March 2-6, 1991

FRANKFURT — Enquiries to Annabel Williams at the PLASA Head Office. Telephone: 0323 410335

LIGHT FAIR

March 5-7, 1991

CHICAGO — 240 Peachtree Street, N.W. Suite 2200, Atlanta, Georgia 30303. Telephone: 0101.404.220.2215 Fax: 0101.404.220.3030

SIB/MAGIS

March 24-27, 1991

RIMINI — Tony Andrew, Knights Management Services. Telephone: 0323 442747. Fax: 0323 840014

A.B.T.T.

Date and venue to be fixed
4 Great Pultney Street, London W1R 3DF
Telephone: 071-434 3901

EXPOMUSICA

May 16-19, 1991

MADRID — IFEMA, Avda de Portugal, s/n Casa de Campo, 28011 Madrid 1101
Telephone: 470.10.14

A.P.R.S.

June 5-7, 1991

LONDON — A.P.R.S., 163a High Street, Richmansworth, Hertfordshire WD3 1AY
Telephone: (0923) 772907

SOUND & LIGHT SHOW and PRO AUDIO ASIA

July 10-12, 1991

SINGAPORE — Enquiries to Annabel Williams at the PLASA Head Office. Telephone: 0323 410335

LIGHT + SOUND SHOW 1991

September 8-11, 1991

LONDON — Enquiries to the PLASA Head Office
Telephone: 0323 410335

VISION & AUDIO 91

September 15-18, 1991

LONDON — Emap Maclaren Exhibitions Ltd, 840 Brighton Road, Purley, Surrey CR2 2BH
Telephone: 081-660 8008

LIGHTING DIMENSIONS INT

November 22-24, 1991

RENO — Enquiries to Annabel Williams at the PLASA Head Office. Telephone: 0323 410225

The Fibre Optic Lighting People

We manufacture and distribute all fibre optic lighting materials - Parglas harnesses and conduits, Parflex polymers, light sources, theatre curtain washers, spot ball and bullet lenses, side emitting fractured fibres, ceiling fittings and large bore fibre optics.

Examples of our fibre optics may be viewed at our Chiswick showroom, 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: 081-995 5179



Tlx: 933718 PAROP G
Fax: 081-994 1102

DIRECT LASERS

Creative Technology

SIMPLY THE BEST

For more information please telephone
Maurice or Mike

462 Ewell Road, Tolworth, Surrey KT6 7EL
Telephone: 081-399 1754

ARK LIGHT THEATRE LANTERN RESTORATION

COLOUR MATCHING
TO DECOR
SPARES, T/H KITS

2 Partridge Close, Upper Bruthingthorpe,
Leicester LE17 5QY
(0533) 478336

INTERNATIONAL DIRECTORY

World-wide contact information for import/export, concert touring, exhibitions, etc.

AUSTRALIA

Strand Lighting - 264-270 Normanby Road,
South Melbourne, Victoria 3205
Tel: (03) 646 4522. Fax: (03) 646 5020

PRO LIGHT & SOUND EXPO '91

The Southern Hemisphere's biggest-ever
professional lighting and sound show!
**WORLD CONGRESS CENTRE,
MELBOURNE, AUSTRALIA
JUNE 14-16, 1991**

Enquiries: PO Box 913 Adelaide Australia 5001
Phone 08 269 4189 Fax 08 377 0564

AUSTRIA

SYLVANIA GTE

Special Products Group
GTE Licht GmbH, Graf Zeppelinstrasse,
9-11, Postfach 1740,
D-8520-ERLANGEN 23, Germany
Tel: (49) 9131 996 222.
Fax: (49) 9131 996 418

LUDWIG PANI

A1070 Vienna, Kandlgasse 23
Tel: (1) 932462
Range of follow-spots and projectors

BELGIUM

SYLVANIA GTE

Special Products Group
GTE Sylvania N.V.
Tel: (32) 16 80 03 69 Fax: (32) 16 81 89 45
P.P.V. Lighting N.V.
Tel: (32) 2 648 70 45 Fax: (32) 2 648 69 97
Ets. Bulterys S.P.R.L.
Tel: (32) 2 466 86 86 Fax: (32) 2 466 96 72

ABD LIGHTING SYSTEMS

Leuvensesteenweg 585, 1930 Zaventem
Tel: (32) 2 7221711 Fax: (32) 2 7221764
Whole range of stage lighting equipment,
systems and projects

SILICON CONTROLS

LIGHT BEAMS - SILICON CONTROLS
Gentsesteenweg 152
B-9800 Deinze, Belgium
Tel: (32) 9186.82.55 Fax: (32) 9186.83.71
Manufacturers of digital and
analog dimmer systems

CANADA

Strand Lighting - 2430 Lucklow Drive 15,
Mississauga, Ontario L5S 1V3. Tel: (416) 677
7130, 1-800-387-3403. Fax: (416) 677 6859

DENMARK

SYLVANIA GTE

Special Products Group
GTE Sylvania N.V.
Tel: (32) 16 80 03 69 Fax: (32) 16 81 89 45
BICO A/S
Tel: (45) 42 84 54 45 Fax: (45) 42 84 20 55
BICO A/S
Tel: (45) 86 43 76 00 Fax: (45) 86 43 79 00

FINLAND

EASTWAY

SHOW SERVICES OY LTD
ATOMITIE 5 B HELSINKI
Tel: 358-0-503 1022 Fax: 358-0-503 1023
Professional lighting and sound equipment
and services in a place you never thought
they would appear. Thomas, Sky-Tracker,
Celco, Avo, Verlinde, Yamaha, EV, JBL, etc.

TFP MARKKINOINTI OY

Import and Export of Lighting and Scenic
Equipment. Exclusive distribution in Finland for
Jands, CCT, Rosco and Tomcat. Always
interested in new product ranges for theatre,
concert and television.
Contact Juha Ihanamaki, telephone 931-113
933. Fax 931-133 077. Address:
Hatanpaanvaltie 4A, 33100 Tampere, Finland

SYLVANIA GTE

Special Products Group
GTE Sylvania N.V.
Industriepark B-3300 TIENEN
Tel: (32) 16 80 03 69
Fax: (32) 16 81 89 45

FRANCE

PULSAR FRANCE Sarl

10 Avenue du Fresne
14760 Bretteville sur Odon
Tel: (31) 741001

Strand Lighting France S.A. - 26 Villa des
Fleurs, 92400 Courbevoie, Paris.
Tel: (1) 47 88 66 66. Fax: (1) 43 33 71 75

SYLVANIA GTE

Special Products Group
GTE Sylvania N.V.
Tel: (32) 16 80 03 69 Fax: (32) 16 81 89 45
Lopitux
Tel: (33) 1 34 10 43 43 Fax: (33) 1 34 10 49 63
L.T.M.
Tel: (33) 1 47 88 44 50 Fax: (33) 1 43 34 94 91
Musicalment Votre
Tel: (33) 1 30 24 25 38 Fax: (33) 1 30 24 06 74

VARI*LITE VARI-LITE FRANCE

Tel: (33) 1 45 07 97 09 Fax: (33) 1 45 07 96 79

COLLYNS

3 Av. des Frères Lumière - BP 120
Z.L. - 92185 ANTONY Cedex
Tel: (1) 46.66.21.34
Telex: 270 604 F Fax: (1) 46.66.04.73
Lighting and Sound
Manufacturer/Importer

GERMANY

PULSAR GmbH

AM Vorort 23
D-4630 Bochum 7
Tel: (49) 234 28171

Strand Lighting GmbH - Helmholzstrasse 16,
1000 Berlin 10 (Charlottenburg). Tel: (49)
30 39 14516. Fax: (49) 39 39 12317

Strand Lighting GmbH - Salzbergstrasse 2,
3340 Wolfenbittel-Salzdahlum. Tel: (49)
5331 3008-0. Fax: (49) 5331 78883

SYLVANIA GTE

Special Products Group
GTE Licht GmbH
Tel: (49) 9131 99 62 22 Fax: (49) 9131 99 64 18
Steffens Lighting
Tel: (49) 4031 13 35 Fax: (49) 31 72 96
Coemar Teatro
Tel: (49) 731 60 12 05 Fax: (49) 731 62 85 2
Eckert Bühnenlicht
Tel: (49) 202 59 20 58 Fax: (49) 202 59 15 03
L.T.M. GmbH
Tel: (49) 221 49 10 23 Fax: (49) 221 49 10 25
Zilz Concerts GmbH
Tel: (49) 221 58 30 31 Fax: (49) 221 58 43 99
FGV Panther GmbH
Tel: (49) 89 613 10 07 Fax: (49) 89 613 10 00
Feldmann
Tel: (49) 8142 53 037 Fax: (49) 8142 86 97
Lee Colortran
Tel: (49) 8171 70 81 Fax: (49) 8171 20 367

VARI*LITE VARI-LITE GERMANY

Tel: (49) 221-582081 Fax: (49) 221-5801979

TOUR SERVICE LICHTDESIGN

Friedr.-Hagemann-Str. 22,
D-4800 Bielefeld 17
Tel: (521) 286060
Concert, stage, TV and industrial lighting
Design and Production Services
Representative of PanCommand systems

AMPTOWN LICHTTECHNIK GmbH

Wandsbeker Str. 26, 2000 Hamburg 71
Tel: (49) 40-64600440
Fax: (49) 40-6412503

HONG KONG

Strand Lighting Asia Limited - 802-4
Houston Centre, 63 Mody Road, Kowloon.
Tel: (852) 3-685161. Fax: (852) 3-694890

ITALY

Strand Lighting SpA - Divisione Trading, Via
Paolo Ablera 82, 00181 Roma. Tel: 06 780
6251. Fax: 06 780 9018

SYLVANIA GTE

Special Products Group
GTE Sylvania N.V.
Tel: (32) 16 80 03 69 Fax: (32) 16 81 89 45
Arzi
Tel: (39) 6 737 07 37 Fax: (39) 6 723 15 41
Tecnilron Elettronica
Tel: (39) 831 39 21 36 Fax: (39) 831 39 28 41
Rank Lighting S.R.L.
Tel: (39) 6 919 71 23 Fax: (39) 6 919 71 36

TEATRO

Teatro Sri, via Inghilterra 2
46042 Castel Goffredo (MN), Italy
Tel: +39 (0)376 780702
Fax: +39 (0)376 780888
Manufacturers of stage lighting. Profile, fresnel,
PC, flood, cyclorama, followspot
'With a touch of Italian elegance'

NETHERLANDS

SYLVANIA GTE

Special Products Group
GTE Sylvania N.V.
Tel: (32) 16 80 03 69 Fax: (32) 16 81 89 45
Ultrax B.V.
Tel: (31) 2503 41 724 Fax: (31) 2503 41 220

LIGHTING SOUND RIGGING

Flashlight®

Flashlight Utrecht Holland B.V.
Gietijzerstraat 5,
3534 AV, Utrecht
Tel: 030-44 48 42
Fax: 030-44 76 06

NEW ZEALAND

SELECON NEW ZEALAND

40 Drake Street, Freemans Bay, Auckland 1
Tel: (64) 9 792 583 Fax: (64) 9 770 116
Manufacturers of high quality stage and display
luminaires - Zoomspots, fresnels; PC, Cyc, floods.
LV and metal halide display spots. Distribution in
Australia and Asia. Rental and production; project
design and management

NORWAY

SYLVANIA GTE

Special Products Group
GTE Sylvania N.V.
Tel: (32) 16 80 03 69 Fax: (32) 16 81 89 45
Lars Farnes A/S
Tel: (47) 2 16 29 30 Fax: (47) 2 16 47 39

PORTUGAL

SYLVANIA GTE

Special Products Group
GTE Sylvania N.V.
Tel: (32) 16 80 03 69 Fax: (32) 16 81 89 45
Sylvania Electronica LTDA
Tel: 35114 18 62 17 Fax: 35114 18 69 25

SPAIN

SYLVANIA GTE

Special Products Group
GTE Sylvania N.V.
Tel: (32) 16 80 03 69 Fax: (32) 16 81 89 45
MIM Power A.S.
Tel: (34) 3 329 80 08 Fax: (34) 3 329 02 99

VARI*LITE VARI-LITE SPAIN

Tel: (34) 1 470 23 30 Fax: (34) 1 479 58 25

SWEDEN

AVAB

Västra Hamngatan 1,
411 17 Göteborg, Sweden
Tel: (46) 31 179240
(UK distributors:
CCT Theatre Lighting)
Tel: 081-640 3366

SYLVANIA GTE

Special Products Group

GTE Sylvania N.V.
Tel: (32) 16 80 03 69 Fax: (32) 16 81 89 45
Teatertechnik AB
Tel: (46) 8 40 92 90 Fax: (46) 8 40 93 94

SWITZERLAND

POWER LIGHT

Fabrikmattenweg 8, CH-4144 Arlesheim
Tel: (41) 61 701 82 28 Fax: (41) 61 701 8338
Equipment rental and services. State-of-the-art
lighting equipment for TV, stage and concert
productions, exhibitions and product launches
throughout Europe: Xenon Troussers, Paris, Avo,
Celco, Thomas, Verlinde, Strand, CCT,
Sky Trackers and searchlights
At the heart of Europe!

SYLVANIA GTE

Special Products Group

GTE Sylvania N.V.
Tel: (32) 16 80 03 69 Fax: (32) 16 81 89 45
GTE Licht GmbH
Tel: (49) 9131 99 62 22
Fax: (49) 9131 99 64 18

UNITED KINGDOM

ADB UK

Siemens House, Windmill Road
Sunbury-on-Thames, Middlesex TW16 7HS
Tel: (0932) 752994 Russell Dunsire
Lighting equipment, systems and projects

SYLVANIA GTE

Special Products Group

GTE Sylvania Limited
Tel: (0274) 595921 Fax: (0274) 580632
Action Lighting
Tel: 081-965 6800 Fax: 081-965 0950
Lighting Technology Group
Tel: 081-965 6800 Fax: 081-965 0950
Valiant Electrical
Tel: 071-736 8115 Fax: 071-731 3339
Specialist Lamp Distributors
Tel: 061-873 7822 Fax: 061-873 8089
AC Lighting
Tel: (0494) 439076 Fax: (0494) 461024
DC Lighting
Tel: (0235) 770715 Fax: (0235) 770720
Technical Lamps Ltd
Tel: 081-979 6652 Fax: 081-979 9007
Primarc
Tel: (0734) 596777 Fax: (0734) 505964

USA

Strand Lighting - 18111 South Santa Fe
Avenue, PO Box 9004, Rancho Dominguez,
California 90224. Tel: (213) 637 7500.
Fax: (213) 632 5519

Strand Electro Controls - 2975 South 300
West, Salt Lake City, Utah 84115. Tel: (801)
487 6111 Fax: (801) 466 1003.

TO ADVERTISE IN THIS
SECTION RING
ALISON HUNT ON (0323) 642639



New York

Tel: (914) 942 0075 Fax: (914) 942 0099

Orlando

Tel: (407) 855 8060 Fax: (407) 855 8059

TMB ASSOCIATES

PRODUCTION SUPPLIES & SERVICES

2915 Floyd Street, Burbank
California 91504
Tel: 818-842-9652
Fax: 818-842-1064

TOMCAT

Staging, Lighting and Support Systems
Serving your tour and fabrication
needs in the USA
Tel: (915) 686-7029
Fax: (915) 683-5426

PHOEBUS MANUFACTURING

San Francisco, California
Tel: 414-550-1177 Fax: 415-550-2655
• Ultra Arc II Followspots
• Silverbeam Searchlights
Dealer enquiries welcome

THE SCROLLER

SETTING THE STANDARD FOR ROLLING COLOUR CHANGERS™

WORLDWIDE SALES:
Wybron US 618/880-9329 Fax: 618/880-9107
AC Lighting UK 0494-446-000
Fax: 0494-461-024

* * *
**HAPPY CHRISTMAS
AND A PROSPEROUS
NEW YEAR
FROM
LIGHTING & SOUND
INTERNATIONAL
AND THE
PLASA OFFICE
IN EASTBOURNE**
* * *

INTERNATIONAL DIRECTORY

World-wide contact information for import/export, concert touring, exhibitions, etc.

ORDER FORM

YES, please book an International Directory entry for
12 ISSUES from the next available edition

Half Display @ £195
(12.5mm x 41.5mm)

Full Display @ £360
(25mm x 41.5mm)

Double Display @ £600
(50mm x 41.5mm)

All bold entries @ £60 per line Normal entries @ £50 per line
(ALL PRICES ARE FOR 12 ISSUES)

NAME _____ POSITION _____

COMPANY _____

ADDRESS _____

POST/ZIP CODE _____

TELEPHONE _____

PLEASE ATTACH YOUR COPY TO THIS FORM



Member Companies

ABRACADABRA (SALES) AND HIRE LTD.
354 Nelson Road, Whitton, Middx TW2 7AH.
Tel: 081-898 1127
Contact: Darryl Hayden

A.C. LIGHTING LTD.
Unit 4, Spearhead Industrial Park,
Lane End Road, Sands, High Wycombe,
Buckinghamshire HP12 4JG.
Tel: (0494) 446000
Fax: (0494) 463024 Telex: 838829
Contact: David Leggett

ADDA SUPER CASES LTD.
P.O. Box 366, Cambridge, CB4 5AX.
Tel: (0223) 233901
Fax: (0223) 233080
Contact: Monica Saunders

AJS THEATRE LIGHTING & STAGE SUPPLIES LTD.
Hightown Ind. Estate, Crow Arch Lane,
Ringwood, Hants BH24 1ND
Tel: (0425) 470888 (Sales)
Tel: (0425) 470088 (Hire)
Fax: (0425) 471398 Telex: 418405
Contact: Simon Sletchley

ALLEN & HEATH
69 Ship Street, Brighton BN1 1AE.
Tel: (0273) 233446
Fax: (0273) 821767 Telex: 878235
Contact: Richard Harris

ANYTRONICS LTD.
Unit 6, Hillside Industrial Estate,
London Road, Horndean, Hants PO8 0BL.
Tel: (0705) 599410
Fax: (0705) 598723 Telex: 869885
Contact: Bob Hall

AREA ENTERTAINMENTS
4 Hinton Road, Hereford HR2 6BL.
Tel: (0432) 355407
Fax: (0432) 354342
Contact: Robert Symonds

ARENA THEATRE LIGHT & SOUND
(Cables & Flexibles Ltd.)
Unit 77, Riverside 3, St Thomas Longley Road,
Medway City Estate, Strood, Kent ME2 4BH.
Tel: (0800) 525162
Fax: (0634) 724924
Contact: Glen Tully

ARRI (GB) LTD.
1-3 Air Links, Spitfire Way, Heston,
Middlesex TW5 9NR.
Tel: 081-848 8881
Fax: 081-561 1312 Telex: 936075
Contact: Tim Burnham

ASTRALLOY INTERNATIONAL LTD.
Unit 1, Manor Road, Leeds LS11 5PZ.
Tel: (0532) 465331
Fax: (0532) 421342 Telex: 55113
Contact: Adrian Brooks

AVENUE ARTISTES SOUND & LIGHT LTD.
47 The Polygon, Southampton SO1 2BP.
Tel: (0703) 227077
Fax: (0703) 334625
Contact: Terence Rolph

AVITEC ELECTRONICS (UK) LTD.
80/81 Walworth Road, Hitchin,
Herts SG4 9SX.
Tel: (0462) 458961
Fax: (0462) 431019 Telex: 825682
Contact: Tony Kingsley

AVOLITES PRODUCTION CO. LTD.
184 Park Avenue, London NW10 7XL.
Tel: 081-965 8522
Fax: 081-965 0290 Telex: 24652
Contact: Derek Halliday

BATMINK LTD.
Glastonbury Warehouse, Silver Street,
Glastonbury, Somerset BA6 8BT.
Tel: (0458) 33186
Fax: (0458) 35320 Telex: 449530
Contact: D. Churches

BOSE (UK) LTD.
Unit G2, Trinity Trading Estate,
Sittingbourne, Kent ME10 2PD.
Tel: (0795) 475341
Fax: (0795) 427227 Telex: 965559

CALNE CABINET MAKERS LTD.
Redman Road, Porte Marsh, Calne,
Wiltshire SN11 9PR.
Tel: (0249) 812656
Fax: (0249) 821233

CANFORD AUDIO
Crowther Road, Washington,
Tyne and Wear NE38 0BW.
Tel: 091-47 0057
Fax: 091-496 0392
Telex: 538202
Contact: Iain Elliot

CARLSBERG TECHNICAL SERVICES LTD.
Unit 8, Anglia Way,
Southall Road West, Mansfield,
Nottinghamshire NG18 4LP.
Tel: (0623) 656390
Fax: (0623) 420893
Contact: Ivor Green

CCT THEATRE LIGHTING LTD.
Windsor House, 26 Willow Lane,
Mitcham, Surrey CR4 4NA.
Tel: 081-640 3366
Fax: 081-648 5263
Contact: David Manners

CELCO LTD.
1-3 Bellingham Road, London SE6 2PN.
Tel: 081-698 1027
Fax: 081-461 2017 Telex: 927624
Contact: Colin Whittaker

CELESTION INTERNATIONAL LTD.
Foxhall Road, Ipswich, Suffolk IP3 8JP.
Tel: (0473) 723131
Fax: (0473) 729662 Telex: 98365
Contact: Linda Brame

CEREBRUM LIGHTING LTD.
Units 4 and 5, Shannon Commercial Centre,
Beverley Way, New Malden, Surrey KT3 4PT.
Tel: 081-949 3171
Fax: 081-949 3649 Telex: 892337 CELCO G
Contact: Mike Fisher

CHRIS JAMES & CO.
Unit 7, North Western Commercial Centre,
75 Broadfield Lane, York Way,
London NW1 9YJ.
Tel: 071-284 2221
Fax: 071-284 2156
Contact: James Phelan

CITRONIC LTD.
Hallifax Road, Bowerhill Estate,
Melksham, Wiltshire SN12 6UB.
Tel: (0223) 705600
Fax: (0225) 709639 Telex: 444131
Contact: Mike Gerrish

CLOUD ELECTRONICS LTD.
140 Stanforth Road, Sheffield S9 3FH.
Tel: (0742) 447051
Fax: (0742) 425462 Telex: 547938
Contact: Roy Millington

COLIN EADES PARTNERSHIP.
83 Tiltshire Street, Hitchin,
Hertfordshire SG5 2DY.
Tel: (0462) 455257
Fax: (0462) 437369
Contact: David Cregan

CYBERDESCENDANCE LIGHTING LTD.
63 Lancaster Road, New Barnet,
Hertfordshire EN4 8AS.
Tel: 081-447 3010
Fax: 081-447 0419
Contact: Del Trew

DATABEAT DIGITAL MUSIC SYSTEMS LTD.
First Floor, Unit 10, Ely Road,
Theale Commercial Estate, Theale,
Berkshire RG7 4BX.
Tel: (0734) 306230
Fax: (0635) 578049

DHA LIGHTING LTD.
3 Jonathan Street, London SE11 5NH.
Tel: 071-582 3600
Telex: 935639
Contact: Wyatt Enever

DIAL SOUND AND LIGHTING
Unit 4C, Wharfedale Road, Euroway
Trading Estate, Bradford, West Yorks BD4 6SG.
Tel: (0274) 651600
Fax: (0274) 651990
Contact: Andy Blackwell

DISCO & CLUB LEISURE INTERNATIONAL.
35 High Street, Sandridge, St. Albans,
Herts AL4 9DD.
Tel: (0727) 439955
Fax: (0727) 44417 Telex 925859
Contact: Jerry Gilbert

DISCO MIRROR
Suite 2, Waterloo Place, Watson Square,
Stockport, Cheshire SK1 3AZ.
Telephone: 061-429 7803
Fax: 061-480 8896
Contact: Colin Gawne

DISCO NEON SIGNS
51 Dunster Road, Keynsham, Bristol BS10 2QB.
Tel: (0272) 864818
Fax: (0272) 866227
Contact: Sean Beech

DISCOMIX CLUB LTD.
PO Box 89, Slough, Berks SL1 8NA.
Tel: (06286) 67276
Fax: (06286) 67057
Contact: Martin Pickard

DONMAR LTD.
Donmar House, 54 Cavell Street,
Whitechapel, London E1 2HP.
Tel: 071-790 166/071-790 6624
Fax: 071-790 6634 Telex: 264892
Contact: John Foley

DOUGHTY ENGINEERING LTD.
Crow Arch Lane, Ringwood,
Hampshire BH24 1AS.
Tel: (0425) 478961
Fax: (0425) 474481
Contact: George Chiverton

EFFECTS LIGHTING (LEICESTER) LTD.
All Saints Road, Leicester LE3 5AB.
Tel: (0533) 516662
Fax: (0533) 516386
Contact: Malcolm Robertson

ELECTRONIC LIGHTING AND MUSIC
Unit 8, Scornier Workshops, Redruth,
Cornwall TR16 5AU.
Tel: (0209) 820599
Contact: Eric Matthews

ELECTROVISION LTD.
Charity Farm, Arch Lane, Garswood,
Nr Wigan WN4 0XL.
Tel: (0744) 892636/892333
Contact: Mark Benyon

EUROLIGHT LTD
Unit 3, Maple Industrial Estate,
Maple Way, Feltham, Middx TW13 7AJ.
Tel: 081-751 6400
Fax: 081-751 3334 Telex: 888941
Contact: Nick Mobsby

EXCITING LIGHTING & DECOR
Unit 72, 1 Balloo Link,
Dunlop Industrial Estate, Bangor,
Co. Down BT9 2JH.
Tel: (0247) 462338
Fax: (0247) 271755
Contact: Harry Filmer

FANTASIA SOUND & LIGHTING
Unit 3, Bacon House Farm, Little Horwood,
Buckinghamshire
Tel: (0296) 713685
Contact: David Laszlo

FARRAHS
Unit 7, St. Georges Industrial Estate,
Richmond Rd, Kingston, Surrey KT2 5BQ
Tel: 081-549 1787
Fax: 081-549 6204 Telex: 945114
Contact: Pete Macaulk

FORMULA SOUND LTD.
Stuart Road, Ashton Road, Bredbury,
Stockport, Cheshire SK6 2SR.
Tel: 061-494 5650.
Fax: 061-494 5651.
Contact: Sandra Cockell

GENERAL ELECTRIC USA.
6-8 Prospect Way, Royal Oak Industrial
Estate, Daventry, Northants NN11 5PL.
Tel: (0327) 775683
Fax: (0327) 76386
Contact: Keith Husley

GLANTRE ENGINEERING LTD.
2 Cremyll Road, Reading, Berks RG1 8NQ
Tel: (0734) 509711
Fax: (0734) 505808 Telex: 846522
Contact: Derek Gilbert

GTE SYLVANIA LTD.
Otley Road, Charlestown,
Shipley, West Yorkshire BD17 7SN.
Tel: (0274) 595921
Fax: (0274) 597683
Telex: 51251

HARMAN (AUDIO) UK LTD.
M81 Street, Slough, Berks SL2 5DD
Tel: (0753) 76911
Fax: (0753) 35306 Telex: 849069
Contact: Sean Martin

HAZEL GROVE MUSIC COMPANY LTD.
Bulkeley House, Stockport Road, Cheadle,
Cheshire SK8 2AA.
Tel: (061 491) 1068
Fax: (061 428) 5595 Telex: 668017
Contact: Malcolm Rusby

HILL AUDIO LTD.
Hollingbourne House, Hollingbourne,
Maidstone, Kent ME17 1CJ
Tel: (0622) 880555
Fax: (0622) 880550 Telex: 966641
Contact: R.G. Harrison

H-LASER SOUND & VISION LTD.
32 Lexington Street,
Soho, London W1R 3HR.
Tel: 071-437 8992/7444
Fax: 071-494 0386
Telex: 297761 BTICQ G
Contact: Martin Butler

INFINITY INTERNATIONAL
Unit 6D Newmarket Lane, Felx Ind.
Estate, Leeds LS9 6SH.
Tel: (0532) 632227
Fax: (0532) 630527
Contact: Geoff King

JAMES THOMAS ENGINEERING LTD.
Station Approach, Pershore Trading Estate,
Worcestershire WR10 2DB.
Tel: (0386) 553002
Fax: (0386) 552321 Telex: 336808
Contact: Mervyn Thomas

JASCO LIGHT & SOUND LTD.
Unit 5, 315 Summer Lane, Hockley
Birmingham B19 3RH.
Tel: 021-359 7261
Fax: 021-359 7262
Contact: Joe Sharpe

J.E.M. SMOKE MACHINE CO. LTD.
Vale Road Industrial Estate
Boston Road, Spilsby, Lincs. PE23 5HE.
Tel: (0790) 54050
Fax: (0790) 54051 Telex: 37207
Contact: Jon Potts

R.G. JONES SOUND ENGINEERING
Beulah Road, Wimbledon, London SW19 3SB.
Tel: 081-540 9881
Fax: 081-542 4368 Telex: 881497
Contact: Mark Adams

JULIANA'S LEISURE GROUP.
4 Addison Bridge Place,
London W14 8XZ.
Tel: 071-603 1113
Fax: 071-603 4038 Telex: 916474
Contact: Micky Towler

KELSEY ACOUSTICS LTD.
28 Powis Terrace, London W11 1JH.
Tel: 071-727 3046
Fax: 071-243 0211
Contact: Richard Vickers

KENNETH BURR ASSOCIATES
19 Woodland, Sevenoaks,
Kent TN15 0HZ.
Tel: (0732) 64132
Fax: (0732) 62281
Contact: Kenneth Burr

LABTEK
Unit 7, Denton Drive Industrial Estate,
Northwich, Cheshire CW9 7LL.
Tel: (0606) 40447
Fax: (0606) 40448
Contact: Andrew McLuckie

LAMBDA PLC
Albion Mills, Albion Road, St. Albans,
Herts AL1 5EB.
Tel: (0727) 40527
Fax: (0727) 37811 Telex: 265871
Contact: Neil Drain

LASER CREATIONS LTD.
55 Merrifry Terrace, Bames,
London SW13 9DL.
Tel: 081-741 5747
Fax: 081-748 9879 Telex: 8954111
Contact: Chris Matthews

LASER MAGIC
Unit 39, Cradle Hill Industrial Estate,
Seaford, East Sussex BN25 3JE.
Tel: (0323) 890752
Fax: (0323) 898311
Contact: Stephen Harvey

LASERPOINT COMMUNICATIONS LTD.
44/45 Clifton Road, Cambridge CB1 4FD.
Tel: (0223) 212331
Fax: (0223) 214085
Contact: Sarah Bradford

LASER SYSTEMS LTD.
Unit 11, Llanserhan Park, Cwmbran,
Gwent NP44 3AX.
Tel: (0633) 838280
Fax: (0633) 838218 Telex: 497072
Contact: Geoff Jones

LE MAITRE HOLDINGS PLC.
316 Purley Way, Croydon CR0 4XJ.
Tel: 081-686 9258
Fax: 081-680 3743 Telex: 883220.
Contact: Dick Carrier

LEAMINGTON SIGHT & SOUND
Unit 17, Rigby Close, Heathcote Ind.
Estate, Leamington Spa, CV34 67J.
Tel: (0926) 833617
Fax: (0926) 883120
Contact: Peter Maddison

LEE COLORTAN INTERNATIONAL
Manchester Road, Kearsley, Bolton,
Lancashire BL4 8RL.
Tel: (0204) 73373
Fax: (0204) 862843 Telex: 635829
Contact: Paul Baker

LIGHT ENGINEERING LTD.
64 Eden Road, Walthamstow, London E17 9JY.
Tel: 081-520 2336/7
Fax: 081-509 1332 Telex: 898005
Contact: Stephen Demeza

LIGHTFACTOR LTD.
11 Fairway Drive, Fairway Industrial Estate,
Greenford, Middlesex UB8 8PW.
Tel: 081-575 5566
Fax: 081-575 8678 Telex: 935030
Contact: Mick Hannaford

LIGHTING AND SOUND SERVICES
237 Chester Road, Helsby,
Cheshire, WA6 0AD.
Tel: 092-82 3502
Contact: Phil Johnson

LIGHTNING SOUND AND LIGHT
400-412 Bearwood Road, Warley,
Birmingham B66 4EX.
Tel: 021-429 6884
Fax: 021-429 6882

LIGHTING TECHNOLOGY GROUP LTD.
Unit 2, Westpoint Trading Estate,
Alliance Road, London W3 0RA.
Tel: 081-993 9993
Fax: 081-992 0212
Contact: Ron Knell

LIGHT WORKS LTD.
2a Greenwood Road, London E8 1AA.
Tel: 071-249 3627
Fax: 071-254 0306
Contact: Charlie Paton

LMC AUDIO SYSTEMS LTD.
Unit 10, Acton Vale Industrial Park,
Cowley Road, London W3 7QE.
Tel: 081-743 4680
Fax: 081-749 9875
Contact: Paul Hinky

LONDON ACOUSTICAL DEVELOPMENTS LTD.
8 Hartfield Road, Wimbledon,
London SW19 3TA.
Tel: 081-946 6063
Fax: 081-946 5743
Contact: Gaj Pyndiah

LUTON SOUND & LIGHTING LTD.
75 & 86-88 Wellington Street, Luton,
Bedfordshire LU1 5AA.
Tel: (0582) 410733
Fax: (0582) 391012 Telex: 825562
Contact: Eamon Hailes

LYNX LIGHTING LTD.
5 Oxford Road, Pen Mill Trading Estate,
Yeovil, Somerset BA21 3HR.
Tel: (0935) 29290
Fax: (0935) 79439
Contact: Nick Searle

LYTEMODE LTD.
Unit 3, Maple Industrial Estate,
Maple Way, Feltham, Middx TW13 7AJ.
Tel: 081-751 6400
Fax: 081-751 3334 Telex: 888941
Contact: Nick Mobsby

MALHAM LTD.
65-75 Malham Road, London SE23 1AJ.
Tel: 081-699 0917.
Contact: Steve Drewett.

M&M LIGHTING LTD.
87 Gloucester Avenue,
London NW11 8LB.
Tel: 071-722 4447
Fax: 071-722 3940
Contact: Mike Goldberg

MARQUEE AUDIO LTD.
Shepperton Studio Centre, Studios Road,
Shepperton, Middlesex TW17 0QD.
Tel: (0932) 566777
Fax: (0932) 568989 Telex: 894278
Contact: Spencer Brooks

MARTIN AUDIO
Cressex Industrial Estate,
High Wycombe, Bucks HP12 3RD.
Tel: (0494) 35312
Fax: (0494) 38669
Contact: David Martin

MARTIN PRO SOUND & LIGHT
125 Blacklock Rd, London N4 2JW.
Tel: 071-354 2254
Fax: 071-226 9994
Contact: Martin Prescott

RADRO CRAFT LTD.

139 Netheroyd Hill Road,
Cowliffe, Huddersfield,
West Yorkshire HD2 2LZ.
Tel: (0484) 534575
Fax: (0484) 424376
Contact: Richard Mathias

MEMOTECH COMPUTERS LTD.

Unit 24, Station Lane,
Witney, Oxfordshire OX8 6BA.
Tel: (0993) 778691
Telex: 94017359
Contact: G. Boyd

METEORITES PRODUCTIONS LTD.

4 Elstree Way, Borehamwood,
Hertfordshire WD6 1BS.
Tel: 081-207 5111
Fax: 081-207 3655 Telex: 265871
Contact: Ronan Willson

METRO AUDIO & COMMUNICATIONS LTD.

Unit 7, St. Georges Estate, 380 Richmond Road,
Kingston, Surrey KT2 5BQ.
Tel: 081-549 1787
Fax: 081-549 6204
Contact: Colin Lane-Rowley

MICHAEL STEVENS & PARTNERS

Invicta Works, Elliott Road, Bromley,
Kent BR2 9NT.
Tel: 081-460 7299
Fax: 081-460 0499 Telex: 896979
Contact: Michael Stevens

MICO LIGHTING LTD.

Troydale Lane, Pudsey, Leeds LS28 9LD.
Tel: (0532) 567113
Fax: (0532) 572358 Telex: 556469
Contact: Michael Kitching

MIDDLESEX SOUND & LIGHTING LTD.

6 Village Way East, Rayners Lane,
Harrow, Middlesex HA2 7JY.
Tel: 081-866 5500
Contact: Mike Olivier

MIDLAND THEATRE SERVICES.

Junction 1 Industrial Estate,
Dartmouth Road, Smethwick, Birmingham B66 1AX.
Tel: 021-525 4545
Fax: 021-525 2413
Contact: Jane Watkins

MIDNIGHT SALES LTD.

The Arches, Grosvenor Terrace,
London SE5 0NP.
Tel: 071-703 0011
Fax: 071-703 8123
Contact: David Rose

MODE ELECTRONICS LTD.

Cheshing Lodge, Towell, N. Ware,
Hertfordshire SG12 0LB.
Tel: (0920) 462121
Fax: (0920) 553644 Telex: 817837
Contact: John Bradbrook

MSL PRO LIGHT & SOUND

125 Blackstock Rd, London N4 2JW.
Tel: 071-354 2254
Fax: 071-226 9994
Contact: Martin Prescott

MULTIFORM LIGHTING

Bell Lane, Lickfield,
East Sussex TN22 1QL.
Tel: (0825) 763348
Fax: (0825) 763330
Contact: Iain Price-Smith

MUSHROOM LIGHTING SERVICES LTD.

76 Tenter Road, Moulton Park Ind. Estate,
Northampton NN3 1AX.
Tel: (0604) 494866/494991/790900
Fax: (0604) 491118
Contact: Paul Butler

MUSICRAFT LTD.

238 Edgeware Road, London W2 1DN.
Tel: 071-402 2998
Fax: 071-706 2872
Contact: Jack Saund

MYSTICAL LIGHTING LTD.

23 Low Farm Place, Moulton Park
Industrial Estate, Northampton NN3 1HY.
Tel: (0604) 491737
Contact: Marie Cochrane

NEON LIFE ASSOCIATES

Unit 1, Clovelly, Chapel Road,
Meppeshall, Bedfordshire SG17 5NQ.
Tel: (0462) 818641
Fax: (0462) 817352
Contact: Neon

NIGHT FLIGHT SOUND & LIGHTING

Turwood, Bowling, Strathclyde,
Glasgow G60 5AB.
Tel: (0389) 79261
Fax: (0389) 79260
Contact: Bill Smith

N.J.D. ELECTRONICS LTD.

30 Ascot Industrial Estate, London Street,
Sandlacre, Nottingham NG10 5D.
Tel: (0602) 294122
Fax: (0602) 490453 Telex: 374605
Contact: Keith Greenwood

NORMAN GRAY CHARTERED DESIGNER

Falind House, 22 Newbridge Road,
Bath, Avon BA1 3JZ.
Tel: (0225) 312786
Contact: Norman Gray

NORTHERN LIGHTS

89 Scotforth Road, Lancaster LA1 4SD.
Tel: (0524) 845584
Fax: (0524) 845583
Contact: Ray Wilkinson

OHM INDUSTRIES LTD.

Unit 3b, Wellington Close, Parkgate Ind.
Estate, Knutsford, Cheshire WA16 8XL.
Tel: (0565) 54641
Fax: (0565) 53641
Contact: Colin Hill

OPTIKINETICS LTD.

38 Cromwell Road, Luton LU3 1DN.
Tel: (0582) 411413
Fax: (0582) 400613 Telex: 825920
Contact: Neil Rice

OPUS AMPLIFICATION.

35-37 Parker Lane, Burnley,
Lancashire BB11 2BU.
Tel: (0282) 20795
Fax: (0282) 52525 Telex 63201
Contact: Jim Garlick

ORANGE DISCOTHEQUE CENTRE LTD.

734/736 Oxford Road, Reading,
Berkshire RG3 1EH.
Tel: (0734) 509969/589453
Fax: (0734) 507072
Contact: Simon Spragg

ORPHEUS PUBLICATIONS

Fourth Floor, Centro House,
Mandela Street, London NW1 0DU.
Tel: 071-387 3848
Fax: 071-388 8532
Contact: Eddie Fitzgerald

OXTRON DIGITAL SYSTEMS

Sucklings Yard, Church Street,
Ware, Hertfordshire SG12 9EN.
Tel: (0920) 460542
Fax: (0920) 460543
Contact: Geoff Kingston

P.A. INSTALLATIONS LTD.

26-28 Inkerman Street, Llanelli, Dyfed SA15 1SA.
Tel: (0554) 752490
Fax: (0554) 777848
Contact: Paul Adams

PANSCAN

83 Gloucester Road, Brighton,
East Sussex BN1 4AP.
Tel: (0273) 672043
Fax: (0273) 682674 Telex: 932131031
Contact: Margaret McLaren

PAR OPTI PROJECTS LTD.

Unit 9, The Bell Industrial Estate,
Cunnington St, Chiswick Park, London W4 5EP.
Tel: 081-995 5179
Fax: 081-994 1102 Telex: 933718
Contact: Paul Raymond

PEAVEY ELECTRONICS (UK) LTD.

Hatton House, Hunters Road, Weldon Ind Estate,
Corby, Northants NN17 1JE.
Tel: (0536) 205520
Fax: (0536) 69029
Contact: Ken Achard

PEGASUS SOUND & LIGHT

23-25 Cannongate, The Royal Mile,
Edinburgh EH8 8BX.
Tel: 031-556 1300
Contact: David Hunter

PENN FABRICATION LTD.

26 St. John's Estate, St. John's Road,
Penn, Buckinghamshire HP10 8HR.
Tel: (0494) 81 6262
Fax: (0494) 81 6074
Telex: 837987

PLAYLIGHT HIRE LTD.

67 Ayres Road, Old Trafford,
Manchester M16 7QN.
Tel: 061-226 5858
Fax: 061-232 9530
London: 081-965 8188
Leeds: 0532 461948
Birmingham: 021-328 1591
Contact: Nick Rowland (Manchester)

POWERDRIVE DRUM CO. LTD.

Unit M1, Cherrycourt Way,
Stanbridge Road, Leighton Buzzard,
Bedfordshire LU7 8UH.
Tel: (0525) 370292
Contact: K. Dowzell

POWERHOUSE HIRE

(Rainbow Discotheques)
247 Oakleigh Rd Nth, Whetstone,
London N20 0TX
366 Sydenham Road, London SE26 5EZ.
Tel: 081-659 9022/081-368 9852
Fax: 081-368 6229 (South)
Contact: Norman Smithers (North)
Contact: Steve Tourle (South)
482 Broad Lane, Bramley, Leeds LS3 3ER
Tel: (0532) 553090
Fax: (0532) 550918
Manager: Robin Smith

PRESENTATION CONSULTANTS LTD.

Units 4 and 5, Shannon Commercial Centre,
Beverly Way, New Malden, Surrey KT3 4PT.
Tel: 081-949 3070
Fax: 081-949 3649 Telex: 892337 CELCO G
Contact: Mike Fisher

PULSAR LIGHT OF CAMBRIDGE LTD.

Henley Road, Cambridge CB1 3EA.
Tel: (0223) 66798
Fax: (0223) 460708 Telex: 83697
Contact: Derrick Saunders

RAINBOW INTERNATIONAL

448 Uxbridge Road, Shepherds Bush,
London W12 0NS.
Tel: 081-743 9999
Contact: Mervyn Thomas.

RAMSA

(Panasonic Consumer Electronics UK)
Willoughby Road, Bracknell, Berks RG12 4FP.
Tel: (0344) 853176
Fax: (0344) 863656
Contact: Ian Sharpe

R.K. LIGHTING LTD.

4 Sleep Hill, Streatham, London SW16 1UL.
Tel: 081-769 5714
Fax: 081-677 7463 Telex: 896559
Contact: K. M. Ahmed

ROSCOLAR LTD.

Blanchard Works, Kangley Bridge Road,
Sydenham, London SE26 5AQ.
Tel: 081-659 2300
Fax: 081-659 3153 Telex: 8953352
Contact: Joanne Butler

ROSSULA LTD.

11 Fairway Drive, Fairway Industrial Estate,
Greenford, Middlesex UB6 8PW.
Tel: 081-575 5566
Fax: 081-575 8678 Telex: 935030
Contact: Mick Hannaford

SCOTT SOUND SYSTEMS

451 Handsworth Rd, Sheffield, S. Yorks S13 9DD.
Tel: (0742) 580722
Fax: (0742) 758157
Contact: G. Ibbotson

SHUTTLESOUND LTD.

4 The Willows, Willow Lane,
Mitcham, Surrey CR4 4NX.
Tel: 081-640 9600
Fax: 081-640 0906 Telex: 27670
Contact: Tony Oates

SLICK SYSTEMS

Portland Street North, Leek,
Staffs ST13 6LA.
Tel: (0538) 372109
Fax: (0538) 38135
Contact: Paul Marsh

SMITHFIELD ELECTRONICS

1 West Street, Hooles, Chester CH2 3PL.
Tel: (0244) 49062
Contact: Chris Aberdeen

SOFISCOTECH

1440 Leeds Road, Bradford,
West Yorkshire BD3 7AA.
Tel: (0274) 661406
Contact: Keith Walker

SOUND CREATIONS

8 Britannia Road, Worcester WR1 5BQ.
Tel: (0905) 21707
Fax: (0905) 21613
Contact: Eddie Davies

SOUND ELECTRONICS (NEWCASTLE) LTD.

201-205 Jesmond Road,
Newcastle Upon Tyne NE2 1LA.
Tel: 091-281 4248
Fax: 091-281 1994
Contact: Ray Scott

SPECIALIST LAMP DISTRIBUTORS LTD.

10 Sovereign Enterprise Park, King William Street,
Salford, Manchester M5 2JF.
83 Lombard Grove, Camberwell London SE5 7QZ.
Tel: 061-873 7822 (Manchester)
Fax: 061-873 8089 Telex: 668168
Contact: Ron Merchant

SQUIRE SOUND & LIGHT LTD.

Units 24/25 Enterprise Estate, Moorfield Road,
Slyfield Green, Guildford, Surrey GU1 1RB.
Tel: (0483) 301319
Fax: (0483) 301314
Contact: Simon Cummings
Branches: Birmingham (021) 520 4545
Glasgow (041) 946 3303
Guildford (0483) 502121
London 081 451 5556
Manchester (061) 866 8075

STAGE TWO LTD.

197 Watford Road, Croxley Green,
Rickmansworth, Herts WD3 3EH.
Tel: (0923) 307189
Fax: (0923) 55048
Contact: Terry Douris

STAR HIRE

Blackburn Hall, Milton Road, Thurlough,
Bedfordshire MK44 2DG.
Tel: (0234) 772233
Fax: (0234) 772272 Telex: 825644
Contact: Roger Barnett

STARSTREAM AUDIO VISUAL LTD.

Party House, Mowbray Drive,
Blackpool FY3 7JR.
Tel: (0253) 302602
Fax: (0253) 301000 Telex: 67426
Contact: John Barnett

STARLIGHT DESIGN (Light & Sound) LTD.

Units 6 and 7, Hardwicke Road Industrial Park,
Great Grimsden, Sandy, Beds SG9 3BJ.
Tel: (07672) 771567/8
Fax: (07672) 7730
Contact: Graham Smith

STRAND LIGHTING LTD.

Grant Way (off Syon Lane), Isleworth,
Middlesex TW7 5QD.
Tel: 081-560 3171
Fax: 081-568 2103 Telex: 27976
Contact: David Brooks

STUDIO 1 ELECTRONICS

The Gatehouse, Foley Trading Estate,
Foley Street, Hereford HR1 2SF.
Tel: (0432) 277067
Contact: Bryan Morris

SUPERMICK LIGHTS

179-121 Freston Road, Holland Park,
London W11 4BD.
Tel: 071-221 2322
Fax: 071-727 8693
Contact: Peter Clarke

SYSTEM FREESTYLE LTD.

East Street, St Ives, Huntingdon,
Cambridgeshire PE17 4PD.
Tel: (0480) 65212
Fax: (0480) 494922
Contact: Colin Freeman

TANNOY LTD.

Rosehall Industrial Estate, Coathbridge,
Strathclyde, Scotland ML5 4TE.
Tel: (0236) 20999
Fax: (0236) 28230
Contact: Philip Neighbour

THEATRE PROJECTS SERVICES LTD

20-22 Fairway Drive, Greenford, Middlesex UB6 8PW.
Tel: 081-575 5555
Fax: 081-575 0105
Contact: Alan Thompson

THE MUSIC COMPANY LTD.

Unit JE, Hillam Road Industrial Estate,
Canal Road, Bradford, West Yorkshire BD2 1QN.
Tel: (0274) 309966
Fax: (0274) 308706
Contact: Miles Marsden

THE SOUND DEPARTMENT LTD.

Askew Crescent Workshops,
Askew Crescent, London W12 9DP.
Tel: 081-749 2124
Fax: 081-749 8789
Contact: Steve Smith

THE SOUND PRACTICE

The Studio, 36 Spring Street, Rugby,
Warwickshire CV21 3HH.
Tel: (0788) 541133
Fax: (0788) 541314
Contact: Ken Dibble

THE SOUND WORKSHOP.

19-21 Queens Road, Halifax HX1 3NS.
Tel: (0422) 345021
Fax: (0422) 345031 Telex: 517776
Contact: Richard Lockyer

THEATRE SOUND AND LIGHTING (SERVICES) LTD.

9 Wigton Place, Kennington, London SE11 4AN.
Tel: 071-582 8009
Fax: 071-820 9584
Contact: Matthew Griffiths

TOA ELECTRONICS LTD.

Tallon Road, Hutton Ind. Estate,
Brenwood, Essex CM13 1TG.
Tel: (0277) 233882
Fax: (0277) 233566
Contact: H. Greenaway

TOBYSOUND LTD.

Unit 1, Clarke Industrial Estate, Wetmore Road,
Burton-upon-Trent, Staffs DE14 1QT.
Tel: (0283) 511000
Fax: (0283) 514241 Telex: 878723
Contact: David Clarke

TRANTEC SYSTEMS LTD.

Unit 30, Wates Way,
Willow Lane Industrial Estate,
Mitcham, Surrey CR4 4HR.
Tel: 081-640 0822
Fax: 081-640 4896
Contact: Terry Mabey

TRIPLE E LIMITED

B3 Tower Bridge Business Square,
Clemons Road, London SE36 4EF.
Tel: 071-237 6354
Fax: 071-237 7650
Contact: David Edelstein

TUNEWELL TRANSFORMERS LTD.

15A Myddleton Road, Wood Green,
London N22 4NG.
Tel: 081-888 6044
Fax: 081-888 0158
Contact: Tony Heaney

TURBOSOUND LTD.

Star Road, Partridge Green,
West Sussex RH13 5EZ.
Tel: (0403) 711447
Fax: (0403) 780155 Telex: 878723
Contact: Richard Frankson

UL UNIVERSAL LASERS.

3 Newton street, Grantham,
Lincolnshire, NG31 6HA.
Tel: (0476) 73006
Fax: (0476) 73060
Contact: Manoochehr Kamani

VOLT LOUDSPEAKERS LTD.

Enterprise House, Blyth Road,
Hayes, Middlesex UB8 1DD.
Tel: 081-573 4260
Fax: 081-573 4260
Contact: David Lyth

W.B. LIGHTING LTD. T/A COEMAR (UK).

4 Tenter Road, Moulton Park Industrial
Estate, Northampton NN3 1PZ.
Tel: (0604) 499331
Fax: (0604) 499446 Telex: 312320
Contact: Roman Walantia

WEMBLEY LOUDSPEAKER CO. LTD.

Askew Crescent Workshops,
Askew Crescent, London W12 9DP.
Tel: 081-743 4367
Fax: 081-749 7957 Telex: 9413506
Contact: Paul MacCallum

WHARFEDALE LTD.

Sandless Way, Crossgates, Leeds,
West Yorkshire LS15 8AL.
Tel: (0532) 601222
Fax: (0532) 600267 Telex: 556357
Contact: Gary Orrell

WHITE LIGHT (ELECTRICS) LTD.

57 Filmer Road, London SW6 7JF.
Tel: 071-771 3291
Fax: 071-371 0806 Telex: 295811
Contact: John Simpson

WYNNE WILSON GOTTLIER LTD.

The Old Mission House, Ide Hill, Sevenoaks,
Kent TN13 6BZ.
Tel: (0732) 75204
Fax: (0732) 75617
Contact: Tony Gottelier

YAMAHA KEMBLE MUSIC (UK) LTD.

Mount Avenue, Bletchley, Milton Keynes,
England MK1 1JE.
Tel: (0908) 373771
Fax: (0908) 368872
Contact: Alan Martin

ZERO 88 LIGHTING LTD.

Hart Road, St. Albans, Herts AL1 1NA.
Tel: (0727) 833271
Fax: (0727) 43676
Contact: Freddy Lloyd

Professional Lighting & Sound Association

Chairman: Kevin Hopcroft (NJD Electronics Ltd.)

Vice-chairman: Tony Kingsley (Avitec Electronics UK Ltd.)

Treasurer: Marion Smith (Starlight Design Ltd.)

Committee: Paul Adams (PA Installations Ltd.), Tony Akers (Citronic Ltd.)

Peter Brooks (Zero 88 Lighting Ltd.), Matthew Griffiths (Theatre Sound and

Lighting Ltd.), Colin Whittaker (Celco Ltd.), Mike Wood (WB Lighting Ltd.)

DIRECTORY

Lighting + Sound
Equipment Sale/Hire
Installation and Design

TSL

Theatre Sound & Lighting
(Services) Ltd

U.K. DISTRIBUTORS
FOR

Clear-Com

Intercom Systems

67 DRURY LANE,
LONDON WC2B 5SP
Phone 071-836 7877/8

Southwest Lighting

Manufacturers of Pin Spots,
Moon Beams, Helicopters,
Stage Cans, Scanners etc.
Dealers required.

The Old Smithy, Church Road
Cockwood, Exeter, Devon
Tel: (0626) 890806
Fax: (0626) 891465
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: 071-582 3600 Fax: 071-582 4779
Telex: 935639 GOBOCO G

The
*Fibre Optic
Lighting*
People

We manufacture and distribute all fibre optic lighting materials. Parglas harnesses and conduits, Parflex polymers, light sources, theatre curtain washers, spot ball and bullet lenses, side emitting fractured fibres, ceiling fittings and large bore fibre optics.

Examples of our fibre optics may be viewed at our Chiswick showroom, 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 8EP
Tel: 081-995 5179



DONMAR Ω

EQUIPMENT & SUPPLIES

WHATEVER YOU NEED - PHONE OR FAX US

- 4,000 STOCK LINES FROM 50 MANUFACTURERS.
- COMPETITIVE PRICES WITH RAPID DESPATCH NATIONWIDE.
- FREE COPY - DONMAR REFERENCE MANUAL.

DONMAR LTD., 54 CAVELL STREET, LONDON E1 2HP
OPEN MON-FRI 0900-1800 & SAT 0900-1300
SALES 071-790 1166 □ SERVICE 071-790 6624 □ FAX 071-790 6634



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

RAPER & WAYMAN

Audio Systems Design & Installation

Public Address & Sound Reinforcement for Conference, AV & Live Sound Presentation in Theatres, Halls, Clubs & Studios

Equipment Sales & Hire
Full Service Facilities
081-800 8288

LIGHTING HIRE SALES SPECIAL F/X

STAGE CONTROL LTD.
STATION PARADE,
WHITCHURCH LANE,
EDGWARE, MIDDX. HA8 6RW
TEL: 081 952 8982
FAX: 081 951 4178
TELEX: 924896



FUTURIST LIGHT & SOUND

HIRE ■ SALES ■ SERVICE
0924 455586 ■ 0924 468183

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

NORTHERN LIGHTS

Sound & Lighting

Distributors

Trade representation for

DATA DISPLAY
OPTIKINETICS
POWERDRIVE
ANYTRONICS
LE MAITRE
MULTIFORM
FABTRONIC
ZERO 88
PULSAR
AVITEC
CLOUD
SHURE
MODE
ICE

89 Scotforth Road, Lancaster.
Tel: 0524 62634.

LIGHT WORKS LIMITED

Performance Lighting
Design and Development

2A Greenwood Road
London E8 1AB
Tel: 071 249 3627
Fax: 071 254 0306

SPOT ON FOR QUALITY



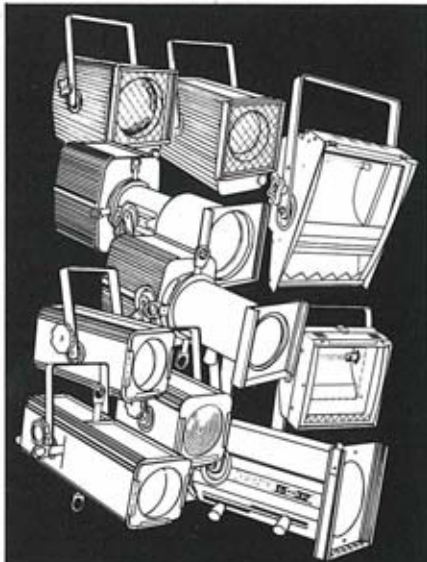
Sound, Lighting and Special Effects for leisure, promotion, entertainment and the arts.

- 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

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: 081 640 3366 TELEX: 946648

THE ATRE
THE ATRE
THE ATRE
MARQUEE
SOUND
SOUND
SOUND

EQUIPMENT HIRE

CONTACT: STUART MILLER
071-439 8421

SUITE 5, 3-5 BATEMAN ST., SOHO,
LONDON W1V 5TT



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

ELTEC

Manufacturers of
Drama Lighting Control Systems

Eltec Drama Lighting, Unit 2, Cain Valley Trading Estate
Llanymylyn, Powys SY22 5DD Tel: (059-184) 8801

The Professional People

Lighting sales and hire to the
Entertainment, Conference,
Exhibition and Leisure Industries.
From Sales Conference to Car
Launch, Fashion Show to
Exhibition Stand.
Contact the specialists in lighting.



**MUSHROOM
LIGHTING**

76 Tenter Road, Moulton Park Industrial Estate,
Northampton NN3 1AX

Telephone: (0604) 790900 Facsimile: (0604) 491118

LIGHTING HIRE & SALES

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

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



**Big Screen
Video projection equipment
&
TV Monitors
(Grundig, NEC, Thomson,
Sanyo).**
New & Reconditioned

ENQUIRIES

VIDEO MONITOR SERVICES
071 350 1098

MICO LIGHTING

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

Excellent Trade terms
available.

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

Telephone: (0532) 567113

Fax: (0532) 572358

Telex: 556469 (MICO G)

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

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) 722468

Hire and Sales Northwest:
051-334 8991

TRAFALGAR LIGHTING LTD.

081-443 4960

LIGHTING
SALES-HIRE
SECONDHAND KIT
BOUGHT & SOLD

081-443 4960

P.A.music

Disco!

Club! Fun-pub!
Hospitality!
Whatever your
running P.A.music
can help you
make it profitable.
Professional
Lighting, Sound
and Special Effects
Hire & Sale
172 High Road
London N2 9AS
081-8834350

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
Unit 4, Askew Crescent Workshops
Askew Crescent, London W12 9DP

Tel: 081-743 4567

Fax: 081-749 7957

NIGHT FLIGHT

Sound and Lighting
**THE BIG ONE IN
SCOTLAND**

Installation, Design,
Hire, Repair and Service
0389-79261

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, Slick Systems Trussing.

Manufacturers of Socket Boxes, Working Light and Specialised control systems

Edinburgh 031-553 2383

(Fax 031-553 3296)

Glasgow 041-440 1771

(Fax 041-445 4406)

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

081 560 3171



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

«black light»

Scotland's lighting company
THE OLD CUSTOMS HOUSE WEST HARBOUR ROAD
GRANTON EDINBURGH EH6 1PH

031 - 551 - 2337
24 HOUR 7 DAY
031 - 229 - 1426
RADIO UNIT 102

HIRES AND SALES

DEALER FOR CCT
ARRI
ROSCO
ZERO 88
COEMAR
LE MAITRE
DURAPLUG
POWERDRIVE

black light

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



Hire • Sales • Service

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

Theatre • Disco • Display • Architectural

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

Sales 0425 470888 Hire 0425 470088



AUTHORISED WHOLESALE DISTRIBUTORS

NJD FOR TOA
ZERO 88 LeMaitre

PULSAR CITRONIC

GLAY PAKY coemar

OPTIKINETICS

J E M BOSE
MODE ELECTRONICS

POWER DRIVE TEATRO

STARDREAM AUDIO VISUAL
Party House, Mowbray Drive,
Blackpool, Lancs.

Telephone: (0253) 302602
Telex: 67426 PARTY G
Fax: (0253) 301000



LIGHTING

HIRE

DESIGN
ENGINEERS

London 081-891 4755



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: 081-751 6400
Telex: 888941 LCCI LITESYM

FOR ALL
YOUR
CONTROL
REQUIREMENTS



Leslie Hire & Sale

For
Stage and TV Lighting
and Stage Equipment,
phone

081 871 5132

LHS Limited, The Business Village, Broomhill Road,
Wandsworth, London SW18 4JG
Telex 917003 LPCG



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

FULL DESIGN SERVICE
Trade/Export Enquiries Welcomed
Starlight Design (Light & Sound) Ltd
Unit 6 and 7, Hardwicke Road Industrial Park
Great Gransden, Sandy, Beds SG19 3BJ
Telephone: (07677) 7715/6/7/8
Fax: (07677) 7730

CHARLES FISHER

S.T.A.G.I.N.G. L.I.M.I.T.E.D.
EXHIBITION and CONFERENCE
DESIGN and CONSTRUCTION

Specialists in Something Different

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

THEATRE LIGHTING AND CONTROL FROM LEE Colortran International

- ★ Windsor luminaires – unique modular design gives eight Profiles, a Fresnel or a PC from just 15 basic components.

Notable features include:

Quick-fit lens tube; Rotating gate; Easy lamp change.

- ★ Club Light range – luminaires ideal for smaller stages, clubs and education venues.

★ Master series dimming and control – including versatile Powermaster dimmers and TriMaster control desks.

★ Lee Filters – by the roll or sheet.

- ★ Replacement lamps – stockists and distributors of all leading lamps.

LEE Colortran International

Manchester Road, Kearsley, Bolton, BL4 8RL

Tel: (0204) 73373

Trade Counter at: 1 Wycombe Road, Wembley, Middlesex, HA0 1QN.

Tel: 081-902 8835

A Lee Panavision International Company

I.T.S. THE BRIGHTEST
PEOPLE FOR ALL YOUR
TECHNICAL THEATRE
REQUIREMENTS



- FREE DESIGN & PLANNING
- INSTALLATION BY EXPERTS
- FULL SERVICE & MAINTENANCE
- GUARANTEED QUALITY
- COUNTER SALES
- AND HIRE AS WELL!

FOR THE BRIGHTEST SERVICE CONTACT:

INDEPENDENT THEATRE SERVICES

Unit 6 Glaisdale Point
Billborough
Nottingham
NG8 4GP

Telephone 0602 854848
Fax 0602 854808

(Call for our new free colour brochure)

"MAKING LIGHT WORK"

LIGHTING HIRE & SALES

Philip L. Edwards
(Theatre Lighting)

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

SGM

MOVING LIGHT SERIES

SOLE UK DISTRIBUTORS

LIGHT ENGINEERING

64 EDEN ROAD, LONDON E17 9JY
TELEPHONE: 081-520 2336/7
FAX: 081-509 1332



PLUS



VISION 2



SEEN AT PLASA AND
ALL IN STOCK NOW



LIGHTING SALES/HIRE

Designers, Technicians and Installers
to the Entertainment and Promotion Industries

NEON LITE ASSOCIATES

Unit 1, Clovely
Chapel Road, Meppershall, Bedfordshire SG17 5NQ
Tel: 0462 811843 Fax: 0462 817352



Entertainment and Display
Lighting Manufacturers

Full brochure and
price list available
Lighting for all your needs
Quality products manufactured

62 Tenter Road,
Moulton Park Ind. Estate,
Northampton NN3 1AX
Telephone: (0604) 790765
Fax: (0604) 47403

M:K:V PRODUCTIONS

SUPPLIERS OF THE FOLLOWING SERVICES TO THE TRADE

The Pleasure Dome Roadshow
the largest mobile Nightclub in Europe -
A sound to light show which has to be
seen to be believed!

- Exhibition Lighting and Sound
- Large Screen Video and Projection
- Generator up to 32K
- Band Lighting and Sound
- Professional Crew Services
- Hire of Lighting, Trussing, Staging,
- Dance Floor, Marquees
- Full Production or Supporting Services
available

contact: Bob Miller or Martin King on
☎ (0271) 865618/862789 Fax: (0271) 863020

CALTHORPE HOUSE, BELMONT ROAD
ILFRACOMBE, DEVON EX34 8DR



RGJONES

SOUND ENGINEERING
8 EULAH ROAD
LONDON SW19 3SB
TEL 081-540 9881
FAX 081-542 4368

Supply, installation
and hire of
professional
sound equipment

WHITE LIGHT MODELBOX

COMPUTER
AIDED
DESIGN

57 FILMER ROAD LONDON SW6 7JF
FAX: 071-371 0806 TEL: 071-731 3291

NORTHERN BRANCH

CORPORATION STREET SOWERBY BRIDGE
NR HALIFAX WEST YORKSHIRE HX6 2QQ
FAX: 0422 839773 TEL: 0422 839651

Entertainment Lighting Hire & Sales



LIGHTING DIMENSIONS (WL) LTD

LONG LANE DUBLIN 8 IRELAND

FAX: DUBLIN 530808 TEL: DUBLIN 530204

POWERENT

GENERATORS-CABLE -TRANSFORMERS

Hire or Sale—New or Used
1 to 3000 KW-50/60 Hertz

Silent Sets—Mobile—Multi Voltage
24 hr. Emergency Service Worldwide
Depots throughout UK and USA

Main Depot:
Telephone: (0204) 813555 Telex: (0204) 813502 Telex: 960324 Power G

Specialist Outside Engineers
LIVE AID U.K. & U.S.A. • GENESIS 1987 EUROPEAN TOUR
AIDA EGYPTIAN OPERA • RUSH U.K. TOUR 1988
BRUCE SPRINGSTEEN EUROPEAN TOUR 1988

Over 40 years' experience in
ENTERTAINMENT POWER SUPPLY

THE COMPLETE POWER SERVICE GROUP

"Our name speaks for itself"

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

VILLA AUDIO

Professional Systems House

A COMPLETE PROFESSIONAL DESIGN & INSTALLATION SERVICE

- Studio Equipment
- Concert Systems
- Computer Division
- Hire Facilities

CHELMSFORD
(0245) 361694

NOVA

MANUFACTURERS OF
QUALITY STAGE
LUMINAIRES AND AURORA
LIGHTING CONTROL
SYSTEMS

AGENTS REQUIRED IN
SOME AREAS

Novalight (International) Ltd
Foxes Bridge Road
Forest Vale Ind Est.
Cinderford,
Glos GL14 2PQ
Telephone: 0594-23197
Fax: 0594-26045

UNITED KINGDOM DISTRIBUTORS

Appointed sole UK-distributors for Program/Sistem

Trade Suppliers of Professional Sound,
Lighting and Special Effects Equipment
Telephone: (0926) 314870
Fax No: (0926) 883120
MOBILE No: (0800) 544934

Situated in the heart of England gives us the right con-
ditions to serve you via the
M1, M6, M45, M65, M62 and the M40 with these
facilities.

- Wholesale trade supply to retailers, installers,
contractors etc.
- Extensive stock on all major manufacturers and some
minor ones too.
- Some own brand products, concentrating on quality
and availability.
- Manufacturers trade prices used, sometimes bettered
considering delivery service.
- Regular personal contact.
- Vehicles travelling the country carrying orders and stock.
- Regular visits averaging 5/6 weeks to Wales, S.E.,
S.W., London, East coast, N.W., N.E., Scotland and of
course the Midlands.
- No delivery costs when orders coincide with visits
(nominal in between times).
- No minimum orders.
- Use of our technical staff - for enquiries and help.

If you are not being offered these
facilities at the moment, but would like
to and would like to know more, we
will be only too pleased to hear from you.

Rigby Close, Heathcote Industrial Estate
Leamington Spa CV34 6TJ England

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

STAGEFLOOR DUO

Instant Layflat

The flooring that will go down and not let you down!!

Phone us for samples of our exclusive product.

Enquiries welcome from European/USA distributors. We are looking to expand our agency network.

CRAIG-LOUTH ASSOCIATES
15 Lansdown Place, Frome
Somerset, England BA11 3HP
Tel: (0373) 61809

K·E·L·S·E·Y ACOUSTICS LTD

FOR ALL
AUDIO &
LIGHTING
CABLE,
CONNECTOR
& CUSTOM
WIRING
REQUIREMENTS

CALL, FAX OR WRITE FOR
OUR CURRENT CATALOGUE.

KELSEY ACOUSTICS LTD,
28 POWIS TERRACE, LONDON W11 1JH
TEL: 071-727 1046 FAX: 071-243 0211

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

TRIPLE E

CURTAIN AND
SCENERY TRACKS

A comprehensive range available for sale or hire, from a wall plaque to a 500-metre system for a product launch at the N.E.C.

ABTT Award winners
1984 "Product of the Year" -
Purpose-made LOOSE PIN HINGE
1988 "Product of the Year" -
UNITRACK system with linear motors
Catalogue available on request



Triple E Limited
83 Tower Bridge Business Square,
Clements Road, London SE16 4EF
Telephone: 071-237 6354
Facsimile: 071-237 7650



Specialist Suppliers
to the Lighting, Sound,
TV and Theatre Industry.

products include:

**PEEL CLEAN
'TOUR LABELS'
SECURITY
'HIRE LABELS'
PRINTED
'CABLE TAPE'**

Main distributors of Standard
and Specialist Self-Adhesive Tapes

For UK & Export
Tel: 0480-494540
Fax: 0480-494206

unit 24, stephenson road, st ives,
huntingdon, cambs pe17 4wj



LIGHTING

HIRE
DESIGN
ENGINEERS

London 081-891 4755

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

GERRIETS

GREAT BRITAIN LIMITED

MADE TO ORDER & CUT GOODS SERVICE

ALWAYS IN STOCK:

**FILLED CLOTH
SHARKSTOOTH GAUZE
SCENIC COTTON
BLACK WOOL SERGE**

plus

PROJECTION SCREEN MATERIALS IN SINGLE &
DOUBLE WIDTH

IF YOU HAVEN'T CALLED BEFORE, ITS
TIME YOU CALLED US NOW!

071 232 2262

For annual advertising rates
in the DIRECTORY section of

LIGHTING SOUND International

telephone

(0323) 642639

**SUPPLIERS OF PROFESSIONAL
LIGHTING AND EFFECTS EQUIPMENT
TO THE ENTERTAINMENT INDUSTRY**



COMPREHENSIVE CATALOGUE LISTING 1,000s OF PRODUCTS - AVAILABLE ON REQUEST

Midnight Sales Ltd., The Arches, Grosvenor Terrace, London SE5 0NP
Tel: 071-703 0011 Fax: 071-703 8123

VIEWPOINT

Jackie Staines on The Future of Job Training

Where better to learn a trade than on the job training? This must surely be true of learning the art of lighting design. Perhaps this accounts for why the regional repertory theatres are full of young people wanting to learn. Young people who can go to tradeshows and demonstrations, flick through endless magazines and brochures to make themselves fully aware of the technological developments in the industry around them but spend their lives working with history. To us, Vari*Lites, Golden Scans, dichroic filters, lasers, intelligent dimmers et al are merely pretty pictures in magazines. They are so out of reach; both in the opportunity to get hands on experience of these things and financially. More money gets spent on a rig of a dozen Vari*Lites than on our entire year's production budgets.

So, that lack of finance leads to the history. I'm not old, neither do I work in museums but I've used pageant lamps and acting area floods, focus spots and resistance dimmers. The first lantern that I ever focused was a mark I Pattern 23. Here I am 15 years on still focusing mark I Pattern 23s.

OK, not all the gear is ancient, but some of the modern stuff is horribly unreliable. It can be very bad for the nerves when there are 480 memories in the Gemini and you just know it's due for its monthly crash any day.

Lack of money doesn't always mean lack of quality or imagination. Indeed, inventiveness is the way of life in the rep. Making gobo rotators (six years before they turned up in the DHA catalogue), cardboard animation disks and gobos from lithographic plate might all sound like a complete bodge to those of you lucky enough to be able to buy or hire exactly what you want. Far from being a bodge, not only does this painstaking work get the show on, but it also offers a great sense of achievement to those technicians with blister-ridden fingers.

If one of the qualities of becoming a lighting designer is an 'aptitude for absorbing the possibilities and limitations of various technologies' (Francis Reid, L+SI October 1990) than where better a training ground than the regional reps where, apart from the budgets, nothing is done by halves. You'll soon learn both the possibilities and the limitations of not only the equipment, but also of the theatre and yourself when you have two shows running in daily rep with an hour or so, maybe two, turn around between them, or anything up to ten

different shows a week at the height of the season.

There are now many colleges running various courses in theatre studies which touch to a greater or lesser degree on lighting and sound techniques but I think that most students and ex-students (myself included) would agree that they have learned far more from hands-on work experience either since leaving college or whilst on college secondments. Don't get me wrong, I'm not knocking the colleges, it's just that stage time can be scarce and resources limited.

Hands-on learning experience is what everyone needs. How else can those magical, mystical all-singing, all-dancing dichroic-vari-laser-scans become reality to people in the poorer end of the market or the high tech lighting computer programmer's learn about life before the discharge lamp? All the more reason for Francis Reid's lighting laboratory.

Perhaps even our employers will schedule time off specifically to visit the laboratory to extend our knowledge, not only of the advances in technology, but also of the techniques being employed by people in similar, or even completely different, situations to our own. A place to discuss our own findings and problems with people that not only speak the same language, but might be able to help. When you've got a niggle about your board or racks, there's little point in chatting about it over a cup of tea in the green room when you could be discussing it with the boys from R&D who work for the major manufacturers.

I still believe that the regional rep is a good place to learn about lighting and also sound, but working in a small subsidised theatre can lead to feelings of insecurity. Pick up any copy of 'The Stage' and somewhere on the first two pages there will be a horror story of a regional theatre's financial crisis. Impending gloom: is it going to be us next?

The distribution of the arts council funding is a critical element in the survival (or otherwise) of a subsidised regional theatre. Bailing out the Royal Shakespeare Company might be great news for Barbican lovers, but it could cast a spell of certain death for any, or even many, of the regional theatres. All the more reason for the availability of training elsewhere.

With a healthy bank balance of arts council and local government funding, where is the money most needed? Not staff wages, not

employing 'stars', not redecorating the front of house and public areas, but on safety. Safety of the public and staff alike.

Much health and safety at work is day to day common sense. Don't block the fire exits, don't use ladders when there's no one else in the building, keep your first aid kits well stocked etc. But with new and ever stringent regulations cropping up all over the place, not only are these regional training centres hard pressed to keep up, they're often illegal as well.

New wiring regulations alone are enough to leave us trembling. How many theatres have earth bonded the lighting grid or flying bars? stopped using trailing cables and grelcos or, God-forbid splitters? changed all their 15a duraplugs for blue 16a IEC connectors?

It's not that we won't change or can't be bothered, (after all, the safety regulations should be of benefit to us all), but that we can't afford the overheads involved in doing the work or going dark long enough to get it done.

If then we are approaching the demise of subsidised regional reps because they are being priced out of existence, where are these young technicians and lighting designers going to train if there are no regional centres? Maybe next time you advertise for a keen, inventive, budget-minded and knowledgeable worker, there will be no reply.



Jackie Staines has worked at the Stephen Joseph Theatre in the Round in Scarborough for three years and currently enjoys the position of chief technician/lighting designer. Prior to joining the company she worked as an electrician for national touring companies and receiving houses as well as smaller fringe venues. She spent some time in London as a sound operator for 'Noises Off' and trained at Croydon College. She now feels most at home in producing theatres.

Index to Advertisers

AC Lighting	16/47	Direct Lasers	64	Nik Milner	52	IFP Markinnointi	20
Arena	2	Doughty Engineering	59/58	Multiform	7	The Great American	
Ark Light	64	General Electric	42/43	Mushroom Lighting	52	Market	15
Avitec Electronics Ltd	37	Intel 91	59	Optikinetics	3	Unusual Rigging	45
Bose	57	Laser Magic	45	Par Opti Projects Ltd	64	Vari-Lite	26
CCT	52	Laserpoint	OBC	Philips	IBC		
Celco Ltd	4	Lee Filters	12/13	Pulsar Ltd	11		
Cerebrum Lighting	8/9	Lighting Technology	6	RB Lighting	52		
Citronic	23	M&M Lighting	44	Siel	22		
Clay Paky/Pulsar	51	Marquee Audio	45	Softiscotech	50		

A NEW DAYLIGHT HAS DAWNED

*The Philips range of single ended MSR daylight lamps,
with smaller luminaires, now enables...*



- *Dimming to 40% with stable colour temperature - 5600k.*
- *New 200W lamp now compliments range of 575W 1200W and 2500W lamps all designed for Hot Re-Strike.*
- *All lamps may be run on existing control gear.*

*For more information on MSR Lamps and a list of manufacturers producing luminaires featuring MSR please send the coupon to:
OEM Department, Philips Lighting Limited, FREEPOST, City House,
420-430 London Road, Croydon CR9 9ET*

Please send information on MSR Lamps to

Name _____

Position _____

Company _____

Address _____

Philips Lighting



PHILIPS

LSI

THE DAWN OF A NEW AGE IN LASER CONTROL

Aquarius

Aquarius, the new generation of laser control desks:

- 8 channels, with over 500 high quality graphics on each.
- 12 parameters for pattern control: each one infinitely variable.
- Waterproof, illuminated keyboard.

• Standard model includes disk drive, MIDI, tape control and RS232 interface.

• Wide range of animation/effects programming, including flip, rotate, zoom, moving background and cross fade.

• Down range effects capability – also controls lighting dimmers and smoke machines.

Full details on Aquarius from:

LASERPOINT

